

# VaughnCollege

of aeronautics and technology



## Undergraduate Catalog 2015–2016

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**Vaughn College**  
**of Aeronautics and Technology**  
**Undergraduate Catalog 2015–2016**

The catalog of Vaughn College of Aeronautics and Technology is prepared by the office of public affairs in consultation with other departments.

While every effort is made to provide accurate and current information, the College, at its sole discretion, reserves the right to change without notice, statements concerning policies, rules, requirements, procedures, courses, curricula, schedules, activities, tuition, fees and calendars of the College that are set forth in this catalog. Such changes can be of any nature, including, but not limited to, the modification, cancellation or elimination of programs, classes or activities.

Payment of tuition, registration or attendance at any class shall constitute a student's acceptance of the College's rights as set forth above. If you have questions or would like current information, please contact the office of admissions at 718.429.6600, ext. 118.

Vaughn College is committed to a policy of equal treatment and opportunity in every aspect of its relations with its students, faculty, staff, applicants and members of the larger community, including consideration for admission to the College and access to the College's programs, privileges, activities and services without regard to age, citizenship status, disability, marital status, national origin, race, religion, creed, veteran status, gender or sexual orientation.

Inquiries regarding the application of the equal opportunity and nondiscrimination policies and procedures at Vaughn College can be referred to the office of student affairs.

For information on Vaughn's master's degree program in airport management, see the graduate catalog on Vaughn's website.

As with all annual publications, information is subject to change.

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# INTRODUCTION TO VAUGHN COLLEGE OF AERONAUTICS AND TECHNOLOGY

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## BRIEF HISTORY

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In 1932, Charles S. “Casey” Jones, a pioneer aviator and aviation company executive, foresaw the need for highly trained technicians to design, build and service aircraft and engines. George A. Vaughn Jr., a World War I flying ace, and Lee D. Warrender, an engineer, joined with Jones in establishing the Casey Jones School of Aeronautics, the predecessor of the Academy of Aeronautics, and in September 1986, the College of Aeronautics.

From 1932 through 1947, the school offered design and maintenance programs, graduating well-trained technicians, many of whom went on to secure leadership positions in the aviation and aerospace industries.

From 1941 to 1945, the Casey Jones School of Aeronautics devoted its resources to the nation’s war effort. During World War II, more than 20,000 technicians were trained for the armed forces.

In fall 1964, the Academy of Aeronautics conferred associate in applied science degrees for the first time, and, in 1969, the Academy was accredited by the Middle States Association of Colleges and Schools.

In 1996, the College completely revised its curricula, resulting in nine new academic programs, including for the first time the bachelor of science and an associate degree in flight.

On May 5, 1998, a state-of-the-art, 35,000-square-foot-addition to the building complex was completed. It includes a 65-foot observation tower, providing a spectacular view of the runways at LaGuardia Airport.

In fall 2001, the College created the Aviation Training Institute, from which the aviation maintenance certificate program is offered. It enables students to earn their airframe and powerplant (A&P) certificate in as few as 16 months. Details about the program, along with its major benefits, appear on pages 94 and 95.

Effective September 1, 2004, the Board of Regents of the state of New York approved the institution changing its name from the College of Aeronautics to Vaughn College of Aeronautics and Technology. Vaughn is a four-year, private institution with bachelor and associate degrees in engineering and technology, aviation and management.

In fall 2007, Vaughn opened its first residence hall with 200 beds. New improvement plans include a new library, additional degree programs and other improvements to the campus. This vision calls for us to provide students with an enriching experience both inside and outside the classroom.

In spring 2008, Vaughn offered its first master of science in airport management—another step forward in implementing Vaughn’s strategic agenda.

What separates Vaughn College from other institutions is our uniquely committed faculty who come to the classroom with extensive experience in such fields as engineering, manufacturing, management and communications.

Working closely with the industries we serve, Vaughn has developed rigorous curricula that incorporate the latest technology as well as the knowledge you need to succeed in your chosen profession.

We provide traditional degrees as well as professional, technical and certification programs that prepare our graduates for successful careers. Most importantly, a degree from Vaughn College provides the critical, analytical and communication skills that form the foundation for a lifetime of success. Our graduates have gone on to become leaders in many major industries. More than 92 percent of our graduates are employed or continue their education within one year of graduation.



## VISION AND MISSION

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### VISION STATEMENT

Vaughn College of Aeronautics and Technology will provide a culture of excellence in which rigorous degree, professional, technical and certification programs are offered. These programs, built on our aeronautical heritage, will incorporate the latest technology and meet the universal needs of the industries they serve. The result will be well-educated graduates who are trained, qualified and successful in their fields.

### MISSION STATEMENT

Vaughn College of Aeronautics and Technology is dedicated to providing a distinctive education to a diverse population of students. Our mission is to create an environment that cultivates personal growth and leadership in preparation for successful careers. Vaughn College is committed to:

1. Maintaining a culture of excellence that is conducive to learning, which enables students, faculty and staff to achieve their fullest personal, professional and career potential.
2. Providing students with the theoretical knowledge and practical skills they need to achieve professional success in their chosen careers; integrating technology into academic programs, while emphasizing communication and analytical skills.
3. Instilling in our students the professional and civic values that will make them outstanding contributors to society; educating students about how to be responsible citizens, whose integrity, personal values and high ethical standards will be emulated within the community.
4. Ensuring academic excellence by recruiting and developing an outstanding faculty and instructional staff, encouraging the pursuit of research and other professional development activities that extend the body of scientific knowledge and its practical application to societal and industrial needs.
5. Serving the industries that employ our graduates by providing an innovative curriculum responsive to changing needs, covering a broad spectrum from leading-edge certification and training to baccalaureate aviation, management, engineering and engineering technology degree programs.
6. Providing an administration that is responsive to the daily and long-term management issues that ensure an environment of excellence in learning.
7. Welcoming men and women from all racial, cultural, ethnic and religious backgrounds, and sexual orientations to join our students, faculty, staff and trustees in support of the vision and mission.

## EDUCATIONAL FACILITIES

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### CAMPUS LOCATION

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Vaughn College of Aeronautics and Technology is located at 86-01 23rd Avenue, Flushing, NY 11369. Located in the New York City borough of Queens, the College offers many opportunities to network with an array of technology and aviation companies.

Vaughn College has a six-acre campus and is convenient to major transportation routes. As part of the institution's strategic plan, a 200-bed residential hall has been built, enabling students to live and pursue their chosen field of study on campus.

### DISTANCE LEARNING

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Vaughn College offers several of its academic and technical courses through distance learning. Vaughn uses cutting-edge technologies to bring the college classroom directly to you. Visit the distance learning website at [www.vaughn.edu/distance-learning.cfm](http://www.vaughn.edu/distance-learning.cfm) for further details or contact the admissions office at 1.866.6VAUGHN, ext. 118.

### A Blended Learning Experience

Vaughn maintains partnerships with companies that provide educational benefits to their employees. Students participate in a blended format that combines live video and web conferencing, and the online classroom.

### Online Courses for On-Campus Students

Many students want the experience of taking some of their courses online to complement their work schedules. On-campus students at Vaughn can participate in online classes to complete requirements for their degree programs. Virtually all management courses are available online; several arts and sciences and other elective courses are also available. Students enrolled in an on-campus degree program may not take more than 50

percent of their curriculum in an online/distance-learning class format.

### **Online/Distance Learning Credit Policy**

Students enrolled exclusively in a registered online program can pursue their prescribed program either online, via video and web conferencing, or on campus, with no minimum or maximum number of credits in any one category (while following the degree requirements).

## **FLIGHT SIMULATOR CENTER**

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Vaughn's \$1 million flight simulator center includes a Frasca 241 and 142, two Redbirds and one CRJ-700 Canadair regional jet trainer. The Redbird FMX is a high-quality, state-of-the-art advanced air training device with an FMX motion platform that manipulates your sense of balance by also simulating 40-degree roll, 50-degree pitch and 60-degree yaw motions.

Redbirds have six monitors dedicated to external views for practicing maneuvers. These simulators can be reconfigured to represent most of the airplanes in a training fleet. The advanced software allows the instructor to monitor and control weather conditions and equipment failures. The instructor can also quickly reposition a flight, pause a flight and replay a previously recorded flight. The Redbird has a vast terrain and airport database as well as a unique pilot key system.

In addition to the interior controls, adjustable pilot and co-pilot seats and instrument panel lighting, the Redbird's capabilities can be further expanded with additional instrument controls, autopilot buttons, aircraft check lists, and indicators for air speed and altitude monitoring.

Currently, Vaughn College's Redbirds can be used in the following training configurations: Cessna 172, steamgauge and glass cockpit, Piper Seneca and Beechcraft Baron.

An additional simulator, a Frasca 241, envelops students in 220 degrees of Tru-Vision Global™ flight. This flight-training device is configured to represent a single-engine Cessna 172 with the Garmin 1000 advanced avionics. These new simulators will join the College's original device, the Frasca 142, which allows students to practice takeoffs, landings and other flight maneuvers. All five simulators will increase the amount of training each flight student will receive.

The Paradigm Regional Jet Trainer offers a precise replica of a CRJ-700 cockpit. A fully

enclosed flight deck and 220-degree wraparound visuals immerse a pilot in the training environment

## **HANGAR COMPLEX**

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The hangar complex provides a realistic aviation setting for students to perform hands-on maintenance on a variety of aircraft. The present fleet comprises twin-engine business jets and several twin- and single-engine general aviation aircraft. Turbojet and turboprop aircraft engine theory of operation is further enhanced by the inclusion of three jet engine test cells.

The hangar facility is also equipped with composite laboratories that are specifically designed to offer hands-on courses in aircraft composite structures.

## **INFORMATION TECHNOLOGY SERVICES**

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Vaughn College has invested significant resources in its computing infrastructure. Network access to computing labs, classrooms, faculty offices and student housing is provided via a high-speed, fiber-optic network backbone, with secure wireless access available in many academic and all residential locations.

All campus computer labs are equipped with state-of-the-art HP computers running Microsoft Office 2010 Professional edition, and many other industry-standard software programs. These computing labs are used for teaching and learning during the day, and are available for general student use during non-class hours. All labs are also equipped with high-speed laser printers.

In addition to providing well-connected academic and residential facilities, Vaughn College has also invested heavily in modern instructional technology. Twelve classrooms have been equipped with large-screen computer and video projection equipment. While this audio-visual equipment is used to present course content in a digital format in the classroom, the College also provides digital access to course content outside of the classroom using an online learning management system. Both of these technologies serve to augment the traditional classroom-based learning approach.

Registered students also have access to student information through the "Vaughn Portal" at [www.vaughn.edu](http://www.vaughn.edu). The portal provides customizable information, a daily campus calendar, as well as news and information.



## **THE FEDERAL AVIATION ADMINISTRATION (FAA)- AUTHORIZED COMPUTER TEST CENTER**

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The FAA-Authorized Computer Test Center at Vaughn provides all written examinations offered by the FAA via computer. The Center has computer stations available and is capable of handling either same-day registration or testing by appointment. In addition, the written Federal Communications Commission (FCC) commercial license examination, as well as many computer company certification tests, can be taken at the center.

### **TEST CENTER HOURS:**

Monday through Friday  
9 a.m. to 5 p.m.

## **LIBRARY**

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Vaughn's library offers extensive general, technical, resource and periodical material. The real and virtual resources include books, periodicals, DVDs and research databases.

The available research databases contain full-text periodicals, journals and newspapers. In addition, the library has an extensive collection of full-text online books.

All faculty, staff and students can access these databases by using a Vaughn email login and password. Vaughn email accounts are assigned by the IT department. Personal computers are available for student use in the library area. There are also four virtual flight simulator stations.

### **FALL AND SPRING LIBRARY HOURS:**

#### **Monday and Tuesday**

7:30 a.m. to 11 p.m.

#### **Wednesday and Thursday**

7:30 a.m. to 9 p.m.

#### **Friday**

7:30 a.m. to 6 p.m.

#### **Saturday**

8 a.m. to 5 p.m.

#### **Sunday**

12 p.m. to 5 p.m.

## **4 SUMMER LIBRARY HOURS**

#### **Monday through Thursday**

7:30 a.m. to 7 p.m.

#### **Fridays**

7:30 a.m. to 4 p.m.

#### **Saturday and Sunday**

10 a.m. to 2 p.m.

## **TEACHING AND LEARNING CENTER**

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The Teaching and Learning Center (TLC) offers a variety of helpful programs, including peer tutoring, supplemental instruction, computer-aided instruction, mini-lectures, audio/video instructional library and workshops, as well as a quiet area to study.

The Teaching and Learning Center also houses the Academic Resource Center (ARC), the Student Success Center (SSC), the Writing Center and Language Lab.

For detailed information on these programs and other resources, see page 34.

## ENROLLMENT SERVICES

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### ADMISSIONS

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Vaughn College of Aeronautics and Technology offers an equal educational opportunity to all students without regard to age, citizenship status, color, disability, marital status, national origin, race, religion, creed, veteran status, gender or sexual orientation.

Applications for fall freshman admission to all bachelor of science programs are due no later than March 1. Applications received after March 1 will be reviewed on a space-available basis. Transfer student applications, as well as all applications for associate degrees, and all applications for January and May admissions are considered on a rolling basis. Applicants for admission must provide:

- Vaughn College admissions application
- An official copy of their high school transcript
- Official college transcript(s), if applicable
- High school diploma or GED with scores
- Immunization records

Success in Vaughn's programs depends to a large extent upon the student's commitment and eagerness to learn. The admissions and class placement procedures are designed to assist each student in choosing the course that suits his or her abilities and level of preparedness.

The admissions counseling staff is available to advise applicants and their parents, and to provide up-to-date advisement material to high school guidance offices. Each applicant is evaluated individually and is kept informed about his or her status by admission status notices, which are issued as changes occur. For more information, contact the office of admissions at: 1.866.6VAUGHN (1.866.682.8446), ext. 118.

### ADMISSIONS PROCEDURES

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#### APPLICATION STATUS

You may apply for admission with one of the following application statuses and choose to enroll as a full- or part-time student, attending classes during the day, evening, weekends or online.

**5**

**Please note:** Not all degree programs can be completed by attending only during evenings, weekends or online.

### ENTRANCE REQUIREMENTS

Minimum requirements include: a high school diploma, General Equivalency Diploma (GED) or equivalent, and proficiency in English as determined by high school transcripts, Scholastic Aptitude Test (SAT), American College Test (ACT) or and English Language Proficiency Exam.

Prospective students who completed secondary education outside of the U.S. may present national school leaving certificates (including: CXC, GCE, "O" and "A" levels, Bagrut, Abitur, IB, Attestat, French Baccalaureat, etc.) for consideration.

Academic and technical aptitudes are required in varying degrees for different programs. In general, bachelor of science (BS) and associate in applied science (AAS) courses depend upon academic abilities, and the associate in occupational studies (AOS) focuses more on technical aptitude. All BS applicants who have completed fewer than 24 post-secondary college or university credits must submit results of the SAT 1 reasoning exam or ACT exam. These results must be less than five years old.

Vaughn requires that all applicants take the Accuplacer Assessment Test, which is administered at the College, to determine course placement. (Students who received a score above 500 on the math and/or critical reading section of the SAT reasoning exam, or equivalent score on the ACT exam, are not required to sit for the placement test.) Transfer students with applicable college credit are also exempt from the Accuplacer, as are students in the Aviation Training Institute.

The Accuplacer Assessment Test is an approved Ability to Benefit (ATB) exam. Prior to the end of the first year at the College, a post-admission test will be administered to all students placed in academic support classes to evaluate yearlong progress.

#### Freshman Applicants

Students who have completed or expect to complete a high school diploma, GED or the equivalent of a US high school diploma may apply as freshmen for either the fall, spring or summer semester.

### **Transfer Applicants**

Students, domestic or international, who have completed post-secondary coursework at an accredited college or university, within or outside the US, can apply for either the fall, spring or summer semester, upon completion of secondary school.

### **Applicants for Readmission**

Vaughn College students who have not been in attendance for one semester or more are required to apply for readmission if they have not been maintaining matriculation. Students applying for readmission are expected to state their reasons for leaving the College and why they wish to return. Official transcripts of college-level courses taken during this period of absence from Vaughn must be submitted with the application for readmission. The application for readmission is available in the office of the registrar, and must be filed with the office of the registrar. Students can apply for the fall, spring or summer semester.

### **Non-Matriculated (non-degree) Applicants**

Students who may or may not be enrolled at other institutions, but wish to take courses at the College, are welcome to enroll in the spring, summer or fall semester. Such students must meet the minimum requirements for admission.

### **Applicants to the Bachelor of Science Degree in Aircraft Operations**

All students enrolled in Vaughn College's bachelor of science program in aircraft operations must complete flight training as part of their degree requirement. Training must be completed at one of Vaughn's selected partner flight-training providers.

Proof of US citizenship is required prior to initiating any flight training in the form of an unexpired US Passport, US Naturalization Certificate, or an ORIGINAL US or Territory Birth Certificate with raised seal. Non US citizens are required to fill out an application with the Transportation Security Administration (TSA) prior to flight training. Students will not be allowed to fly until clearance is provided. IT MAY TAKE UP TO SIX WEEKS FOR CLEARANCE. Information can be found at [www.flighschoolcandidates.gov](http://www.flighschoolcandidates.gov). Resident Aliens and students enrolled in the flight program under an F visa should contact the student advisement center for additional information on requirements.

### **Applicants to Academic Certificate Programs**

Students who hold at least a high school diploma, GED or equivalent may apply for admission beginning in the spring, summer or fall semester.

### **Applicants to the ATI Certificate Program**

Students who do not hold a high school diploma, GED or equivalent can apply to this program. Students can apply beginning in the spring, summer or fall semester.

## **APPLICATION PROCESS**

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Vaughn requires that each applicant submit the appropriate documents listed below. It is your responsibility to ensure that the documents needed to complete your application are submitted in a timely fashion.

### **Application Fee**

A \$40 nonrefundable fee, payable to Vaughn College, in the form of a personal bank check, money order, cash or credit card, is required of each applicant. This fee may be waived with an official fee waiver from your school's college or transfer adviser. Cash, check or credit card payments may be made in person. Credit card payments may also be made via telephone or online at [www.vaughn.edu](http://www.vaughn.edu).

## **TRANSCRIPTS**

### **High School Transcripts**

A record of all work completed at the time of application is required. This report should include World Education Services (WES) or National Association of Credential Evaluation Services (NACES) evaluated certified records of any national examinations required for completion of secondary education (e.g., CXC, GCE "O" and "A" level, IB, French Baccalaureate, Maturita, Bagrut, Abitur, etc.) outside the US.

### **Mid-Year Grades**

First-semester senior-year grades can be important to the admission or scholarship decision. Please ask your guidance office to submit them once they are available.

### **Final Transcripts**

All offers of admission made by Vaughn are contingent upon receipt and review of final high school transcripts, including evidence that you completed your secondary education and

graduated, as well as appropriate immunizations as required by New York state.

### **College Transcripts**

College transcripts are required of all applicants who are seeking transfer credit for work completed at another regionally accredited college or university. Official transcripts noting any coursework from each institution you attended must be filed with the office of admissions. Transfer students who have completed their education in the US and have earned in excess of 24 semester hours of credit following completion of the high school diploma are not required to submit high school transcripts, but must submit proof of high school graduation (in the form of a final high school transcript, diploma or GED certificate).

International students, or students who attended college outside the US must submit their transcripts for evaluation to: World Education Services (WES), P.O. Box 5087, Bowling Green Station, New York, NY 10274-5087. The evaluations must then be forwarded to the office of admissions. Only WES evaluations of college-level credit will be accepted when considering college transfer credit. English-language translations are not sufficient.

### **Advanced Standing**

Vaughn also accepts Advanced Placement (AP) and Credit by Examination, such as the College Level Examination Program (CLEP). College credit can be granted for AP scores of three or higher. College credit is granted for satisfactory CLEP scores for courses offered at the College. Granting of college credit for satisfactory AP and CLEP scores is subject to review from the appropriate academic departments. Students seeking advanced standing credit based on these exams must submit official score reports to the office of admissions. The CLEP credits may only be used for advanced standing at the time of admission to Vaughn College.

### **Letters of Recommendation**

Though not required, letters of recommendation can add to the strength of any application, especially in the scholarship review process.

## **7 Standardized Tests**

Official results of the SAT 1 reasoning exam or the ACT are required for students applying to all bachelor degree programs. Students who have

completed 24 or more post-secondary credits are not required to submit standardized exam results.

You must arrange to have the College Entrance Examination Board (CEEB) or the ACT program send a copy of all test scores to the office of admissions at the College. Vaughn College's CEEB code is 2001; the ACT code is 2699.

### **Interviews**

Both an admissions and a financial aid interview are strongly recommended for all applicants to the aircraft operations (flight) degree program. While personal interviews are not required for admission to other degree programs, they are also recommended.

### **Application Deadlines**

Applications for fall freshman admission to all bachelor of science programs are due no later than March 1. Applications received after March 1 will be reviewed on a space-available basis. Transfer student applications, as well as all applications for associate degrees, and all applications for January and May admissions are considered on a rolling basis.

All applicants are encouraged to file by March 1 for fall and November 15 for spring to take advantage of scholarship opportunities.

## **HIGH SCHOOL EQUIVALENCY CERTIFICATE**

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Admission to Vaughn College is open to high school graduates, holders of a New York State General Equivalency Diploma (GED) and, in some cases, those who qualify for the Equivalency Diploma upon completion of 24 collegiate credits. Applicants to all bachelor of science (BS) programs holding a GED must score 2,500 or higher to be eligible for admission. Those applicants who do not score 2,500 or higher will be referred to the College's associate in applied science (AAS) programs and may be eligible to transfer to the BS programs after a full year of study.

In order to receive a high school equivalency diploma through New York State's Ability to Benefit Program, candidates must provide satisfactory evidence that they have successfully completed 24 credits (semester hours) or the equivalent as a recognized candidate for a college-level degree or certificate at an approved institution.

Effective September 1, 2000, the 24 credits shall

be distributed as follows: six credits in English language arts, including writing, speaking and reading (literature); six credits in mathematics; three credits in natural science; three credits in social science; three credits in humanities; and three credits in career and technical education and/or foreign languages. Prospective students without a high school diploma or GED may work toward their GED at Vaughn College by completing the above-mentioned 24 credits. However, those students must first pass the College's Ability to Benefit exam. Students interested in this option should contact the office of admissions.

## INTERNATIONAL STUDENT APPLICANTS

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International applicants should visit the international student section of Vaughn's website, [www.vaughn.edu](http://www.vaughn.edu), to read and download the latest information and forms. The International Application Supplement and Instructions should be the first document you review.

Applicants who have completed their secondary education in other countries are required to submit WES or NACES evaluated copies of their records, translated into English. A fluent use of English, both written and spoken, is required and must be substantiated in one of the following ways:

1. An English Proficiency Certificate from an acceptable agency (e.g., the Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS)).
2. The completion of the equivalent of four American secondary school units in formal English instruction.
3. Students transferring from other American institutions must submit credentials that describe the admissions action and their academic progress at that institution.

Vaughn College reserves the right to require a student educated in another country to complete additional instruction in English if his/her performance so indicates.

Citizens of other countries who plan to study under F-1 visa regulations may be accepted only for full-time study, must have sufficient financial resources to fund their education without working in the US and must comply with F-1 visa requirements. The American Consulate in the prospective student's home country should be

contacted regarding financial assistance programs available through governmental agencies.

The application for admission (with the required \$40 US fee), as well as the international application supplement, is to be filed at least 90 days before the start of the academic semester for which you are enrolling. The office of admissions will not review any international application submitted without the appropriate application fee.

### TOEFL

Official results of the Test of English as a Foreign Language (TOEFL) must be submitted by all applicants from countries where English is not the official language of instruction. A minimum score of 550 on the paper exam is required for admission consideration or 213 on the computer-based format 80 internet based format. Students who fall below this range will be required to complete an intensive English language program.

Information about any of the tests listed can be obtained through your secondary school or by writing directly to:

*For the SAT @ [www.collegeboard.org](http://www.collegeboard.org):*  
College Board SAT Program  
P.O. Box 025505, Miami, FL 33402

*For TOEFL @ [www.ets.org](http://www.ets.org)*  
Educational Testing Service  
P.O. Box 6151, Princeton, NJ 08541

*For the ACT @ [www.act.org](http://www.act.org)*  
American College Testing Program  
P.O. Box 168, Iowa City, IA 52243

The director of admissions may allow international applicants to substitute results from generally accepted tests of English aptitude other than the TOEFL exam.

### International Applicants' Affidavit of Support

In order to receive an I-20 form issued by the College, international students must provide a duly signed and notarized Affidavit of Support that shows there is adequate financial support (\$38,000 per annum; for flight students, \$55,000 per annum; for ATI students \$32,500 per annum) to finance your education at Vaughn. This affidavit of support is part of the international application supplement. Students who will receive an offer of free room and board must follow the



instructions listed in the College's international application supplement. For up-to-date, detailed information regarding acceptable proof of a student's or sponsor's ability to contribute financial support, consult Vaughn College's international application supplement available on our institution's admissions website.

All of these credentials must be written in English. All translations must be certified and accompanied by notarized copies of the original document(s). Mail application, supporting documents, fees and scores to:

Vaughn College of Aeronautics and Technology  
Office of Admissions  
86-01 23rd Avenue  
Flushing, NY 11369

## **FINANCES FOR INTERNATIONAL STUDENTS**

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All financial arrangements must be completed before departing for the US. Students who transfer to Vaughn from other institutions must file evidence of financial support directly with the admissions office.

An international student accepted for admission is required to submit a nonrefundable tuition deposit of \$400 US to reserve a place among the entering class. Once the affidavit of support and other proof of financial ability have been received, the College will issue a completed certificate of eligibility (Form I-20) to the student. This certificate must be presented to an American Consulate in order to obtain the student classification F visa.

First-year international students must pay tuition and fees in full by the first day of classes. In subsequent years, they are permitted to participate in the College's deferred payment plan. Students who fail to regularly meet their financial commitment after joining a payment plan will be immediately removed from the program.

Students with F visas who transfer from other American institutions should notify Vaughn's admissions office of this change upon applying. The College then will assist these students in processing the required government notification.

branch of the service, including Form DD214.

A visit to the local Federal Aviation Administration's FAA Flight Standards District Office (FSDO) may provide certification to take FAA examinations.

All courses at the College are approved for educational benefits to eligible veterans. The financial aid office will assist veterans in preparing the documents required to obtain financial assistance.

Educational benefits are available at the College to eligible children of deceased or disabled veterans and to survivors of veterans.

## **STUDENTS WITH DISABILITIES**

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While Vaughn does not make any preadmission inquiries about disabilities, applicants who require accommodations due to a disability are encouraged to confer with the admissions office after they receive notification of acceptance.

The Title 504 and Americans with Disabilities Act compliance officers at the College are the associate vice president of student affairs and the director of the teaching and learning center.

## **9 VETERAN APPLICANTS**

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Vaughn may grant college credits for technical training obtained in the military. The applicant must request proper documentation from his or her



## FINANCIAL AID INFORMATION

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Vaughn College provides financial aid packages, which may include scholarships, grants, loans and work study, to students with strong academic records and/or demonstrated need. Counseling and assistance is available at the financial aid office. Financial information is kept confidential to the extent possible.

Applicants for financial aid must complete the Free Application for Federal Student Aid (FAFSA) and a New York State Tuition Assistance Program (TAP) application, if appropriate.

Financial aid is determined by a variety of factors such as income, assets, family size and other family information. Every applicant has unique circumstances, and the financial aid office is committed to helping students and their parents through the process. It is strongly recommended that students file for financial assistance as early in the year prior to enrollment as possible.

Financial aid eligibility requires that the student maintain satisfactory academic progress and program pursuit after enrolling.

### FINANCIAL AID PROCESS

The first step in the financial aid process is filing the Free Application for Federal Student Aid (FAFSA) and the New York State Tuition Assistance Program (TAP) application, if you are a state resident. Applications should be filed as soon as possible because processing can take up to eight weeks.

Financial aid advisors are available to assist you in making the process as simple as possible. You may visit the financial aid office for help with completing forms or to develop a plan to help you pay for college.

For more information on financial aid, call 1.866.6.VAUGHN, ext. 100.

### CONSOLIDATION LOANS

Consolidation loans combine several student or parent loans into one bigger loan from a single servicer, which is then used to pay off the balances on the other loans. It is very similar to refinancing a mortgage. Consolidation loans are available for most federal loans, including Federal Direct loans, FISL, Perkins, Health Professional Student Loans, NSL, HEAL, Guaranteed Student Loans and direct loans. Some lenders offer consolidation for private education loans as well.

Students can consolidate their loans with the US Department of Education's Federal Direct Loan Consolidation program at [www.studentloans.gov](http://www.studentloans.gov)

### ELIGIBILITY FOR FEDERAL AID

In order to qualify for federal financial aid, you must meet the following requirements:

- Be a US citizen or eligible noncitizen
- Be formally accepted by Vaughn College as a degree candidate
- Maintain satisfactory academic progress
- Owe no refund on any Title IV funds or be in default on a student loan
- Have a high school diploma or GED certificate
- Register with the Selective Service, if required

### GOVERNMENT GRANTS AND LOANS

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#### FEDERAL PELL GRANT

This is a grant provided by the federal government to matriculated students who meet the financial need requirements, are in good academic standing and are making satisfactory academic progress.

Award range: \$626 to \$5,775, depending on enrollment status and federal funding for the program.

**Note:** Students pursuing a second bachelor's degree are not eligible to receive a Pell Grant award.

#### FEDERAL SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANT (SEOG)

This grant is awarded to students with exceptional financial need as determined by the financial aid office. To receive a SEOG grant, students must be Pell recipients. Priority is given to students with the lowest eligibility index.

Award range: \$100 to \$4,000

#### FEDERAL WORK STUDY (FWS)

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Federal Work Study (FWS) provides part-time jobs to undergraduate and graduate students with financial need, allowing them to earn money to

help pay for education expenses. The program encourages community service work and work related to the recipient's course of study.

Undergraduate students are paid by the hour. No FWS student can be paid by commission or fee. The College must pay students directly (unless directed otherwise) and at least on a monthly basis. Wages for the program must at least equal the current federal minimum wage but might be higher, depending on the type of work the student performs and the skills required. The amount earned cannot exceed the total FWS award. When assigning work hours, the employer and financial aid counselor will consider the student's award amount, his/her class schedule and the student's academic progress. Students must maintain a cumulative grade point average of at least 2.0.

## **FEDERAL DIRECT LOAN PROGRAMS**

### **DIRECT SUBSIDIZED LOANS**

Direct subsidized loans are for students who have demonstrated financial need. Applicants must be in attendance at least part time (six credits); be in good academic standing and maintain satisfactory progress toward their degree.

The federal government subsidizes these loans, so the loans do not accumulate any interest until the students begin repayment. Subsidized student loans are basically interest-free loans that are backed by the federal government, which means no interest accumulates until repayment begins.

A fee is deducted from the loan by the government. A loan cannot exceed the cost of education minus the expected family contribution (EFC) and other financial aid. For first-time borrowers, the loan proceeds cannot be disbursed until 30 days after the first day of class.

The interest rate is adjusted each year on July 1. Students will be notified of interest rate changes throughout the life of their loans. Loan repayment begins six months after the student is no longer in attendance, or if the student falls below six credits per semester or the student graduates. Borrowers can take up to 10 years to repay the loan.

### **DIRECT UNSUBSIDIZED LOANS**

Financial need does not have to be demonstrated for this loan. Interest accrues from disbursement of funds until the loan is paid in full. A borrower can choose either to pay the interest or allow it to accumulate until repayment begins. The government guarantees the loan, but does

not subsidize the interest, which means the government does not pay the interest while the student is in school.

Applicants must be in attendance at least part-time (six credits), be in good academic standing and maintain satisfactory progress toward their degree. A fee is deducted from the loan by the government. A loan cannot exceed the cost of education minus other financial aid. For first-time borrowers, the loan proceeds cannot be disbursed until 30 days after the first day of class.

### **DIRECT PARENT PLUS LOANS**

The Direct Parent PLUS loan is available to help parents meet the cost of their child's college education expenses. Parents can apply for a Direct Parent PLUS loan up to the cost of attendance less all other aid. The Parent PLUS is a government-backed, no-collateral-required loan available to parents of dependent undergraduate students. The Parent PLUS loan is not need-based but requires credit approval. Repayment of the Parent PLUS loan begins 60 days after the second disbursement has been sent to the college. Parents interested in applying for a PLUS loan first must complete the Direct PLUS Loan Credit Check Authorization Form, which can be picked up in the financial aid office. Borrowers whose Direct PLUS loan credit checks are processed on or after March 29, 2015 and who are denied based on adverse credit history can secure an approved endorser. The endorser is subject to, and must pass, the same credit check as the applicant and the borrower can successfully appeal on extenuating circumstances. In both cases, the applicant will be required to complete PLUS counseling. PLUS counseling must be completed before disbursement of the Direct PLUS loan funds. A completed PLUS counseling session remains valid for the duration of the associated credit check. Parent borrowers and endorsers can complete the Direct PLUS loan application and counseling session by logging on to [www.studentloans.gov](http://www.studentloans.gov).

The interest rates on existing variable rate Stafford and PLUS loans will continue to change annually on July 1, based on the last 91-day T-bill auction in May. Borrowers can lock in the current rate on their variable rate loans by consolidating them. Borrowers can compare the current and new rates between the end of May and the end of June to decide whether it is worthwhile to consolidate before or after the rate change.

**Here are the interest rates for loans first disbursed between July 1, 2014, and June 30, 2015.**

	Undergraduate Students	Graduate Students
Direct Subsidized Loans	4.66%	N/A
Direct Unsubsidized Loans	4.66%	6.21%
Direct PLUS Loans	7.21%	N/A
Direct Grad PLUS Loans	N/A	6.21%

**Amount per year for dependent students whose parents were approved for a PLUS loan:**

Dependent Students	Combined Base Limit for Subsidized and Unsubsidized Loans	Additional Limit for Unsubsidized Loans	Total Limit for Unsubsidized Loans (minus subsidized amounts)
First-Year Undergraduate (Freshman)	\$3,500	\$2,000	\$5,500
Second-Year Undergraduate (Sophomore)	\$4,500	\$2,000	\$6,500
Third-Year and Beyond Undergraduate (Junior, Senior)	\$5,500	\$2,000	\$7,500

**Amount per year for independent (and dependent students) whose parents were denied a PLUS loan:**

Independent Students	Combined Base Limit for Subsidized and Unsubsidized Loans	Additional Limit for Unsubsidized Loans	Total Limit for Unsubsidized Loans (minus subsidized amounts)
First-Year Undergraduate (Freshman)	\$3,500	\$6,000	\$9,500
Second-Year Undergraduate (Sophomore)	\$4,500	\$6,000	\$10,500
Third-Year and Beyond Undergraduate (Junior, Senior)	\$5,500	\$7,000	\$12,500

More information about direct loans can be found at [www.studentloans.gov](http://www.studentloans.gov) or visit the Vaughn College Financial Aid Office.

## **SATISFACTORY PROGRESS STANDARD FOR TITLE IV FEDERAL STUDENT ASSISTANCE**

Satisfactory Academic Progress (SAP) is defined as the successful completion of coursework toward an eligible certificate or degree. Federal regulations require the Office of Student Financial Aid to monitor the academic progress of students receiving financial aid.

### **SAP STANDARDS:**

- apply to undergraduate and graduate students who wish to establish or maintain financial aid eligibility,
- apply to a student's entire academic record, whether or not financial aid was received for prior terms of enrollment,
- include a minimum grade point average, minimum pace requirement, and total number of semester hours earned and/or semesters enrolled, and
- do not apply to students enrolled in the College's eligible certificate programs whose academic progress is monitored by the programs.

### **SAP ELIGIBILITY REVIEW**

Students' academic records are reviewed at the end of each academic year to determine compliance with the SAP standards. SAP review includes all terms of the student's attendance, including summer terms. Students who lose financial aid eligibility due to not meeting SAP requirements may:

- earn the necessary GPA or semester hours to meet the minimum requirements while not receiving federal financial aid
- submit a SAP Appeal Form
- A full-time student (enrolled in 12 or more credits) must pass at least six credits.
- A Three-Quarter-Time student (enrolled in 7 to 11 credits) must pass at least four credits.

**ANY TERM FOR WHICH A STUDENT RECEIVES ZERO ACADEMIC CREDITS (TOTAL WITHDRAWAL, TOTAL FAILURE OR A COMBINATION OF BOTH) WILL RESULT IN THE STUDENT IMMEDIATELY BEING INELIGIBLE FOR FINANCIAL AID FOR THE FOLLOWING TERM.**

## SATISFACTORY ACADEMIC PROGRESS FOR FEDERAL FINANCIAL AID PROGRAMS

Federal regulations require the College to establish and apply reasonable standards of Satisfactory Academic Progress for the purpose of the receipt of financial assistance under the programs authorized by Title IV of the Higher Education Act. The programs subject to this rule include but are not limited to: Federal Pell Grant, Federal Supplemental Educational Opportunity Grant, Federal Work-Study and Federal Direct Loans (Subsidized and Unsubsidized), and Federal PLUS (Parent) loans, and some State and Institutional aid. Failure to meet the requirements listed below will result in the suspension of financial aid eligibility.

**Financial Aid Satisfactory Academic Progress is reviewed at least annually and at the end of the Spring Term for programs of study longer than one year.** Students admitted to a program of study that is less than one year in length will be evaluated at the end of every term. All periods of the student's enrollment are counted, including periods in which the student did not receive Federal Financial Aid. Transfer credit hours will also be counted for determining the number of credits the College accepts towards the student's degree or eligible certificate program.

The Satisfactory Academic Progress Policy includes two components:

**QUALITATIVE (GPA)** – The qualitative standards consist of the grade point average necessary to meet academic progress towards program completion. The chart below shows the required minimum GPA based on the total annual credits attempted (follows the College grading policy for courses taken/retaken within the SAP calculation threshold at the end of the Spring Term).

**Minimum GPA** – To be in good academic standing you must earn a minimum GPA based on attempted credits, at the end of the academic award year, as follows:

<b>Credit Hours Attempted</b>	<b>Required Cumulative GPA</b>
3-14.9	0.75 or greater
15-29.9	1.5 or greater
30-44.9	1.8 or greater
45- or more	2.0 or greater

### **Ineligibility Status:**

Students who have attempted:

- 3-14.9 credits and GPA is less than 0.75
- 15-29.9 credits and GPA is less than 1.5
- 30-44.9 credits and GPA is less than 1.8
- 45 – or more credits and GPA is less than 2.0

Student with completion rate violation: Less than 67% completion rate and 3 or more credits  
Student with 150% Rule Violation

### **QUANTITATIVE STANDARDS (Completion Rate and Maximum Time Frame)**

– The quantitative standards measure the completion rate as well as the total courses attempted overall. You must complete a percentage of all courses attempted and your financial aid eligibility is limited to 150% of the credits required to complete a degree.

**Credit Hour Completion Rate (67% Rule)** - You must successfully complete a percentage of all attempted credits each academic year. The chart below shows how the credit hours attempted are measured to determine Completion Rate (attempted credits X 67% = required credits) and the required completion rate at the end of each academic year:

Credit Hour Completion Rate Example:

	Fall Semester		Spring Semester		Total
Credits Completed	6	+	10	=	16
Credits Attempted	12	+	12	=	24

$$16 / 24 = .67 \text{ (67\%)}$$

Required Completion Rate at the end of each Academic Year:

<b>Year</b>	<b>Credits</b>	<b>Pace</b>
1st Year	1-14.9	23%
2nd Year	15-29.9	37%
3rd Year	30-44.9	53%
4th Year and More	45 or more	67%**

\*Programs 2 years or less must meet the minimal PACE requirements of 67% at the end of the 1st year.

\*\*Bachelor's Degree programs only.

**Maximum Time Frame** - The maximum time frame for students to complete their academic program may not exceed 150% of the published length of the program, measured in academic years. For example, if the length of an AA or AS degree program is 60 credit hours, the maximum period to receive Financial Aid may not exceed 90 ( $60 \times 1.5 = 90$ ) attempted credit hours. The chart below shows the maximum number of credit hours allowed for completion of a program of study. Students who have reached the maximum time frame will become ineligible for financial aid.

Sample Calculations for the 150% rule:

Classification:

AA, AS, AAS, AOS = 65 Credits

BA, BS = 125 Credits

Time Frame Allowed:

97 Credits (including transferred credits)

187 credits (including transferred AA, AS, AAS and AOS)

**Financial Aid Repeating Courses Policy**

The regulatory definition for full-time enrollment status (for undergraduates) has been revised to allow a student to retake, one time only, per previously passed course. For this purpose, passed means any grade higher than an “F,” regardless of the College’s program policy, which require a higher qualitative grade or measure, which is considered to have passed the course. This retaken class may be counted towards a student’s full-time or part-time enrollment status, and the student may be awarded federal aid for the enrollment status based on inclusion of the class. A student may be repeatedly paid for repeatedly failing the same course (normal SAP policy still applies to such cases), and if a student withdraws, from the class he or she is retaking, then the class is not counted as his or her one allowed retake for that course. However, if a student passed a class, received federal aid and retakes the class and then fails the second time, that failure counts as their paid retake, and the student may not be paid for retaking the class a third time.

If a student withdraws from all federally eligible courses in the semester and continues to attend only the course(s) that will not be credited towards the student’s degree, the student is a withdrawal for federal aid purposes. This is because a student is considered to be attending a federally eligible program only if he or she is attending one or more courses in that program for which the student is receiving federal funds.

A recalculation of the student’s federal aid is completed to exclude any credits, for repeated courses, that will not be counted toward the student’s degree. All repeated courses affect the financial aid Satisfactory Academic Progress calculations. A repeated course, along with the original attempt course, will be counted as attempted credit hours.



### **Explanation of Attempted Hours for Pace Calculation**

In compliance with federal regulations, financial aid developed procedures for evaluating pace. In addition to the hours you completed for a letter grade, we will count the following types of credit: Transfer, In Progress (IP), Incomplete (I), Withdraw (W), FX, WX, Satisfactory/Unsatisfactory and repeated courses. Non-credit (NC) or audited (AU) courses do not count toward the calculation of attempted hours.

### **Additional Standards of Academic Progress Requirements and Information:**

Students must be enrolled in a Financial Aid approved academic degree or certificate program.

- Attempted credit hours include all courses for which a student is registered as of the end of the drop/add period.
- The following grades are used to calculate the cumulative GPA: A, B, C, D, F, and U.
- The following grades are counted as attempted credit hours when calculating completion rate but will not count as earned credits: F, U, W, I, and NA
- The following grades do not affect the cumulative GPA, but will be counted as attempted credit hours: I, S, P and NA, and all withdrawals (or their equivalents from transferring institutions).
- The College's Academic Amnesty policy does not apply to the Satisfactory Academic Progress requirements for Federal Financial Aid eligibility.
- There is a 30 credit hour maximum limit for remedial courses.
- Remedial and repeat courses are eligible for Financial Aid, as long as the courses are required by the student's selected academic program, do not exceed the maximum number of credits allowed, and the student is otherwise maintaining Satisfactory Academic Progress.
- Multiple changes to your program will negatively impact your academic progress status.
- Courses not applicable towards your current degree will negatively impact your academic progress status.
- Any term for which a student receives zero (0) academic credits (total withdrawal, total failure or a combination of both) will result in the student to immediately be placed on SAP.

### **APPEAL PROCESS:**

The Vaughn College's SAP Review Committee shall review and validate the documentation attached, to determine if the student has met the

conditions for reinstatement, or if extenuating circumstances of the students should be taken into consideration for reinstatement.

Students, whose eligibility for Federal Financial Aid is approved for reinstatement on a probationary\* basis by the SAP Review Committee, will be awarded effective with the academic term for which the reinstatement is requested, if funds are still available for the current academic term/year. Approval will not be retroactive to prior terms. All costs of attendance incurred during the period of time the student was suspended are the sole responsibility of the student. Upon student's request, denied appeals may be reviewed by the Financial Aid Director or designee for re-review and a final decision.

### **SAP APPEAL AND PROBATION**

#### **SAP APPEAL**

When a student becomes ineligible for financial aid due to failure to meet SAP standards, an opportunity is given to appeal for further financial aid consideration. A student may file a SAP appeal on the basis of:

- death of a relative
- injury or illness of the student
- other special circumstances (such as difficult transition to Vaughn College, family issues, legal troubles, work or budget problems, etc.)

Appeals are considered on an individual basis. Depending on the nature of the appeal, the number of appeals the student has filed and/or the student's academic record, additional steps may be required of the student before the appeal can be accepted. For example, the student may be required to complete an Academic Plan.

Completed SAP appeals will be reviewed within 15 business days. The student will be notified by email if the appeal is accepted or denied. If the email is returned undeliverable, a letter will be mailed to the student's current residing address as listed on Vaughn College's administrative portal or Student Aid Report (SAR). Students should keep the Vaughn email and current residing addresses up to date.

**Please note:** Up to two appeals may be accepted. Per federal financial aid regulations, appeals are not automatically accepted and may be denied based on failure to maintain the Satisfactory Academic Progress standards set forth at Vaughn College.

Students must successfully complete (pass) these minimum requirements each term:



## SAP PROBATION

A student is placed on SAP probation if they fail to maintain Satisfactory Academic Progress after one award year. A SAP appeal must be filed and accepted before a student can be placed on SAP probation. Probation terms are one semester in length. The student is given specific requirements that must be met in order to maintain financial aid eligibility in the future. If SAP probationary requirements are not met within the probation term, the student will again become ineligible for financial aid and may need to file another SAP appeal.

## ACADEMIC PLAN

Students, who at the end of the probation period, do not meet Satisfactory Academic Progress (SAP) may submit a second appeal. If Vaughn College determines, based on the second appeal, that the student will require more than one semester to meet SAP, the student will be placed on probation and must develop an Academic Plan, for one semester. At the end of the semester, the student must meet SAP or meeting the requirements of the Academic Plan, which leads to program completion.

**Note: students whose financial aid eligibility has been reinstated under an academic plan and are making progress under that plan are considered to be eligible students for Title IV purposes.**

## NEW YORK STATE TUITION ASSISTANCE PROGRAM (TAP) GUIDELINES

Students can receive TAP for six semesters in an associate degree program and eight semesters in a bachelor's degree program. Higher Education Opportunity Program students in an associate degree program can receive TAP for eight semesters and 10 semesters for a bachelor's degree program.

### TUITION ASSISTANCE PROGRAM (TAP)

Students must be New York state residents, enrolled full time and in good academic standing. The award is based on New York state net taxable income. Students must complete the online Free Application for Federal Student Aid (FAFSA) and TAP applications.

## PART-TIME TAP PROGRAM

Part-time TAP helps eligible New York residents attending in-state postsecondary institutions on a part-time basis pay for tuition. Part-time TAP is a grant and does not have to be paid back.

### Student Eligibility

To be eligible for part-time TAP, a student must:

1. be a first-time freshman in the 2006-2007 academic year or thereafter.
2. have earned 12 credits or more in each of the two consecutive semesters for a minimum total of 24 credits earned.
3. maintain a minimum of a C average.

### TAP Credits

Part-time TAP payment will be made for students taking six to 11 credits as shown in the chart below.

### TAP Credits

Credits	Percent of Full Award	Points Accrued
6	50%	3
7	58.34%	3.5
8	66.67%	4
9	75%	4.5
10	83.34%	5
11	91.67%	5.5

## NEW YORK STATE AID FOR PART-TIME STUDY (APTS)

This program has the same eligibility criteria as TAP; to receive an APTS award, students must:

1. be enrolled for three to 11 credits
  2. complete an APTS application
  3. submit New York state tax returns for the student and parent
  4. have a cumulative GPA of at least 2.0
- Annual award range: \$250 to \$1,000

More information about grants and scholarships can be found by visiting: <http://www.hesc.ny.gov/pay-for-college/apply-for-financial-aid/nys-tap.html>.

To maintain eligibility for New York state aid, you must make satisfactory progress toward the completion of a degree. To make satisfactory progress, an undergraduate student must accumulate credits toward the degree, according to the following standards:

### TAP Program Pursuit and Good Academic Standing Charts:

Program pursuit and good academic standing chart for students who received TAP before summer 2006:

Before being certified for this payment	Credits completed from prior semester that TAP was received	Cumulative credits needed toward degree	Cumulative Grade Point Average (GPA)
2	6	0	0
3	6	6	1.0
4	9	18	1.2
5	9	31	2.0
6	12	45	2.0
7	12	60	2.0
8	12	75	2.0
9	12	90	2.0
10	12	105	2.0

Program pursuit and good academic standing chart for students who received TAP on or after summer 2006, two-year associate degree programs:

Before being certified for this payment	Credits completed from prior semester that TAP was received	Cumulative Grade Point Average (GPA)
1	0	.0
2	3	.5
3	9	.75
4	18	1.3
5	30	2.0
6	45	2.0

Four- and five-year baccalaureate degree:

Before being certified for this payment	Credits completed from prior semester that TAP was received	Cumulative Grade Point Average (GPA)
1	0	.0
2	3	1.1
3	9	1.2
4	21	1.3
5	33	2.0
6	45	2.0
7	60	2.0
8	75	2.0
9	90	2.0
10	105	2.0

### Satisfactory Academic Progress

Effective 2010-2011 for nonremedial students receiving New York state award payments. (Remedial students, use the 2006 SAP chart.)

### Baccalaureate Program

Payment	Credits	Cumulative Grade Point Average (GPA)
1st	0	0
2nd	6	1.5
3rd	15	1.8
4th	27	1.8
5th	39	2.0
6th	51	2.0
7th	66	2.0
8th	81	2.0
9th	96	2.0
10th	111	2.0

### Associate Program

Payment	Credits	GPA
1st	0	0
2nd	6	1.3
3rd	15	1.5
4th	27	1.8
5th	39	2.0
6th	51	2.0

If you fail to meet continuing eligibility requirements, you may regain eligibility by:

- Making up the deficiency while attending, without state aid
- Leave Vaughn College and return after one year or more
- Receive a one-time TAP waiver. This is granted based on extenuating circumstances and when there is a reasonable expectation that the student will meet future requirements.

### WAIVER GUIDELINES

The New York State Education Department allows a one-time waiver of the pursuit and progress standards if, for some exceptional reason such as serious illness or a death in the immediate family, you were unable to meet the standards. Students who apply for waivers must document the reason for the request.

### VAUGHN COLLEGE GRANTS AND AID

Vaughn College grants and aid are used to assist new and continuing students. Awards are granted to students who are matriculating in a bachelor's or associate degree program. Recipients are selected based on financial need, academic performance and availability of funds. Priority is given to PELL grant recipients and students with the lowest eligibility index. Awards are granted on an annual basis and may be renewed each year, if the student meets the following requirements:

1. Complete the Free Application for Federal Student Aid (FAFSA) on or before the deadline
2. Be registered full time for the fall and spring semesters and at least six credits in the summer sessions.
3. Maintain a cumulative grade point average of no less than 2.0

Awards range: \$475 to \$2,200 for the year.

### BOOK VOUCHERS

Book vouchers are designed to help students who need access to financial aid funds for purchasing books and supplies prior to the scheduled refund date. The following guidelines determine eligibility and how vouchers are used:

- Book vouchers are issued through the office of financial aid to students who have received a financial aid award, have a credit on their tuition account and have proof of registration. These vouchers may be used only at the campus bookstore.
- The voucher must be signed by a member of the financial aid staff to be valid.
- The amount indicated on the voucher must be used to purchase books and supplies for courses in which you are registered. Clothing, snacks and other non-course-related items cannot be purchased with the voucher. A registration form must be presented with the voucher for all transactions.
- A voucher may be used twice during the semester. Subsequent purchases must be paid for out of pocket. Lost vouchers will not be replaced.
- The book voucher is not cash. It cannot be combined with cash transactions, including cash, credit cards, checks, money orders, etc. Cash back and cash refunds are not permitted.
- Returned books are subject to policies estab-

lished by the Barnes and Noble bookstore, which is neither owned nor operated by the College.

- Credit for any balance shown on a voucher will be assigned to your account once the office of student accounts has reconciled all transactions, which may be as early as the fifth week of classes but no later than the end of the semester.

## **ADDITIONAL PROGRAMS**

### **HOPE SCHOLARSHIP**

The Hope Scholarship provides a tax credit equal to 100 percent of the first \$1,000, and 50 percent of the second \$1,000, of qualified tuition and related expenses paid by the taxpayer (e.g., a maximum tax credit of \$1,500).

This tax credit is available for each student for whom the taxpayer pays qualifying tuition and fees. A student may qualify for the tax credit on his or her own basis, but only if the student is independent and not used as a dependent on another person's tax return. The tax credit may be taken only by a taxpayer for whom the student is a dependent for tax purposes. For more information, please consult with a financial aid counselor.

## **VETERANS' EDUCATIONAL BENEFITS**

### **VETERANS EDUCATIONAL ASSISTANCE PROGRAM**

Applications are available at Vaughn, all Veterans Affairs offices and active-duty stations. For more information and applications, please consult with Ida Chan, the College's veterans affairs liaison and assistant bursar, at 1.866.6VAUGHN, ext. 124. Her email address is [ida.chan@vaughn.edu](mailto:ida.chan@vaughn.edu).

### **GI BILL**

The GI bill is available to veterans with at least 181 days of continuous active-duty service, any part of which occurred after January 31, 1955, and before January 1, 1977. Applications are available at Vaughn, all Veterans Affairs offices, active-duty stations and American embassies.

### **TUITION AWARDS FOR VETERANS**

Eligible veterans are New York state residents discharged under honorable conditions from U.S. armed forces and who are:

- Vietnam veterans who served in Indochina between February 28, 1961, and May 7, 1975.
- Persian Gulf veterans who served in the Persian

Gulf on or after August 2, 1990.

- Afghanistan veterans who served in Afghanistan during hostilities on or after September 11, 2001.
- Veterans who served in hostilities that occurred after February 28, 1961, as evidenced by receipt of an Armed Forces Expeditionary Medal, Navy Expeditionary Medal or a Marine Corps Expeditionary Medal.

Awards are available for up to four years of undergraduate study, or five years for enrollment in an approved five-year program; up to three years of graduate study at degree-granting institutions.

### **YELLOW RIBBON PROGRAM**

The Yellow Ribbon benefit was introduced by the federal government to help veterans go to college. It is a provision of the Post-9/11 Veterans Educational Assistance Act of 2008. It supplements the new Post-9/11 GI Bill, and allows private U.S. colleges and universities to voluntarily enter into an agreement with the Department of Veterans Affairs (VA) to fund tuition expenses that exceed the highest public in-state undergraduate tuition rate. The VA matches tuition contributions made by Vaughn College to eligible students.

Beginning in the 2011-2012 academic year, Vaughn College will provide private funds toward the tuition of each qualifying veteran who has been admitted as a full-time undergraduate or graduate student. Student requirements follow:

1. Must complete the FAFSA application for the current academic year
2. Must maintain a GPA of 2.0 or higher

### **POST-9/11 GI BILL**

The Post-9/11 GI Bill provides financial support for education and housing to individuals with at least 90 days of aggregate service on or after September 11, 2001, or individuals discharged with a service-connected disability after 30 days. You must have received an honorable discharge to be eligible for the Post-9/11 GI Bill.

This bill became effective on August 1, 2009. The amount of support that an individual may qualify for depends on where he or she lives and what type of degree is being pursued.

Approved training includes graduate and undergraduate degrees, and vocational/technical training. All training programs must be offered by an institution of higher learning and approved for GI benefits. Tutorial assistance, and licensing and certification test reimbursement are also approved under this bill.

The Post-9/11 GI Bill expands the number of

people who qualify for education support from the Department of Veterans Affairs. To learn more about this bill, visit [www.gibill.va.gov](http://www.gibill.va.gov).

## **PRIVATE ALTERNATIVE LOANS**

Private loans originate outside of the College and require a separate application. Private loans are offered through commercial lenders and are approved according to the family's ability to repay. Private loans are available to students and parents. Amounts, interest rates, repayment terms and application procedures vary according to the individual loan program. Before considering a private loan, students should be certain they understand their rights and responsibilities under the loan program, including how interest is assessed, when repayment begins and what repayment options are available. The following website can be used to compare private loan interest rates and options: [www.privatestudentloans.com](http://www.privatestudentloans.com)

## **VAUGHN AWARDS FOR NEW STUDENTS**

### **RESIDENTIAL LEADERSHIP SCHOLARSHIPS**

These scholarships are awarded to incoming freshmen upon acceptance to a bachelor of science degree program at Vaughn. To be considered, applicants must attain a cumulative grade point average of at least a 3.0 (a "B") and a combined SAT 1 score of 1,000. Students who meet these minimum criteria will be considered for awards based on their grades and exam scores by Vaughn's scholarship committee. Residential Leadership Scholarship recipients' academic progress is reviewed at the end of each academic year to determine renewal. Scholarship recipients must maintain a GPA of no less than 3.0 to continue to participate in the scholarship program at Vaughn. Students with extraordinary circumstances will be reviewed by the director of admissions.

### **FOUNDERS' SCHOLARSHIPS**

These scholarships are awarded to students upon acceptance to a bachelor of science degree program at Vaughn. To be considered, applicants must attain a cumulative high school average of at least a 3.0 (a "B") and combined SAT 1 score of at least 1,000. Students who meet these minimum criteria will be considered for awards, based on their grades and exam scores, by Vaughn College's scholarship committee. Founders' scholarships are awarded in recognition of the contributions to the success of the College.

Students with extraordinary circumstances will be reviewed by the director of admissions.

- The Charles S. (Casey) Jones Scholarship is awarded in memory of one of our founders and the first president of the basic program from which the current curricula have evolved.
- The Lee D. Warrender Scholarship is awarded in the name of one of our founders and an engineer who developed the basic program from which current curricula have evolved.
- The B. Hunt Smith Scholarship is awarded to honor the pioneer aviation executive who provided extensive technical assistance in designing the College's laboratories.
- The Walter A. Neff Scholarship is awarded in honor of the airline executive and charter trustee who was responsible for laboratory equipment acquisition.
- The Elmer A. Sperry Scholarship is awarded in the name of the charter trustee and inventor who contributed substantially to aerial navigation.

### **GOLD WINGS SCHOLARSHIP**

This scholarship covers the complete annual tuition and fees for four consecutive years of full-time study, and is awarded annually to a student graduating from Aviation High School. A high school guidance counselor, teacher or principal must nominate students. Nominees must meet the following minimum criteria:

- Demonstrate a record of strong academic achievement
- Attain a cumulative grade point average of at least a 3.0 (a "B")
- Score at least a cumulative 1,000 on the SAT 1 exam, and at least 450 on the math section
- Enroll in a bachelor's degree program

Recipients must file the Free Application for Federal Student Aid (FAFSA) each year and maintain a 3.0 GPA. Recipients are selected annually in the fall semester, and the final decision is made by Aviation High School's principal. If the recipient is eligible for any federal or state financial aid grants (excluding loans), or receives any additional scholarship funds from agencies other than Vaughn College, those funds will be applied to the Gold Wings award. Books, tools and



miscellaneous expenses are the responsibility of the recipient.

### **TRANSFER STUDENT SCHOLARSHIP**

Students who transfer to the College having completed 24 or more credits at an accredited college or university, and who have achieved a cumulative grade point average of at least 3.0 (including all courses at every institution attended), may be awarded scholarships to transfer. The awards may be renewable for up to three years of consecutive study, providing the recipient maintains a 3.0 cumulative GPA. The number of years the scholarship will be provided will depend on the number of credits accepted by the College at the time of transfer. Students with extraordinary circumstances will be reviewed by the director of admissions.

### **KIWANIS SCHOLARSHIP**

The Kiwanis Club of LaGuardia Airport has established an annual scholarship for graduates of Aviation High School to help defray the daily expenses associated with higher education. Candidates selected for this scholarship are those who demonstrate an interest in and a commitment to aviation. Funding for the first two years is provided solely by Kiwanis.

For those students enrolled in a baccalaureate program, Vaughn College will provide matching funds for the remaining two years. Recipients must maintain full-time matriculation and sustain a minimum grade point average of 2.0.

### **ANNE AND VERNON CRUDGE SCHOLARSHIP**

This scholarship is given to a worthy incoming student enrolling in any of Vaughn's bachelor of science degree programs. Vaughn will solicit students who are in the top 20 percent of the incoming class and demonstrate financial need. The application process will begin on or about February 15 of each year with the publicizing of the Crudge Scholarship to all eligible incoming freshmen. Students will be asked to submit a written recommendation from a teacher or guidance counselor. One student will be awarded the scholarship for the following academic year. This annual award of \$1,000 is made each fall.

### **FREDERICK R. AND MIMI EINSIDLER SCHOLARSHIP**

This award will be given to an incoming student whose high school grade point average places him or her in the top 10 percent of the freshman class. The application process will begin on or about February 15 of each year. Students will submit a written

recommendation from a teacher or guidance counselor. One student will be awarded the scholarship for the following academic year. (The presentation of the award will take place at Vaughn's fall academic honors ceremony.) The minimum award for 2013-2014 will be \$1,000.

### **ROBERT AND IRENE ZINCONI SCHOLARSHIP**

This award will be given to an entering freshman who is pursuing an associate or bachelor's degree program; has achieved a high school grade point average not less than 85 percent; has performed service to the high school community and demonstrates financial need. The number and dollar amount of this award is determined by the level and availability of funding.

### **JOHN F. KENNEDY INTERNATIONAL AIRPORT CHAMBER OF COMMERCE SCHOLARSHIP**

This endowed scholarship fund with the College allows the Chamber of Commerce to make a significant long-term scholarship award to one student who meets its criteria. In turn, Vaughn matches this scholarship amount by awarding four additional scholarships.

Vaughn annually awards these scholarships to students who meet the Chamber's criteria:

- Enrolled in either a bachelor of science or an associate in applied science program
- A son or daughter of an aviation industry employee working on or adjacent to John F. Kennedy International Airport
- Demonstrates financial need
- Achieved a high school grade point average of not less than 75 percent
- Performed service to the high school or community
- Recommended by a high school teacher

### **AIR CARGO ASSOCIATION SCHOLARSHIP**

This award will be given to an entering freshman who is pursuing an associate or bachelor's degree program; has achieved a high school grade point average of not less than 85 percent; has performed service to the high school community and demonstrates financial need.

### **WALTER HARTUNG MEMORIAL SCHOLARSHIP**

Vaughn College is pleased to work in partnership with The Resource Foundation to award annual tuition scholarships to promising students enrolled in any of Vaughn's bachelor of science degree



programs.

Incoming Vaughn students will need to meet the following eligibility criteria to be considered for the Walter Hartung Memorial Scholarship:

- Enrolled in a bachelor of science degree program
- Achieved a high school grade point average of not less than 80 percent
- Recommended by one of his or her high school teachers
- Demonstrates financial need

Enrolled Vaughn students need to meet the following criteria to be considered for the Walter Hartung Memorial Scholarship:

- Enrolled in a bachelor of science degree program
- Achieved a college grade point average of not less than 3.0
- Recommended by one of his or her college professors
- Demonstrates financial need

The application process will begin on or about February 15 of each year with the publicizing of the Walter Hartung Memorial Scholarship to all eligible students. Incoming freshmen will be asked to write a 250-word essay on their decision to enroll at Vaughn and their career aspirations. Sophomores, juniors and seniors will be asked to submit a 250-word essay on their experience at Vaughn and their career aspirations.

### **RENO ANGELETTI ENDOWED SCHOLARSHIP**

This scholarship is awarded each fall to an enrolled student in the associate in occupational studies degree in aviation maintenance who demonstrates financial need. Students will be asked to submit two personal references that speak to the student's interest and desire to complete the program.

### **IVO FIORAVANTI MEMORIAL BOOK FUND**

The award is given each fall to enrolled students in the bachelor of science degree in mechanical engineering technology who demonstrates financial need and have a minimum 2.75 grade point average. Students will be asked post-award to submit an essay of not more than 250 words discussing their progress within the program and their future goals. This fund provides four (4) \$250 book awards each academic year.

### **INTERNATIONAL AVIATION WOMENS ASSOCIATION (IAWA) SCHOLARSHIP AWARD**

IAWA awards one \$5,000 scholarship to a female student of Vaughn College who maintains a minimum 3.0 grade point average who also demonstrates financial need.

### **VAUGHN AWARDS FOR CONTINUING STUDENTS**

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#### **ACADEMIC EXCELLENCE SCHOLARSHIPS**

Academic excellence scholarships are awarded each year to continuing students who demonstrate outstanding academic achievement.

To be eligible, students must meet the following criteria:

1. Satisfactory completion of at least two semesters (29 credits/units or more) as a matriculated student.
2. Maintained the required cumulative GPA (see below)
3. Be registered full time

Award, range and required cumulative GPA:

President's Honors: 3.85 GPA or above,  
\$1,000 per academic year

Dean's Honors: 3.68 to 3.84 GPA,  
\$750 per academic year

Faculty Honors: 3.50 to 3.67 GPA,  
\$500 per academic year

**Note:** Vaughn College scholarships and grants are not awarded during the summer semesters.

#### **ASCH-ROOT ENGINES OF INVENTION SCHOLARSHIP**

This scholarship seeks to inspire faculty and students to work together on a research project that encourages creativity in the fields of science and math, as well as the desire to improve problem-solving.

Vaughn College will award the \$1,500 Asch-Root Engines of Invention Scholarship to a student enrolled in a bachelor of science degree in engineering or engineering technology with at least 90 completed credits and a minimum grade point average of 3.0.

### **MICHAEL AND JOSEPH CANNON SCHOLARSHIP**

This scholarship is awarded to a student enrolled in a bachelor of science degree program who is among the top 10 percent of the incoming class and demonstrates financial need.

### **KENNETH E. SENIOR SCHOLARSHIP**

This scholarship is offered in conjunction with the Kenneth E. Senior Aerospace Foundation to two students enrolled in any Vaughn bachelor of science program. The annual scholarship of \$10,000 each is awarded to students in the top 20 percent of the incoming class who also demonstrate financial need. Applicants are required to submit a written recommendation from a teacher or guidance counselor, and a committee composed of at least one member of the admissions department, a member of the Kenneth E. Senior Aerospace Scholarship Foundation, and the executive director of corporate and foundation relations will make the selections. Presentation of the award will take place at Vaughn's fall honors ceremony.

### **OTHER SCHOLARSHIPS**

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#### **RESERVE OFFICERS' TRAINING CORPS (ROTC) SCHOLARSHIPS**

All qualified students enrolled in either the Army or Air Force ROTC programs can apply for an ROTC college scholarship.

This scholarship will cover full tuition, laboratory expenses, incidental fees and an allowance for books at the College.

In addition, cadets with these scholarships will receive a modest nontaxable stipend each month. The scholarships are awarded on a competitive basis to freshmen, sophomores or juniors.

#### **SEARCHING THE WEB**

Students may use the computer labs to search the Internet for additional scholarships. One useful resource is: <http://www.finaid.org>.

Please check with the financial aid office for additional resources and information.

## COSTS AND FINANCIAL POLICIES

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Students are billed each semester for tuition, fees and other expenses such as housing, meal plans and book vouchers. It is Vaughn's policy that students must clear their tuition account prior to registering for subsequent semesters.

Financial arrangements constitute setting up a deferred payment plan with consistent payments, which are defined and agreed to by the office of student accounts, and the student filing for financial aid, if applicable.

Under no circumstances will students be permitted to register if they have tuition due for more than one semester. Appeals of this policy may be made to the vice president of enrollment services for a final determination.

A fee of \$25 will be charged for all checks that are not honored. Tuition and fees are subject to change at any time at the discretion of the College.

### ACCEPTANCE DEPOSIT

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A nonrefundable acceptance deposit of \$100 (\$400 U.S. for international students) is required within one month after the applicant is notified of acceptance. The acceptance deposit reserves the student's place in class and is credited in full toward tuition, provided that the applicant begins classes within one year of the originally scheduled enrollment date. Requests for waiver of the one-year limit should be submitted to the director of admissions.

### TUITION

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Students are charged varying rates of tuition based on the program in which they enroll, when they enrolled and the number of credits being pursued. A flat-fee tuition is charged to academic students who are taking 12 to 18 credits. Students who register for more than 18 credits will incur overload charges. A flat-fee tuition is charged to aviation training students who are taking 12 to 21 units. A per credit/unit charge is applied to students taking 11 or less credits. Exact charges for 2015-2016 are listed on page 26.

### ROOM AND BOARD

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For the 2014-2015 academic year, per-semester cost for a room in Vaughn's residence hall is \$5,712.50 for a single in a two-person suite; \$4,982.50 for a double in a four-person suite; \$4,380 for a room in a triple suite; or \$4,225 for a room in a quadruple suite. A \$250 housing deposit (\$125 per semester) is

required. Most residents live in either a two-person or four-person suite with a semiprivate bath. The residence hall has laundry, study and kitchen facilities in a common area within the building. Residence hall rooms are supplied with a bed, dresser, closet, desk, chair and wastebasket for each student. Each room is also equipped with a phone, cable TV hookup and computer port.

Meal plan options are: \$1,650, \$1,200, \$880 or \$595 per semester. Freshmen must choose either the \$1,650 or the \$1,200-per-semester meal plan.

### HOUSING CANCELLATIONS AND REFUNDS

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Students who are assigned housing and who fail to move in will forfeit their deposit, and remain responsible for any housing charges due. Students who move into the residence and who then leave or cancel their assignment at any point during the academic term will forfeit all deposits, and be charged for the full-semester housing costs.

Students who cancel housing by notifying the office of student affairs in writing prior to July 1 for the fall semester, or by January 1 for the spring semester, will be refunded the \$250 housing deposit. After these dates, the deposit will not be refunded.

At the end of the student's residence, the room will be inspected to determine the amount, if any, of the deposit that will be refunded to the student upon moving out. In the event damages to the room and/or common area exceed the \$250 deposit, the student will be responsible for paying the additional damage amount. Failure to receive a specific type of housing is not a justifiable reason to be refunded the \$250 deposit or to decline or move out of the residence.

If a student is removed from the residence hall for judicial reasons, he or she forfeits the right to a refund of the housing charges and housing deposit, and remains liable for the full amount.

Residents who were enrolled for the fall semester and have been released from their agreement for the spring semester due to withdrawal from the College must vacate their rooms, check out with a staff member and return room keys within 24 hours after their last final exam for the fall semester; their liability for further charges will be assessed at that time.

## FEES

### APPLICATION FEE

A nonrefundable application fee of \$40 is required with the application for admission. A reentry fee of \$40 is due by all students reentering the College after withdrawal (more than one semester of absence) and is nonrefundable.

### MAINTENANCE OF MATRICULATION FEE

Students who plan to take a leave of absence for a semester are encouraged to maintain matriculation by paying a \$50 maintenance of matriculation fee. Maintenance of matriculation forms are sent to students following the add/drop period. Maintaining matriculation affords students the opportunity to stay within the curriculum and requirements of their current program. Students may not maintain matriculation for more than two consecutive semesters or in programs that have been canceled. Students must have a zero balance to maintain matriculation.

### IMMUNIZATION FEE

Students who receive immunization through the College will be charged a \$10 administration fee per inoculation. Contact the director of student affairs at ext. 170 for more information.

### CERTIFICATION FEES

AA02 Certificate Preparation or Seminar fee —\$315  
AA02 Certificate Preparation—Airframe \$315  
AA02 Certificate Preparation—Compliance fee \$100  
PP02 Certificate Preparation—Powerplant \$315  
PP02 Certificate Preparation—Compliance fee \$50  
AVT250 FCC License Review—\$925  
AVT250 FCC License Review—\$60  
These fees cover the costs of written, oral and practical examination or seminar fees.

### LABORATORY FEE

A laboratory fee of \$50 is required for all subjects that include laboratory activity. This fee, which aids in support of the various laboratories, is payable with the tuition for each semester, and is not refundable after the first day of the semester.

### SIMULATION FEE

The following management courses include a computer simulation program and exam fee of \$85: MGT209L; MGT480; MGT509L.

The following are zero-credit courses and are covered by the semester fee charge:

**CD101**— Career Development

**DP407**— Degree Project, maintenance programs only

### LATE-REGISTRATION FEE

A non-refundable \$50 late registration fee will be applied to students who register for classes on or after the first day of the semester.

### SIMULATOR FEES

FLT221	\$1,000	Covers 10 hours of individual simulator use and instruction at \$100 per hour.
FLT360	\$500	Covers five hours of individual simulator use and instruction at \$100 per hour.
FLT110 and FLT120	\$765	Covers the lab section of the FAA knowledge exam preparation, which costs \$100; an FAA knowledge exam fee of \$115; and an FAA compliance fee of \$50; as well as five hours of individual simulator use and instruction at \$100 per hour.
FLT330, FLT360, FLT471 and FLT472	TBD	These courses require FAA knowledge exams and will incur FAA knowledge exam fees where appropriate.

### BY-PASS EXAMINATION FEE

Students seeking to by-pass any subject by examination are charged a \$75 fee for each credit.

### GRADUATION FEE

A non-refundable graduation fee of \$80 is required when the graduation declaration form is submitted.

### TEXTS, EQUIPMENT AND SUPPLIES

Students are responsible for obtaining necessary books, tools and supplies for their courses. Textbook requirements vary according to the course of study. Students should anticipate a cost of about \$600 per semester for books, tools and supplies.

### BILLING

Payment of tuition and fees is due by the first day of classes each semester. At that time, students must make payment, in full, using one or a combination of these methods: check, money order, credit card, federal or state financial aid, Vaughn College scholarship or grant, private grant, or third-party payment.

### SEMESTER FEE

A nonrefundable semester fee of \$400 is required for each enrolled student. This fee is part of the general fund, and is used to offset the cost of student registration, computer usage, student club activities, intramurals, identification cards and other student services.

## INTERNATIONAL STUDENT BILLING

First-year international students must pay tuition and fees in full prior to the first day of classes. In subsequent years, international students are permitted to participate in the College's deferred payment plan. Students who fail to regularly meet their financial commitment after enrolling in a payment plan will be immediately removed from the program.

### SUMMARY OF 2015–2016 FEE SCHEDULE

Activity	Fee
Academic-audit	\$730 per course
ATI-Audit	\$490 per course
Application	\$40 per application
Bypass exam	\$75 per credit
FCC License Review-AVT250	\$925
Flight Dispatch Certificate AD10 - Non degree	\$4000
Certificate (AA02–Airframe)	\$315 per certificate - Effective July 1, 2014
Certificate (AA02–General)	\$315 per certificate - Effective July 1, 2014
Certificate (PP02 Powerplant)	\$315 per certificate - Effective July 1, 2014
FAA Compliance Fee	\$50 per exam
FAA Written Exam Fee - FLT/110, 120, 330	\$115 per exam -
FAA Exam Preparation - FLT/110, 120, 330	\$100 per exam
ATC Simulation Fee ATC200L/ATC240L	\$750 per lab
Graduation Fee	\$80 per degree
Housing Deposit	\$125 per semester
Immunization	\$10 per shot
ID Fee	\$10 per card
Laboratory	\$50 per lab
Late Payment	\$50 per incident
Late Registration	\$50 per incident
Returned Check Fee	\$25 per incident
Matriculation maintenance	\$50 per semester (maximum, two semesters)
Program Adjustment (add, drop, change of curriculum, etc.)	\$10 per transaction
Change of Curriculum	\$10 per transaction
Reentry	\$40 per application
Semester Fee (LaGuardia)	\$400 per semester
Simulator Fee	\$100 (per hour-simulator usage)
Management Simulation Fee MGT480	\$85
Management Comprehensive Exam Fee for APM485	\$50
Transcript	\$8 per transcript
Tuition Deposit	\$100 first semester
International Tuition Deposit	\$400 first semester
Overload-Academic-Over 18 credits	\$655 per credit
Distance Learning Undergraduate	\$657 per credit
Distance Learning Graduate	\$864 per credit
FCC License Exam Fee-AVT250	*Will be determined by the FCC Testing Center
FAA Written Exam Fee-FLT/360, 470, 471	*Will be determined by the FCC Testing Center

**Locker Rental**

\$20 for two semesters (fall and spring)  
\$15 for one semester (fall and spring)  
\$10 for both summer sessions

**Tuition**

Full-time Academic Admitted Prior to 09/05	\$9,125 (12-18 credits) flat rate per semester
Part-time Academic Admitted Prior to 09/05	\$655 per credit
Full-time Academic Admitted After 08/05	\$10,940 (12-18 credits) flat rate per semester
Part-time Academic Admitted After 08/05	\$730 per credit
Full-time Aviation Training Institute (ATI) Students	\$7,850 flat rate per semester
Part-time ATI Students	\$490 per credit

**HOUSING CHARGES****Residence Hall Room Rates**

Single in a Two-Person Suite	\$6,000 per semester
Double in a Four-Person Suite	\$5,230 per semester
Triple Room Suite	\$4,600 per semester
Quadruple Room Suite	\$4,440 per semester

**Meal Plans**

Plan 1 (continuing students only)	\$880 per semester
Plan 2	\$1,200 per semester
Plan 3	\$1,650 per semester
Plan 4 (continuing students only)	\$595 per semester

**Residential Fees**

Key Replacement	\$10
Late Checkout	\$25 per hour beyond checkout date
Lockout	\$5 per incident
Lost or Broken Key	\$25 and \$50 per core change
Housing Incident-Fine	Determined at discretion of residence director
Improper Checkout	Assessed in direct correlation to extent of damages



## THIRD-PARTY BILLING

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You may seek a deferment of payment based on a third-party plan (e.g., employer reimbursement). To do so, you must submit a letter on company letterhead, signed by a benefits officer, stating the terms and conditions for reimbursement. This letter must be presented to the office of student accounts no later than the last day of late registration each semester you apply for a deferment.

## PAYMENT PLANS

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Vaughn uses Nelnet Business Solutions, a third party, to administer the student payment plans. Students who are interested should see the office of student accounts for information. Students who pay their tuition bill in full by cash, check or money order and subsequently withdraw will have their refunds calculated according to the schedule on page 29. Refund checks are mailed directly to the student's home by the office of student accounts. Students who have made a partial payment on their bills will have their tuition liability calculated according to the schedule on page 29. A reduction in tuition charges may not necessarily result in a refund and, in some instances, a tuition balance may still be due.

## REFUNDS TO STUDENTS WHO WITHDRAW

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All students who want to withdraw from courses for any reason must officially notify the College; to receive a refund or credit, they must withdraw during the official refund periods. Students officially withdraw using the add/drop or total withdrawal form, submitting the form in person at the campus' registrar's office and/or emailing a copy to Beatriz Novoa-Cruz, associate vice president of enrollment, at [beatriz.cruz@vaughn.edu](mailto:beatriz.cruz@vaughn.edu).

Regular attendance is an essential ingredient for satisfactory academic performance. All students are encouraged to attend their courses on a regular basis, and abide by the departmental and course-specific attendance requirements (as provided in course syllabi).

Non-attendance in a course, verbal communication with College offices or instructors, or stopping payment on a check or payment plan are NOT official ways to drop classes. The official withdrawal is the only form of withdrawal that

qualifies a student for a partial tuition credit and partial refundable fees.

The College's withdrawal procedure applies to all students, including those who receive student loans and financial aid. Withdrawal from college can affect eligibility for financial aid and/or loans, and some students who withdraw, as a result, are liable for amounts due and are billed by the College accordingly.

### Program Adjustments and Withdrawal

If you have preregistered and an adjustment is necessary as a result of failure to successfully complete a prerequisite course(s), you may add, drop or change a course section any time after the pre-registration period and before the first day of classes, without penalty. Other adjustments must be made during the program adjustment period, usually on or after the first day of classes, and will be assessed the appropriate fee (\$10 per add/drop). Use the add/drop form to make all program adjustments. Because program adjustments can affect your financial aid eligibility, it is important that you refer to the refund schedule in the current catalog to understand your tuition liability.

Failure to follow the proper withdrawal procedures may result in the student being financially liable for full or partial tuition and fees. For students in the Aviation Training Institute, the Federal Aviation Administration (FAA) requires full attendance in all FAA-approved subjects. Federal financial aid cannot pay student charges for a class never attended or stopped attending unless official College withdrawal procedures are followed. Students receiving a pro rata reduction of federal student aid when withdrawing before 60 percent of the semester is completed may be liable for any outstanding tuition due.

Students who do not officially withdraw from a course will receive one of the following grade codes:

NA—Registered but never attended.

WX—Withdrawal due to administrative reasons.

An appropriate Title IV refund calculation will be performed based on last day of attendance.

FX—Withdrawal due to administrative reasons. Academic penalty will be computed into the grade point average as a grade of "F." Title IV refund will be calculated if the withdrawal occurs before 60 percent of coursework is completed.

## TUITION AND HOUSING REFUND SCHEDULE

Time of Withdrawal	Fall/Spring/ATI Semester	Summer I and II
Prior to the first day of class	100 percent	100 percent
During first calendar week	90 percent	75 percent
During second calendar week	75 percent	50 percent
During third calendar week	50 percent	25 percent
During fourth calendar week	25 percent	0 percent
After fourth calendar week	0 percent	0 percent

### TITLE IV TUITION AND HOUSING REFUND

As part of the Higher Education Amendments of 1998, Congress passed new provisions governing what must happen to your federal financial assistance if you completely withdraw from school in any semester. This change of policy has been in effect at the College since the fall 2000 semester. The policy governs all federal grant and loan programs, including Federal Pell Grant and Federal SEOG, but does not affect Federal Work Study.

In general, the new law assumes that you “earn” your federal financial aid awards directly in proportion to the number of days of the term you attend. If you completely withdraw from school during a term, the school must calculate, according to a specific formula, the portion of the total scheduled financial assistance you have earned and are therefore, entitled to receive up to the time you withdrew. If you receive (or the College receives on your behalf) more assistance than you earn, the unearned excess funds must be returned to the Department of Education. If, on the other hand, you receive (or the College receives on your behalf) less assistance than the amount you have earned, you may be able to receive those additional funds.

The portion of your federal grants and loans you are entitled to receive is calculated on a percentage basis by comparing the total number of days in the semester to the number of days you completed before you withdrew. For example, if you complete 30 percent of the semester, you earn 30 percent of the assistance you were originally scheduled to receive. This means that 70 percent of your scheduled award(s) remains unearned and must be returned to the federal government.

Once you have completed more than 60 percent of the semester, you will have earned 100 percent of your assistance. Your withdrawal date will be determined by the College, as outlined in “Refunds to Students Who Withdraw,” page 28.

If funds were released to a student due to a credit balance on the student’s account prior to withdrawal, then the student may be required to repay some of the federal grants released. Details on exact amounts to be repaid will be provided by the office of student accounts after the appropriate calculations are made.

Any portion of the student’s tuition that becomes due after all Title IV funds are returned will be billed to the student’s account.

For more information on the refunds or repayments of Title IV aid, contact the office of student accounts.

Vaughn College recognizes that occasionally a student is forced to withdraw because of circumstances beyond his/her control, such as illness.

Students should be prepared to present evidence of such circumstances in support of any request for special consideration. Any adjustments to the refund policy above will be made by the vice president of enrollment services.

### FINANCIAL POLICIES

Payment of tuition and fees is due by the first day of classes each semester. Students must make payment in full, or arrangements to pay, with the office of student accounts by that time. Students who register after that date must make payment arrangements to pay at that time. Acceptable arrangements to pay include: evidence of eligibility for financial aid, alternative educational loans, Veterans Affairs benefits, employer education benefits, the College’s or another payment plan, the College’s and/or private grants and scholarships. Students who fail to regularly meet their financial commitment after joining a payment plan will be immediately removed from the program and refused participation in subsequent semesters.

Students who make acceptable financial arrangements to cover their tuition with the office of student accounts and make a good-faith effort to meet their financial obligations will be allowed to maintain their enrollment each semester without interruption. Failure to meet your financial obligation to the College may result in any or all of the following actions against you:

- Denial of final grade reports and transcript records
- Denial of permission to register for future semesters
- Denial of participation in commencement exercises (graduating students)
- Denial of receipt of diploma (graduating students)
- Deregistration for the semester
- Surrender of your account to a collection agency (affects your credit rating)

Before deregistration, students affected are notified by first-class mail and given 10 business days to take corrective action. Once deregistration takes place, a program adjustment form is sent to the student by first-class mail, and the student is dropped from the class roster. This action cannot be reversed; the student is liable for tuition in accordance with the College's refund schedule. A grade of WX is issued.

It is important to note that this action may also result in suspension of TAP and Title IV financial aid for students who qualify. A waiver must be obtained from the office of financial aid in order to have aid reinstated for future semesters.

## **APPEALS OF FINANCIAL DECISIONS**

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Students can consult with the vice president for enrollment services regarding the appropriate procedure to appeal a financial determination.

## **FINANCIAL ARREARS POLICY**

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Vaughn reserves the right to withhold registration material and all information regarding the record of any student who is in arrears in the payment of tuition, fees, loans or other charges (including charges for activities or services) as long as arrears remain.

## ACADEMIC AFFAIRS

### RECOGNITIONS

Vaughn College is an independent, not-for-profit corporation, chartered by the Board of Regents of the University of the State of New York as a senior college for the purpose of conducting programs of instruction leading to the master's, bachelor's and associate degrees appropriate to the curriculum.

Vaughn College curricula are registered by the New York State Education Department under the Regulations of the Commissioner of Education.

The following is a list of degree programs offered at the College with their corresponding Higher Education General Information Survey (HEGIS) code numbers. Enrollment in other than registered or otherwise approved programs may jeopardize a student's eligibility for certain student aid awards.

<b>Master of Science Degree Curricula –</b>	
• Airport Management	0510
<b>Bachelor of Science Degree Curricula – Engineering</b>	
• Mechatronic Engineering	0910
<b>Aeronautical Technology</b>	
• Aircraft Operations	0925
• Aviation Maintenance	0925
<b>Mechanical Engineering Technology</b>	
• Aeronautical	0925
• Computer-aided Design	0925
<b>Electronic Engineering Technology</b>	
• Avionics	0925
• General	0925
<b>Electronic Technology</b>	
• Optical Communications	0925
<b>Management</b>	
• General Management	0506
• Airline Management	0506
• Airport Management	0506
• Aviation Maintenance Management	0506

### Associate in Applied Science Degree Curricula – Aeronautical Technology

• Aircraft Operations	5302
• Aviation Maintenance	5302

### Associate in Applied Science Degree Curricula – Animation and Digital Technologies

• Animation and Digital Technologies	5303
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### Associate in Applied Science Degree Curricula – Aviation Management

• Airport Management	5099
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### Associate in Applied Science Degree Curricula – Electronic Engineering Technology

• Avionics	5302
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### Associate in Occupational Studies Degree Curricula

• Airframe and Powerplant	5302
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### Airframe and Powerplant Certificate Program

5302

### ACCREDITATION

Vaughn College of Aeronautics and Technology is accredited by the Middle States Commission on Higher Education, 3624 Market Street, Philadelphia, Pa. 19104 (telephone: 215.662.5606). The Commission on Higher Education is an institutional accrediting agency recognized by the US Secretary of Education and the Commission on Higher Education Accreditation.

The associate in applied science (AAS) in electronic engineering technology, the associate in applied science (AAS) degree in aeronautical engineering technology and the bachelor of science (BS) degree in electronic engineering technology, as well as the bachelor of science (BS) degree in mechanical engineering technology, are accredited by the Technology Accreditation Commission of the Accrediting Board of Engineering and Technology, [www.abet.org](http://www.abet.org). This board is a specialized accrediting agency recognized by the US Secretary of Education and by the Commission on Higher Education Accreditation.

Vaughn College also holds accreditation for its associate of applied science and bachelor of science management degree programs through the International Assembly for Collegiate Business Education (IACBE).

### 31 Associate in Applied Science Degree Curricula – Aeronautical Engineering Technology

• Aeronautical Engineering Technology	5302
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## APPROVALS

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1. This institution is authorized under federal law to enroll nonimmigrant students.
2. The New York State Education Department has approved Vaughn for the training of veterans.
3. The Federal Aviation Administration (FAA), in partnership with Vaughn, has chosen Vaughn as one of 36 institutions nationwide to participate in the Air Traffic-Collegiate Training Initiative (AT-CTI) program.

## AFFILIATIONS

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Vaughn College is associated with distinguished organizations that provide valuable relationships important to the student's educational program, including:

- American Institute of Aeronautics and Astronautics
- American Society for Engineering Education
- Aviation Technical Education Council
- Commission on Independent Colleges and Universities
- Council for Engineering Technology in New York State
- Council on Aviation Accreditation
- Flight Safety Foundation
- Hispanic Association for Colleges and Universities
- Institute of Electrical and Electronics Engineers
- International Council for Aerospace Training
- International Federation of Airworthiness
- National Aeronautic Association
- National Safety Council
- New York Aviation Management Association
- Professional Aviation Maintenance Association
- Society of Automotive Engineers
- University Aviation Association
- Women in Aviation International

## ACADEMIC DEFINITIONS

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The following are academic definitions used by Vaughn:

- An associate of applied science or a bachelor of science degree refers to the degree program that will be awarded upon successful completion of all requirements relating to the degree program.
- Curriculum refers to the specific courses of study that need to be completed in order to be awarded a degree.

## FAA CERTIFICATION

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Certification from the Federal Aviation Administration (FAA) is an important objective of many Aviation Training Institute students, since this rating is a primary qualification for employment in the field of transportation and aviation maintenance.

The FAA certification system is used to assure airworthiness of an airplane throughout its service life. The engineering design of the vehicle is regulated through the Airworthiness Certificate, which determines the design and construction of all commercial aircraft. The standards established for airworthiness are the basis for engineering technology subject matter. This certificate is one of the objectives of all maintenance-based bachelor and associate degree programs.

An FAA certificate is a valuable document. Graduates of all maintenance-based programs generally find that many areas of employment require the airframe and powerplant certificate.

Pilots and flight engineers also are certified by the FAA. Graduates of Vaughn may combine their technical education with flight training and qualify for interesting and well-paying positions as flight crew members.

## RELIGIOUS HOLIDAYS

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Vaughn College, in recognition of the various religious faiths represented on campus, provides that a student absent from class because of his or her religious beliefs shall not be penalized for any class, examination or assignment deadline missed on that day(s). A student shall be permitted to make up any exam or classwork or submit an assignment after an absence due to religious observance, and no prejudice or adverse effect shall result to any student because of such religious observance. A student who anticipates being absent for religious observance should notify the appropriate faculty member in advance.

## ACADEMIC ADVISING

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From registration to graduation, the academic progress of students is of primary concern to every member of Vaughn College's faculty and staff. Students can seek assistance in planning their course schedules and programs.

Changes in schedules or programs require further consultation with the adviser and the department chair.

Faculty members are the first and most



important advisers in academic matters and should be consulted frequently, both in and out of the classroom. Consultation hours are scheduled by faculty and professional advisers.

Each student is personally responsible for consulting with his or her advisor at least twice each semester. Department chairs and officers of the College can be consulted should the student feel his or her assistance would be beneficial.

The vice president of academic support services and the services of the Student Success Center are also available to assist students in obtaining registration materials and providing guidance in completing the registration process.

Students who are on academic probation are required to use the services of the Teaching and Learning Center to incorporate academic support into their course schedule as part of a study plan.

### **CREDIT FOR PRE-CALCULUS MAT 115**

Often students come to Vaughn having already taken some advanced courses in mathematics. The pre-calculus requirement at Vaughn will be waived for students who have taken Calculus I or a higher-level course at an accredited institution and have earned a grade of C or better. Students who have studied advanced mathematics overseas, where evaluation of transfer credit is problematic, may be permitted to take a bypass exam for pre-calculus. Approval to take a bypass exam for pre-calculus is subject to the approval of the chair of the arts and sciences department.

### **TEACHING AND LEARNING CENTER (TLC)**

The office of academic support services has a number of support units available to students. These units consist of the Teaching and Learning Center, the Freshman Year Workshop (FYW), Writing Center and Language Lab, the Higher Education Opportunity Program (HEOP), the assessment center, as well as the Student Success Center (SSC), the Upward Bound Program (for high school students) and Aviation Outreach (for middle school, high school and college students); all are housed in the TLC.

#### ***Student Success Center (SSC)***

The Student Success Center (SSC) is an integral part of the academic support services at Vaughn College and is a center committed to fostering a SMART—Standardized Method of Advising, Retaining and Training—driven environment that enables our student body to flourish academically, personally and professionally. The SSC is designed to provide students with practical solutions, from the

point of admission to graduation, in achieving academic success.

#### ***Academic Resource Center (ARC)***

Pursuing an education requires time and commitment, and there are many occasions when extra academic help and support are needed. The ARC offers a variety of services, including peer tutoring, computer tutorials, audio/video aides, reference textbooks, language lab, remediation library and a quiet study area. These services help students improve academic performance and supplement their education. All Vaughn College students are encouraged to take advantage of the support services available at the ARC.

#### ***Assessment Center***

The Assessment Center, as part of academic support services, in cooperation with the admissions office, handles the testing and placement of all students. Appointments for taking the Accuplacer test for English and math course placements are made through academic support services.

#### ***Peer Tutorial Program***

Students who need tutoring in various subjects have the option of turning to their peers for extra help. Peer tutors work with their fellow students on a one-on-one basis at a mutually convenient time and place. Periodic meetings are held between the student and the coordinator of the ARC to track the student's progress, and the overall effectiveness of the tutorial program.

#### ***Writing Center***

Assistance and technical support for writing is available at the Writing Center. The Center provides students with writing counseling, electronic resources and workshops geared toward writing and writing mentoring. Master tutors and adjunct professors assist students at all levels of the writing process. The center will serve as an asset to all classes and help students to prepare for their future careers.

#### ***Computer-aided Instruction***

Computer-aided instruction offers students a self-help program using computers. Software packages include topics such as computer-aided drafting, computer-aided developmental mathematics, English and English as a Second Language. Each package contains programs at various levels of difficulty. Computer-aided instruction enables students to expand their knowledge and understanding of a particular subject or simply to get help with course studies and assignments.

### ***Audiovisual Library***

Instructional tapes covering mathematics, science, English, and a variety of aviation and aerospace-related subjects are available for individual and small-group viewing in the ARC screening section. They range from general aeronautical information to more specific, detailed topics. The viewing of these tapes may be required for some classes.

### ***Language Lab***

The lab offers students the opportunity to practice the foreign language being studied. The lab provides students with supplemental materials such as audio-visual programs, workshops, interactive computer language applications and assistance with English as a Second Language (ESL). All students enrolled in a foreign-language class are required to visit the lab to reinforce classroom lessons.

### ***Arthur O. Eve Higher Education Opportunity Program***

Vaughn College participates in the New York State Education Department's Arthur O. Eve Higher Education Opportunity Program (HEOP). This program has been designed for educationally and economically disadvantaged New York state residents who otherwise might not be able to attend college. HEOP provides several academic and financial support services to assist students with the competitive requirements of studies at Vaughn College. These services include the summer immersion program, tutorial services, counseling services and financial assistance. To be considered for HEOP program, follow the instruction described in "Admissions Procedures" on page 5.

## **WORKSHOPS**

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Members of the faculty and staff conduct workshops throughout the academic year geared toward student and college life. These lectures are not a part of the general curriculum. They cover topics such as studying effectively, time management and aviation-related topics.

### ***Let's Talk Seminars***

Let's Talk seminars are workshops and forums designed to allow students to explore critical, cultural, social and educational topics throughout their college life. Topics covered include, but are not limited to, time management, goal setting and stress management, importance of networking, diversity awareness, and mental and physical health.

### ***Aviation Training Institute Workshops***

ATI workshops provide students with an understanding of the operation principles of complex systems on board an aircraft. Topics include weighing procedures and aviation-related physics. Emphasis is placed on operations, schematics and troubleshooting. Students will enhance the necessary mathematical skills required to compute the electrical values of a circuit. They will supplement classroom work through a higher level of analysis by exploring actual laboratory components.

### ***FLT110 General Aeronautics Workshops***

FLT110 workshops focus on the environmental effects on flight, basic navigation, aeronautical charts, weight and balance, meteorology and air traffic control principles. Students' knowledge will be enhanced to successfully maneuver general aviation airplanes. Students will be prepared for the FAA Private Pilot written exam.

### ***FLT120 Intermediate Aeronautics Workshops***

FLT120 workshops focus on instrument flying and instrument flight rules (IFR). Discussions are held on attitude instrument flying, Very High OmniDirectional Range (VOR) navigation, instrument approach, instrument departure and holding patterns. Students will be able to fly on instruments during poor weather conditions and will be prepared to pass the FAA instrument rating written exam.

### ***Writing Workshops***

Writing workshops focus on an array of topics covered in English classes. Topics range from the fundamentals of the English language, such as grammar, to genres of literature, such as poetry. Professional writers are invited to hold workshops to showcase the importance of writing in particular career fields. Faculty members are also encouraged to assess students' needs and request workshops that would be beneficial.

## **SUPPLEMENTAL INSTRUCTION**

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The supplemental instruction program is an interactive tutorial program, designed to offer students the opportunity of real-time assistance. A supplemental instructor is a student who has previously passed the course with a grade of B+ or better who sits in the course again, providing guidance during class time. This supplemental instructor also provides additional time outside of class for practice and review. The program creates a collaborative learning experience among peers and

further enriches classroom learning. A log is kept for each student to further monitor his or her progress throughout the course. All instructors are also a part of the Teaching and Learning Center, which further provides tutoring assistance outside the classroom.

## **FIRST YEAR INITIATIVES (FYI)**

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The First Year Initiatives program is designed to provide a quality learning environment, while empowering students to be successful academically and socially as they make the transition into college. As students become knowledgeable about the history of the College and its significance in the aviation world, they are also made aware of the regulations and conduct codes of the College. Students understand their college responsibility as well as develop an appreciation for the value of a higher education. Through readings, discussions, written assignments, oral presentations and other activities, students are encouraged to develop their skills, and explore issues critical to their success and graduation from Vaughn College. Students gain knowledge about the requirements for their academic programs. Students are also encouraged to learn the requirements for their academic programs and take responsibility for ensuring a smooth matriculation. In addition, FYI promotes a safe campus by increasing students' awareness on sexual harassment and criminal offenses. Through it all, students will have the resources that will assist them in their first year.

### ***Peer Leaders***

Peer leaders are an invaluable part of the First Year Initiatives. Successful upper-class students assist in the FYI class and the Let's Talk seminars. They serve as a bridge between instructors and students, as mentors, role models, support and resource persons for students. Students can go to peer leaders with questions, get help with studying and any college-related issue.

### ***Quick Start (QS) Summer Immersion Program***

The Quick Start (QS) program at Vaughn College is a precollege residential program offered during the summer. It introduces qualified prefreshmen to fundamental math, science, English, technical and aviation-related concepts. Upon successful completion, students can earn up to nine college credits to prepare them for college-level courses, enhance their pathway to degree completion and satisfy curriculum requirements.

### ***Upward Bound Program***

The Federal TRIO Program, Upward Bound (UB), is a pre-college program designed to help students overcome social and cultural barriers to higher education. The program provides help and educational opportunities to first-generation and low-income students who have an academic need and/or who are students at risk of failure. UB consists of comprehensive and intensive academic support services year-round. Services include tutoring, Regents and SAT prep. The goal of Upward Bound is to prepare high school students for college and to help them gain important skills necessary for success beyond high school, while gaining access to postsecondary education. In addition to helping these students successfully complete high school, Upward Bound staff offer personal, career and college counseling to create a smoother transition into college.

### ***Science and Technology Entry Program (STEP)***

The Science and Technology Entry Program (STEP) is a New York state-funded program dedicated to historically underrepresented and economically disadvantaged students. STEP aims to increase the number of prepared students who enter college and improve participation and performance, specifically in mathematics, science, technology, health-related fields and licensed professions. The program provides participants with tutoring, Regents and SAT prep during the academic year. STEP provides a six-week summer program that introduces eligible high school and middle school students to the worlds of aviation and various technologies through seminars and hands-on laboratory experiences.

## ATTENDANCE POLICY

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All students are encouraged to attend their courses on a regular basis, and abide by the departmental and course-specific attendance requirements (as provided in course syllabi). Additionally, students are required to attend registered courses at least once during the first three weeks of each semester. Failing to meet this minimum requirement may affect registration in the course(s) for that semester. If a student does not meet the minimum attendance requirement, he/she will be informed by the registrar's office regarding his/her attendance status and appropriately advised thereafter by the student academic support services department. Courses given by the Aviation Training Institute (ATI) and certain flight courses (FLT120 and FLT330) are certified by the Federal Aviation Administration as vital to continued aviation safety through flight education. These courses must achieve perfect attendance records, with documented evidence of the make-up of each missed class.

## ACADEMIC STANDARDS, CATEGORIES AND PROCEDURES

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- **Good academic standing:** Students earning a 2.0 grade point average (GPA) or better and making proper progress toward their degree are considered in good academic standing.
- **Warning:** Any student who earns a GPA of less than 2.0 or does not complete 60 percent or more of attempted credits in any one semester will be notified of his/her academic standing. He/she will be required to have his/her registration form reviewed and signed by the associate vice president of academic support services or a representative.
- **Probation:** Any student who earns a GPA of less than 2.0 or does not complete 60 percent or more of attempted credits in two consecutive semesters will be notified of his/her academic standing. He/she will be required to have his/her registration form reviewed and signed by the associate vice president of academic support services or a representative. The student **MUST** arrange weekly meetings with an adviser to resolve any academic issues. At this point, the student will be limited to part-time study.
- **Extended Probation:** Students whose semester GPA remains below the minimum requirements for more than two semesters may be continued on extended probation only if their cumulative GPA is

greater than 2.0.

- **Suspension:** Any student who, in three consecutive semesters, earns a cumulative GPA of less than 2.0 or does not complete 60 percent of attempted credits, will be automatically suspended pending an appeal to the academic standards committee. At that time, the committee may issue requirements regarding credits and courses to be taken.

Students will not be allowed to register for a course more than two times without permission from a department chair. Students who fail any course three times will automatically be suspended pending an appeal to the academic standards committee.

All failed subjects must be repeated during the following semester. The student may be allowed to schedule advanced subjects if all prerequisites are met, or may be allowed to repeat subjects already passed to raise the average, if approved by the academic standards committee.

If a student is suspended and, upon appeal, receives approval from the academic standards committee to register, he/she is considered on probationary status. If his/her overall GPA is less than 2.0, and remains less than 2.0 despite a greater than 2.0 GPA for the semester he/she reentered in, and continues to receive a term GPA of less than 2.0, the student is now on extended probation.

- **Academic Dismissal:** If a student, after an appeal to the academic standards committee, is allowed to register and continues to receive a term grade point average of less than 2.0, the student will not be allowed to reenroll until he/she has demonstrated improved academic performance by taking at least nine credits at another institution and attaining at least a 2.0 GPA for those courses.
- **Incomplete:** Subjects must be completed to the satisfaction of the faculty member within one semester.
- **Issues:** Students must address all issues related to academic progress to the academic standards committee for review. Once the committee issues its decision or recommendation, if unsatisfactory, students may appeal the decision to the senior vice president. The senior vice president's decision is final.



Students who wish to audit classes must obtain written permission from the appropriate department chair. Auditing students may attend selected classes, but will not receive credit. They will not be required to write examinations or to satisfy prerequisites.

A student may be removed from matriculated status and placed in nonmatriculated status for academic deficiencies.

## ACADEMIC PERFORMANCE

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The faculty evaluate students as they progress through their studies. The faculty make formal student evaluations twice during each term: at midterm a P (pass) or F (fail) grade is given, and a letter grade is issued for the final grade.

## ACADEMIC STATUS

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A matriculated student is one who has been accepted into and is pursuing a program consisting of a sequence of subjects leading to a degree.

An admitted student is considered a conditional matriculant until the receipt of all admission documents, the completion of remedial courses (if required) or the 24-credit equivalency certificate requirement.

## ACADEMIC HONORS

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Outstanding student achievement in academic standing is recognized in several ceremonies throughout the academic year. Students who carry a full-credit load are named to honors lists based upon earned grade point averages each semester.

President's List:	3.85 to 4.00
Dean's List:	3.68 to 3.84
Faculty List:	3.50 to 3.67

For honors, the minimum full-credit load is considered 12 credits for full-time students or six credits for part-time students. Recognition of honor awards will be noted on the student's transcript.

## ADVANCED STANDING, TRANSFER AND PRIOR LEARNING CREDIT

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Vaughn will consider granting transfer credits (advanced standing) for equivalent studies completed at other accredited institutions and/or for technical training obtained in the armed forces. These studies must meet the College's standards as determined by the faculty.

Applicants seeking transfer credit must submit official transcripts of their previous education and

the appropriate catalogs describing these credits to the admissions office at the earliest possible date.

Generally, transferring students must have a 2.0 grade point average (GPA) at the time of transfer. If the applicant has been out of school for more than a full academic year, a written request for consideration may be made.

Students seeking transfer credit may confer with the department chairs no later than the student's registration day to discuss his/her status and establish an academic schedule. Only those courses of equal or equivalent credit value for which the applicant received a grade of "C" or better will be given transfer credit.

The respective department chair's approval is required for transfer credits (advanced standing) given in that department. In any case, a student must complete the final 30 credits prior to graduation at the College.

If a student anticipates transfer of credit for a particular course, he/she should be discouraged from enrolling in the same course. If a student elects to enroll in the course for whatever reason (e.g., obtain full-time status for financial aid, increase GPA, etc.), transfer credit will no longer apply. The academic grade will be the grade of record. If the student withdraws from the course or receives a failure in the course, he/she will have to retake the course at Vaughn College. (See also "Taking Courses at Another College or University," page 48.)

## BYPASS EXAMINATIONS

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Vaughn offers applicants and students the opportunity to take bypass examinations on the basis of equivalent studies completed at accredited secondary and/or postsecondary institutions. Bypass examinations determine whether or not a student has the knowledge and ability to be exempt from a given course. A passing score will result in full credit for the course.

It is recommended that a student apply for a bypass examination prior to the semester in which the course is offered. This allows time to register for the course in the event the student fails the examination, and would prevent undue tuition charges for courses the student registered for but may not need.

Bypass examinations are not available to students who have been or who are registered for the course. Eligibility for the examination is determined by the chair of the particular academic department. Documented past work experience will be considered.



The receipt for the testing fee must be presented before the examination can be administered (see Bypass Examination Fee, page 24). A student may bypass a number of courses, but may attempt to bypass any given course only once. Federal Aviation Administration regulations may limit the availability of bypass exams in certain areas. Bypass examinations may adversely impact financial aid, and students receiving aid should confer with a financial aid counselor before taking the bypass examination.

## **ACADEMIC HONESTY**

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Vaughn College is committed to ensuring quality and integrity in all its academic and evaluative activities. A learning environment that promotes high academic standards is beneficial to students and faculty alike. Academic dishonesty of any form is in opposition to the values and mission of the institution and will not be tolerated.

## **ACADEMIC APPEALS**

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Students concerned about their grade in a given course should first try to resolve the issue with their instructor and explain their concerns about the grade, requesting a resolution.

If unsuccessful, the student should contact the academic department chairperson. In writing, the student must detail his or her argument for a grade change, specifically identifying and documenting those factors (other than academic performance) that the student believes affected his or her grade. The student must submit this written statement no later than 30 days from the start of the fall or spring semester directly following the semester in which the grade in question was assigned. The chair will forward this statement to the instructor, and then meet with the instructor and the student to mediate the dispute. The student will receive a written reply from the department chair within 15 days from receipt of the appeal.

If the problem is still not resolved, and the student wishes to continue the petition, he or she may make an appeal in writing to the academic standards committee. The committee shall begin with the presumption that the original grade was assigned correctly, and the burden of proof will lie with the student. If the committee determines the grade assigned was based on factors other than the student's academic performance in the course, the committee may determine a new grade and submit a change of grade form.

If the student does not find the committee's decision satisfactory, he or she can petition the vice president of academic affairs in writing. The vice president will review the decision of the committee and may let the committee's decision stand, or reverse it and resolve the problem utilizing the academic rules and standards of the College. The senior vice president will then forward the final decision to the student, as well as to the registrar's office.

## **ACADEMIC CREDITS AND CERTIFICATION UNITS**

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### **COLLEGE CREDITS**

College credits are granted for successful completion of courses offered by the arts and sciences, engineering and technology, management and aviation departments.

One credit toward graduation is granted for each 15 hours of lecture or 45 hours of laboratory per semester. Students should allow two preparation hours for each lecture hour.

Transfer credits refer to those subjects for which credit is earned at another college or by nontraditional methods.

### **CERTIFICATION UNITS**

Certification units are granted as a result of successful completion of classes offered by the Aviation Training Institute.

One certification unit is granted toward a Federal Aviation Administration airframe and/or powerplant certificate for each 15 hours of lecture or 45 hours of laboratory work per semester. Individual certification units are transferable only to the associate in occupational studies degree program. However, completion of all airframe and powerplant certification units can be transferred as 30 college credits to the aviation maintenance-based associate in applied science or bachelor of science degree programs. No more than 20 units can be taken during fall or spring semesters, and no more than 10 during the summer, without permission from the director of the Aviation Training Institute.

### **EQUIVALENT HOURS**

Equivalent hours are granted for successful completion of basic skills classes.

One equivalent hour is granted for each 15 hours of lecture or 45 hours of laboratory work per semester.

Equivalent hours are only transferable to the associate in occupational studies degree program.

### **CREDIT LOADS**

The maximum credit load allowed in the fall or spring semester for full-time students is 19 credits. The maximum credit load during a summer semester is 12 credits. Approval from the associate vice president of academic support services is required to register for more than the maximum credit load. Students on academic probation are assigned to a reduced load maximum during the probationary period.

### **LICENSING/CERTIFICATE ISSUANCE**

After successful completion of the AA02/PP02 courses, students can take their knowledge exams at the PSI Testing Center and their oral/practicals with a staff-designated mechanic examiner.

### **TAKING A COURSE OUTSIDE OF A DEGREE PROGRAM**

If a student takes a course outside of his/her degree program, the student's final grade in the course will count toward the student's cumulative grade point average. Students should consider the potential financial aid implications before enrolling in the course.

### **INCOMPLETES**

A grade of "I" (incomplete) is to be awarded very rarely, only when the student has not completed a small portion of the coursework due to exceptional circumstances. Granting of this grade is up to the discretion of the instructor, but is not recommended when a student has not completed significant portions of course tasks. The instructor must notify the department chair.

A signed "Change of Grade" form must be submitted to the registrar's office no later than the end of the semester immediately following the semester in which the student received a grade of "I." For example, if an "I" grade is received in the spring or summer semesters, the grade change form must be submitted by the end of the following fall semester, and so on.

Failure to complete the course work in a timely fashion, and to the satisfaction of the instructor, will automatically result in the conversion of an "I" grade to the grade of "F" (failure).

### **GRADE CHANGE POLICY**

Grade changes from "F" are generally not permitted. Students receiving final grades of "F" must repeat the course. Under extenuating circumstances, requests will be handled through the senior vice president.

Due to certain extraordinary circumstances (makeup assignments, retesting, clerical error, etc.), a student may request a grade change. If a student received a previous grade of A, B+, B, C+, C or D and wishes to receive a grade change, he or she must formally initiate an academic appeal. If the appeal is approved, the student must fill out an official "Grade Change Request" form. The form must be submitted to the instructor of the course in question.

Once the instructor signs the form, it must then be submitted to the department chair for approval and signature. The department chair will then sign the form and forward it to the senior vice president for approval. The vice president's signature (as well as the signature of the instructor and department chair) must appear on the form before it is sent to the registrar's office for processing. The proper paperwork must be submitted to the registrar's office no later than the end of the fall or spring semester directly following the semester in which the grade in question was assigned. Grade change requests after this time requirement will be denied.

### **REPEATING A COURSE**

If a student repeats a course, both grades will remain on the student's record. However, only the last grade received in the repeated course will be computed into the student's grade point average.

### **ATI FAILING GRADES POLICY**

#### **AA02/PP02 – Certification Preparation – (Airframe and Powerplant)**

There are three grades issued for AA02/PP02: P-Pass, F-Fail or U-Passing outstanding balance/library due. Students receiving a passing grade from the instructor in AA02/PP02 may still be subject to an "F," if any of the following conditions exist:

1. Failing pre-/co-requisite courses
2. Unable to fulfill make-up hours requirements, if applicable

For outstanding tuition balance and/or library dues, students have up to two years to satisfy the above course requirements. Those who fail their screenings must retake the respective review course.

For academic policy on good academic standing and failing grades, etc., see page 36.

## **DEGREE PROJECT**

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Candidates for a degree in some disciplines must complete a final project or a comprehensive report and/or laboratory project before the end of their last semester. Students must register a project with the appropriate academic department no later than the first week of the final semester. Graduates seeking the Federal Aviation Administration (FAA) certification must fulfill all requirements by completing the license preparation seminars. Students in maintenance-based programs who elect not to be certified must substitute a degree project seminar (DP405) in lieu of AA02 (general airframe) or PP02 (general powerplant). In addition, students possessing one of two licenses must also complete DP405 if seeking noncertification for graduation.

Courses in the Aviation Training Institute are maintained separately from non-FAA-based programs. Transcripts will reflect two grade point averages: a grade point average for the Aviation Training Institute courses and a GPA for all academic courses.

Students who have received a final grade of “F” (failure) for the final project or course may not receive a grade change. Under extenuating circumstances, students can appeal to the academic standards committee.

## **INDEPENDENT STUDY**

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An independent study is a project designed by a student and a faculty mentor that allows the student to pursue an academic topic under the tutelage and supervision of the faculty mentor in more depth than available in a regularly scheduled course.

approval of the department chair.

The student and faculty mentor are expected to meet for at least one hour weekly during the semester of the independent study. Normally, an independent study involves selected readings, guided research and submission of a paper of at least 15 to 20 pages. Independent study in an area in which the faculty member deems a paper inappropriate must be accompanied by an alternate plan to assess the student’s work and learning outcomes.

Students may register for only one independent study course for a maximum of three credits during any semester or term, and may apply a maximum of six credits of independent study for graduation. Independent study should not normally duplicate coursework available in a regularly offered course, and may not duplicate course work for which a student has previously received credit. Exceptions must be approved by the senior vice president.

## **GRADUATION REQUIREMENTS**

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Graduation is recommended to the Board of Trustees by the faculty upon completion of the following criteria:

1. A cumulative grade point average of 2.0 or higher must be attained.
2. All assigned work must be completed satisfactorily.
3. Either the degree project requirement or the certification requirement must be satisfied. Previously certified students must fulfill the degree project requirement.
4. Transfer students with advanced credit must complete 30 credits in residency.
5. All financial obligations must be satisfied.
6. Graduation application requirements must be completed as listed under “Applying for Graduation.”
7. Students must complete all academic course requirements in their degree program.
8. Students must complete exit interviews with the office of financial aid.

The faculty mentor must be a full-time faculty member in the discipline of the independent study, and the arrangement must be approved by the department chair. Adjunct faculty may serve as independent study mentors, again only with the

All courses listed in the curriculum of the degree program are required and may not be substituted unless approved by the chair of the department. If not used as a required elective(s), courses taken outside the degree program will not count toward graduation requirements.

In cases where a course is no longer offered, the department chair may make course substitutions. Students in the Aviation Training Institute must receive passing grades in the certification preparation courses, AA02 and PP02. Graduation status may be postponed until all the requirements in passing the certification preparation courses are met.

## APPLICATION FOR A SECOND DEGREE

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A student may apply for another degree if he/she can satisfy one of the following conditions:

1. The student has officially graduated with at least one of Vaughn College's degree programs, or
2. The student is within his/her last semester toward completion of all degree requirements of the initial degree program, and has submitted a degree declaration form for the initial degree program within the appropriate due date.
3. The conferral of two baccalaureate or associate degrees must represent mastery of "two essentially different" areas of specialization. For example, a student may earn a bachelor's degree in airport management and electronic engineering technology, but not airport management and airline management.

The student who applied for a second degree under condition number two, but subsequently did not graduate in his/her initial program because he/she did not successfully complete all academic requirements, will have his/her second degree application rescinded. In addition, graduation status in the initial program will be deferred until all academic requirements are met, along with other graduation requirements (see above for graduation requirements).

Any student receiving Title IV aid should consult with the office of financial aid to determine eligibility of financial aid. A change of curriculum (see page 46) may be recommended for the student who is at risk academically. If the student is eligible for a second degree, he/she should keep in mind

that if a change of curriculum is submitted and approved, the student is forfeiting the initial degree program, even though the student may be close to fulfilling all degree requirements.

## DUAL MAJORS

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Students may earn a single degree with a dual major within the same department. Dual majors will be awarded in the following areas for degrees:

### AAS Degrees

Aeronautical Engineering Technology  
Airport Management  
Aircraft Operations  
Animation and Digital Technologies  
Aviation Maintenance  
Electronic Engineering Technology

### BS Degrees

Aircraft Operations  
Airline Management  
Airport Management  
Aviation Maintenance  
Electronic Engineering Technology  
General Management  
Mechanical Engineering Technology

Students need to file a "Change of Curriculum" form in the records office of the registrar. The chair(s) of the respective department(s) will determine the status of students who have filed applications for a dual major degree on an individual basis.

## APPLYING FOR GRADUATION

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Students must:

1. File a "Graduation Declaration" form with the registrar's office. All degree declaration forms must be returned to the registrar's office the semester prior to the last semester in which they are planning to graduate. For example, students applying for May graduation must file no later than October 1; for December graduation, no later than July 1; or September graduation, no later than March 1.
2. A nonrefundable \$80 fee is required when the graduation declaration form is submitted.

3. Candidates with more than six outstanding credits, or who have not filed by the deadlines stated above, will be postponed until the next graduation date.

## COMMENCEMENT

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Commencement is held once per year at Vaughn, generally, the third Saturday in May. Graduates from September, December and May candidates can participate. Candidates who participate in the spring commencement exercise are still considered graduate candidates. Participation in the ceremony does not imply conferral of a degree. Degrees are finalized and conferred upon a final academic and financial review. To expedite publishing of the commencement program, cumulative grade point averages may not reflect the semester in which the commencement exercise takes place. Therefore, academic honors are subject to change.

Graduates must complete all requirements as stated under “Graduation Requirements.” (See page 40).

Outstanding student achievement is recognized at the College’s honors convocation ceremony. Students who carry a full credit load (12 credits/units or more), excluding developmental courses, are named to the honors list, based upon their cumulative grade point average.

Honors categories include:

*Summa Cum Laude*—A grade point average of between 3.85 and 4.0.

*Magna Cum Laude*—A grade point average of between 3.68 and 3.84.

*Cum Laude*—A grade point average of between 3.50 and 3.67.



## ACADEMIC CALENDAR 2015 – 2016\*

\* All dates are subject to change. Check the website: [www.vaughn.edu](http://www.vaughn.edu).

### FALL SEMESTER 2015

New Student Registration	Mon., March 11, 2015, through Sat., September 12, 2015
Continuing Student Early Registration	Mon., March 11, 2015, through Mon., August 31, 2015
Continuing Student Regular Registration	Wed., May 6 through Mon., August 31, 2015
Classes Begin	Tues., September 1, 8 a.m.
Late Registration Begins ( <i>late fee will be imposed</i> )	Tues., September 1
Tuition Payment Due	Tues., September 1
Program Adjustment Period ( <i>add/drop/change</i> )	Tues., September 1 through Sat., September 5
Labor Day Holiday	Mon., September 7
Last Day to Register	Sat., September 12
Last Day to File for May 2016 Graduation	Thurs., October 1
Columbus Day Holiday	Mon., October 12
Monday Schedule	Tues., October 13
Midterm Exam Period	Mon., October 19 through Sat., October 24
Last Day to Withdraw without Academic Penalty	Tues., November 3
Wednesday Schedule	Tues., November 10
Veterans Day Holiday	Wed., November 11
Early Spring Registration Begins	Mon., November 9
Thanksgiving Recess	Wed., November 25 through Sun., November 29
Classes Resume	Mon., November 30, 8 a.m.
Classes End	Wed., December 16
Exam Period	Thurs., December 17 through Wed., December 23
Early Summer and Fall 2016 Registration Begins	Mon., December 21
Spring/Summer 2015 Grade Change Deadline	Wed., December 23
Winter Recess	Thurs., December 24 through Sun., January 17, 2015

### SPRING SEMESTER 2016

New Student Registration	Mon., March 11, 2015, through Sat., January 30, 2016
Continuing Student Early Registration	Mon., March 11, 2015, through Wed., December 23, 2015
Continuing Student Regular Registration	Mon., January 5, 2015, through Sat., January 16, 2016
Dr. Martin Luther King Jr. Day Holiday	Mon., January 18
Classes Begin	Tues., January 19, 8 a.m.
Late Registration Begins ( <i>late fee will be imposed</i> )	Tues., January 19
Tuition Payment Due	Tues., January 19
Program Adjustment Period ( <i>add/drop/change</i> )	Tues., January 19 through Sat., January 30
Last Day to Register	Sat., January 30
Presidents Day Holiday	Mon., February 15
Monday Schedule	Tues., February 16
Midterm Exam Period	Mon., February 29 through Sat., March 5
Last Day to Withdraw without Academic Penalty	Wed., March 9
Spring Recess	Mon., March 28 through Sun., April 3
Classes Resume	Mon., April 4, 8 a.m.
Early Spring 2017 Registration Begins	Mon., April 11
Classes End	Tues., May 3
Exam Period	Wed., May 4 through Tues., May 10
Fall 2015 Grade Change Deadline	Tues., May 10
Honors Convocation	Wed., May 11
Commencement	Sat., May 21

### ACADEMIC SESSION I SUMMER 2016

Continuing Student Registration	Mon., March 14, 2016, through Sat., May 21, 2016
Classes Begin	Mon., May 23, 8 a.m.
Late Registration Begins ( <i>late fee will be imposed</i> )	Mon., May 23
Tuition Payment Due	Mon., May 23
Program Adjustment Period ( <i>add/drop/change</i> )	Mon., May 23 through Wed., May 25
Last Day to Register	Wed., May 25
Memorial Day Holiday	Mon., May 30
Last Day to Withdraw without Academic Penalty	Mon., June 13
Classes End	Fri., July 1
Summer Recess	Mon., July 4 through Sun., July 10

### ACADEMIC SESSION II SUMMER 2016

Continuing Student Registration	Mon., March 14, 2015, through Sat., July 2, 2016
Classes Begin	Mon., July 11, 8 a.m.
Late Registration Begins ( <i>late fee will be imposed</i> )	Mon., July 11
Tuition Payment Due	Mon., July 11
Program Adjustment Period ( <i>add/drop/change</i> )	Mon., July 11 through Wed., July 13
Last Day to Register	Wed., July 13
Last Day to Withdraw without Academic Penalty	Mon., August 1
Classes End	Sat., August 20

## AVIATION TRAINING INSTITUTE CALENDAR 2015 – 2016\*

\* All dates are subject to change. Check the website: [www.vaughn.edu](http://www.vaughn.edu).

### FALL SEMESTER 2015

New Student Registration	Wed., March 11, 2015, through Sat., September 12, 2015
Continuing Student Early Registration	Wed., March 11, 2015, through Mon., August 31, 2015
Continuing Student Regular Registration	Wed., May 6 through Mon., August 31, 2015
Classes Begin	Tues., September 1, 8 a.m.
Late Registration Begins ( <i>late fee will be imposed</i> )	Tues., September 1
Tuition Payment Due	Tues., September 1
Program Adjustment Period ( <i>add/drop/change</i> )	Tues., September 1 through Sat., September 5
Labor Day Holiday	Mon., September 7
Last Day to Register	Sat., September 12
Last Day to File for May 2015 Graduation	Thurs., October 1
Columbus Day Holiday	Mon., October 12
Monday Schedule	Tues., October 13
Last Day to Withdraw without Academic Penalty	Mon., November 3
Midterm Exam Period	Mon., October 19 through Sat., October 24
Wednesday Schedule	Tues., November 10
Veterans Day Holiday	Wed., November 11
Early Spring Registration Begins	Mon., November 16
Thanksgiving Recess	Wed., November 25 through Sun., November 29
Classes Resume	Mon., November 30, 8 a.m.
Classes End	Wed., December 16
Exam Period	Thurs., December 17 through Wed., December 23
Spring/Summer 2015 Grade Change Deadline	Wed., December 23
Winter Recess	Thurs., December 24, 2014, through Sun., January 17, 2015

### SPRING SEMESTER 2016

New Student Registration	Wed., March 11, 2015, through Sat., January 16, 2016
Continuing Student Early Registration	Wed., March 11, 2015, through Wed., December 23, 2015
Continuing Student Regular Registration	Mon., January 5, 2015, through Sat., January 9, 2016
Classes Begin	Mon., January 11, 8 a.m.
Late Registration Begins ( <i>late fee will be imposed</i> )	Mon., January 11
Tuition Payment Due	Mon., January 11
Program Adjustment Period ( <i>add/drop/change</i> )	Mon., January 11 through Sat., January 16
Last Day to Register	Sat., January 16
Dr. Martin Luther King Jr. Day Holiday	Mon., January 18
Presidents Day Holiday	Mon., February 15
Monday Schedule	Tues., February 16
Midterm Exam Period	Mon., February 29 through Sat., March 5
Early Summer and Fall 2016 Registration Begins	Mon., March 14
Last Day to Withdraw without Academic Penalty	Wed., March 2
Spring Recess	Mon., March 28 through Sun., April 3
Classes Resume	Mon., April 4, 8 a.m.
Early Spring 2017 Registration Begins	Mon., April 11
Classes End	Tues., May 3
Exam Period	Wed., May 4 through Tues., May 10
Fall 2015 Grade Change Deadline	Tues., May 10
Honors Convocation	Wed., May 11
Make Up Hours (If you qualify)	Wed., May 11 through Sat., May 14
Commencement	Sat., May 21

### SESSION I SUMMER 2016

Continuing Student Registration	Mon., March 14, 2016, through Sat., May 15, 2016
Classes Begin	Mon., May 16, 8 a.m.
Late Registration Begins ( <i>late fee will be imposed</i> )	Mon., May 16
Tuition Payment Due	Mon., May 16
Program Adjustment Period ( <i>add/drop/change</i> )	Mon., May 16 through Tues., May 17
Last Day to Register	Tues., May 17
Memorial Day Holiday	Mon., May 30
Last Day to Withdraw without Academic Penalty	Wed., June 6
Classes End	Fri., July 1
Summer Recess	Mon., July 4 through Sun., July 10

### SESSION II SUMMER 2016

Continuing Student Registration	Mon., March 14, 2016, through Sat., July 2, 2016
Classes Begin	Mon., July 11, 8 a.m.
Late Registration Begins ( <i>late fee will be imposed</i> )	Mon., July 11
Tuition Payment Due	Mon., July 11
Program Adjustment Period ( <i>add/drop/change</i> )	Mon., July 11 through Tues., July 12
Last Day to Register	Tues., July 12
Last Day to Withdraw without Academic Penalty	Mon., August 1
Classes End	Sat., August 27

## GRADING SYSTEM

One credit hour represents 15 lecture hours or 45 assigned laboratory hours. One unit represents 15 lecture hours or 45 laboratory hours.

<i>Grade</i>	<i>Standard</i>		<i>Credit Points</i>		<i>Other Marks</i>
A	(90-100)	Excellent	4.0	AU	Audit, No Credit
B+	(85-89)		3.5	NG	No Grade Given
B	(80-84)	Good	3.0	P	Pass
C+	(75-79)		2.5	PE	Pass/Exempt from next level of remediation
C	(70-74)	Average	2.0	S	Satisfactory
D**	(60-69)	Min. Passing	1.0	U	Unsatisfactory
F	Below 60	Failure	0	I	Incomplete—Not Computed in Index
Codes				W	Official Withdrawal
AL	Credit by Airframe Certificate			IE	Incomplete—Extended
APCR	Advanced Placement Credit			NA	Registered but Never Attended
APL	Credit by Airframe and Powerplant Certificate			WX	Withdrawal Due to Administrative Reasons or Stopping Attendance by Midterm
CE	Credit by Examination				
CL	Credit by Other License or Certificate				
PL	Credit by Powerplant Certificate				
H	Life Experience				
FCC	Credit by FCC License			FX	Withdrawal Due to Excessive Absences After Midterm
NC	No Count				
T	Transfer Credit				
WV	Waiver				

Grade point average (GPA) is computed by multiplying the number of quality points by the number of credits/units of the course. Total number of quality points is divided by the sum of total credits/units\* passed and failed to obtain the grade point average.

\* Developmental and special courses carrying credits and receiving pass, pass/exempt or unsatisfactory grades are not computed into the GPA.

\*\* For Aviation Training Institute students, minimum passing grade for all courses in the airframe and powerplant curriculum is a “C.” Grades below 70 are “F,” except AA02/PP02 certification preparation courses, which have a minimum passing grade of 90 percent.

### Example of a Computed Grade Point Average:

Courses Taken	Credits	Grade	Quality Points
English	3	B (3.0 points)	9
American Government	3	A (4.0 points)	12
Calculus	3	C+ (2.5 points)	7.5
Physics	4	C (2.0 points)	8
Total	13		36.5 ÷ 13 = 2.80 GPA

## STUDENT RECORDS AND REGISTRATION

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### STANDARDS OF ACHIEVEMENT

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In all curricula, the student must maintain a rate of progress satisfactory to the faculty. Achievement in course assignments must meet established standards. Admission standards are designed to provide an opportunity to all interested students. Performance standards make certain that each student takes full advantage of this opportunity, while assuring the competence of all the College's graduates. Academic assistance is available to help each student attain satisfactory performance levels.

### ENROLLMENT STATUS

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Vaughn's academic semester schedule provides for a fall semester of 15 weeks, a spring semester of 15 weeks and two summer sessions of six weeks each. Examination periods are scheduled during each semester and each summer session. Students enrolled in the Aviation Training Institute follow a three-semester schedule with 15 weeks in the fall, spring and summer.

### FULL-TIME ATTENDANCE

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A minimum of 12 credits/units of study must be scheduled each fall and spring semester for full-time financial aid certification. Students who elect the minimum full-time schedule are advised that summer attendance is essential if they are to make progress toward graduation.

### CLASS SCHEDULES

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Classes meet Monday through Saturday. Classes are offered on Saturdays between 8 a.m. and 8 p.m.

There are scheduled breaks and observed holidays during each semester. Consult the academic and Aviation Training Institute calendars (pages 42 and 43, 134 and 135.)

### ABSENCES AND LATENESS

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mandated depending on the faculty member and/or the department from which a particular course is taken. The final grade in any subject may be reduced in proportion to the number of unexcused absences.

### AVIATION TRAINING INSTITUTE COURSES

For students in the Aviation Training Institute, the Federal Aviation Administration (FAA) requires full attendance in all FAA-approved subjects. Students arriving to class five to 10 minutes late are marked as late; students arriving to class more than 10 minutes late are marked as absent.

Students are allowed to make up only 15 percent of any missed class time. If a student misses more than 10 percent of classes without making up time, they will receive a grade of failure for excessive absences, or "FX," for the course.

Any missed class time in an FAA-approved course must be made up, and students must complete the makeup time within 15 business (school) days of when absence occurred or the student will receive a failure due to excessive absence, or "FX."

### CONTINUOUS DEGREE PROGRESSION

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One of the important features of Vaughn College is continuous degree progression.

A student whose career goal changes during the course of his or her education may be given the opportunity to change either degree or major. Many courses are common to all curricula and can be transferred readily from one program to another.

Placement test results and a review of the student's high school and college transcripts may be required if the student is requesting permission to advance into a bachelor's degree program. Students may also request to transfer from a bachelor program to an associate program. Only equivalent or higher-level courses will transfer.

Cumulative grade point averages will not be affected by these transfers. However, changes in degree programs may affect financial aid, and students are required to consult with a financial aid counselor before changing degree programs.

Students pursuing additional degrees or programs, or students wishing to change their program, are required to follow the degree program requirements listed in the current catalog.

## CHANGE OF CURRICULUM

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To change curriculum, students must file a “Change of Curriculum” form with the registrar three weeks prior to registering for the semester in which the change is to take effect. There is a \$10 change of curriculum fee, payable at the office of student accounts.

If students change their curriculum, they must follow the requirements of the catalog that is in effect at the time of the change, regardless of when they first were admitted to the College. In addition, students must consult with a financial aid counselor before submitting the “Change of Curriculum” form to the registrar. No change of curriculum will take effect for the semester in which students are already registered.

Freshmen who were referred to the associate degree are not allowed to change curriculum until they have completed their second semester, and their GPA is a minimum 3.0. Appeals can be submitted to the senior vice president.

International students must seek approval by the international student adviser. Students in the Aviation Training Institute program are required to take a placement exam before changing into an academic program.

## ADDING AND DROPPING COURSES OR WITHDRAWAL

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A student registered for any term who wishes to adjust his/her schedule, or discontinue studies entirely, must go to the registrar’s office. A student will remain registered, whether or not classes are attended, until he/she officially withdraws from the course or the College.

Students wishing to adjust their schedule must complete the College’s “add/drop” form, available in the office of student advisement or office of the registrar, and have it approved and signed by a staff adviser. Additional approval might be necessary in cases where:

2. Late registrants need additional approval from the instructor teaching the course or the department chair to determine eligibility; and
3. If a student is considered remedial or academically at risk, approval from a representative of the academic resource center and/or department chair is necessary.

The office of the registrar may reject a program change if the add/drop form is not submitted within the appropriate period. (See the calendar or registration material for last day to withdraw and for the last day to add/change classes).

Students withdrawing from a class with a lecture and a lab may withdraw from the lab and remain enrolled in the lecture. However, you may not withdraw from the lecture and remain enrolled in only the lab. Special permission is required from the department chair.

Students who are withdrawing entirely from the College must fill out a total withdrawal form. Before withdrawing, students must seek approval from the office of the vice president of enrollment services and public affairs, the director of financial aid or international student adviser (if applicable), and student accounts before submitting the form to the office of the registrar. To clear all financial obligations, the add/drop form and student clearance/exit form must be approved and signed by representatives of the financial aid office, student accounts and student services. The student identification card must be surrendered to the student services office at the time the student clearance/exit form is approved. (See “Refunds to Students Who Withdraw,” on page 27).

The date on which these forms are completed and approved by the office of the registrar will constitute the date of change or withdrawal for the student.

## COST OF SCHEDULE CHANGES

If a student preregisters, any program changes (add/drop) made before the first day of the semester will be free of charge. Otherwise, any program changes, including changing sections, will be \$10 per add/drop form.

Students will not be charged an add/drop fee if a course is canceled.

1. If dropping a course affects financial aid, the add/drop should be approved by a representative of financial aid and/or a student accounts representative;



## ADMINISTRATIVE WITHDRAWALS

Vaughn will withdraw a student from class in the following situations:

1. Fails to meet proper immunization requirements/documents (refer to “Immunization”);
2. Disciplinary reasons;
3. Fails to meet tuition/financial obligations;
4. Discontinued attendance in class\*;
5. Remedial students exceed the 12-credit course load limit; and
6. Students on military leave must supply the College with a copy of military orders for student records and possible tuition adjustment.

Depending on the administrative withdrawal date, the student’s account may or may not be prorated (refer to page 29, “Tuition Refund Schedule”).

\*Refer to page 45, under “Grading System,” to determine which grade is applicable: NA, WX or FX, or page 28, “Refunds to Students Who Withdraw.”

## WITHDRAWAL PERIOD

Students who withdraw before eight weeks have passed in a regular semester are considered to have withdrawn. They will receive a final grade of “W” on their transcripts.

Withdrawal after this period is permitted only in unusual circumstances, which requires the approval of the registrar’s office.

## MAINTENANCE OF MATRICULATION

Students who need to take a leave of absence (in mid-semester or otherwise) must file a maintenance of matriculation form in the registrar’s office.

Students wishing to keep their status as matriculated while on their leave of absence (one semester) pay a maintenance of matriculation fee of \$50 per semester upon taking their leave of absence. Under these circumstances, a reentry fee is not required. Students can maintain their matriculation for up to two consecutive semesters.

International students who have been issued an I-20, or students with outstanding tuition balances, cannot maintain matriculation. Eligible students wishing to maintain matriculation must submit their fees and forms in an appropriate time frame.

## TOTAL WITHDRAWAL

A student who registers in a given term and decides to discontinue from all his/her classes must submit a total withdrawal form. This form must be approved by the office of student affairs where he/she will also be interviewed and counseled by financial aid, student accounts and the registrar.

Once the total withdrawal form is completed and received by the appropriate offices, the student’s financial account will be adjusted according to the date of submission, not the student’s last date of class attendance. (Refer to the “Tuition Refund Schedule” on page 28 for additional information).

## MATRICULATION

Upon acceptance to Vaughn, the applicant is approved and a matriculation notice is issued by the admissions office. The director of admissions will consider individual requests for admission on a conditional basis.

Candidates who must clear deficiencies in their application should seek the advice and guidance of an admissions counselor. All conditions must be removed within the period prescribed by the director of admissions. The granting of matriculation imposes on the student the obligation to notify the College in writing of all changes in status, including withdrawal from courses or withdrawal from the College.

## IMMUNIZATION

New York state law requires all students born on or after January 1, 1957 and taking six or more credits to demonstrate immunity to measles, mumps and rubella (German measles).

Failure to submit proof of immunity to the College may prohibit a student from registering for classes. Immunization status will be checked as part of the registration process.

Students not in compliance 30 days after the start of classes may not be permitted to continue classes and may be de-registered for the semester. This deadline may be extended to a maximum of 45 days for out-of-state or international students. The director of student affairs is available to answer questions students may have concerning immunization requirements. Documents providing proof of immunity should be submitted in the English language.



## RE-ENTRY POLICY

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A student seeking re-entry to the College after one or more semesters (excluding summer sessions) without maintaining matriculation must submit a completed re-entry application to be reviewed by a re-entry committee along with a \$40 fee to the registrar's office for consideration. (See page 46 for procedures to maintain matriculation.) The re-entry fee is not refundable.

Tuition for re-entry students is based on rates listed in the current catalog. A non-refundable tuition deposit of \$100 is due and payable prior to registration.

The registrar's office will notify the student regarding his/her re-admission status. All previous financial obligations to the College must be reconciled before re-entry can be considered.

Graduates of the College returning for the first time after graduation are not required to pay the re-entry fee. They are required to file an application for a second degree with the registrar's office.

Students may not re-enter academic programs that are no longer offered.

## TAKING COURSES AT ANOTHER COLLEGE OR UNIVERSITY

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Vaughn College recognizes that students may need to take a course at another college and have it transferred toward their Vaughn degree. Students may apply for permission to take courses outside the College only under the following circumstances:

1. If the course or courses are not offered at Vaughn College during a given semester
2. If the student plans to be away from the area during a given semester

Students who plan to take a course at another college must first receive approval from the appropriate academic department chair at Vaughn College, then file an official form, available at the office of the registrar, before they take the course. Students will use this form to identify the exact course they plan to take, the college they propose to attend, and the semester in which the course will be taken. The department chair must verify that the course is equivalent to a Vaughn College course and applicable to curriculum requirements before allowing the student to take the course elsewhere. It is the responsibility of the student to have an

official transcript sent to Vaughn College's office of the registrar upon completion of a course taken outside. Once students have enrolled in a degree program at Vaughn, they may take no more than nine credits toward a bachelor degree, or six credits toward an associate degree, at another institution. Additionally, students may take no more than three credits in this manner per year.

## TRANSCRIPT OF RECORD

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Official transcripts bear the seal and an authorized signature of the College's registrar. Requests for transcripts must be made in writing to the office of the registrar and be accompanied by a fee of \$5 per copy. Transcripts are issued within five days, except during the beginning or ending of each semester when additional time should be allowed.

Transcripts marked "Student Copy" follow the same procedure as above. Students wishing to obtain their personal transcript may only obtain a student copy. Official transcripts are either mailed to another designated address or sealed for pick up.

The College reserves the right to withhold a copy of a student's grades and transcript until he or she has paid in full all of his or her financial obligations to the College.

## COMPLETING YOUR PROGRAM

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Vaughn College offers the full-time student an opportunity to earn a bachelor's degree in eight consecutive semesters, the associate in applied science degree in four to six consecutive semesters, or the associate in occupational studies degree in four consecutive semesters.

The part-time student usually completes the degree requirements in eight semesters for the associate in occupational studies, in 10 semesters for the associate in applied science, and in 16 semesters for the bachelor degree.

The College's semester system makes it possible for each student to select a suitable starting date in the fall, spring or summer. Exact dates may be found in the academic calendars (pages 44 and 137) and the Aviation Training Institute calendars (pages 45 and 138).

## **FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA)**

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Annually, the College informs students of their rights under the Family Educational Rights and Privacy Act (FERPA) and the relevant regulations. FERPA provides that:

- 1) Each student has a right to inspect and review his or her education records within 45 days of the day the College receives a request for access.
  - a) A student should submit to the Registrar's office a written request that identifies the record(s) the student wishes to inspect. The Registrar's office will make arrangements for access, and notify the student of the time and place where the records can be inspected. If the records are not maintained by the Registrar's office, its official shall advise the student of the correct official to whom the request should be addressed.
- 2) The right to request an amendment of the student's education records that the student believes is inaccurate, misleading or otherwise in violation of the student's privacy rights under FERPA.
  - a) A student who wishes to ask the College to amend a record should write the College official responsible for the record, clearly identify the part of the record the student wants changed and specify why it should be changed.
    - b) If the College decides not to amend the record as requested, the College will notify the student in writing of the decision and the student's right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.
- 3) The right to provide written consent before the College discloses personally identifiable information from the student's education records, except to the extent that FERPA authorizes disclosure without consent.
  - a) The College discloses education records without a student's prior written consent under the FERPA exception for disclosure to school officials with legitimate educational interests. A school official is employed by the College in an administrative, supervisory, academic, or research or support staff position (including law enforcement unit personnel and health staff); a person or third-party company with whom the College has contracted as its agent

to provide a service instead of using College employees or officials (such as an attorney, auditor, clearinghouse or collection agent); a person serving on the Board of Trustees; or a student serving on an official committee, such as a disciplinary or grievance committee.

- b) A school official has a legitimate educational interest if the official needs to review an education record to fulfill his or her professional responsibilities for the College.
- 4) The right to file a complaint with the U.S. Department of Education concerning alleged failures by the College to comply with the requirements of FERPA. The name and address of the Office that administers FERPA is:

Family Policy Compliance Office  
U.S. Department of Education  
400 Maryland Avenue, SW  
Washington, DC 20202-5901

Consistent with FERPA, the College designates several categories of student information as "directory information" that may be disclosed for any purpose at the discretion of the College, unless such disclosure is specifically prohibited by the student as detailed below. Directory information shall consist of a student's name, address(es), telephone number, email address, photograph, date and place of birth, major field of study, dates of attendance, participation in officially recognized activities and sports, height and weight of members of athletic teams, degrees, honors and awards received, most recent educational agency or institution attended, and student identification number, user ID or other unique personal identifier used to communicate in electronic systems that cannot be used to access education records with a PIN, password, etc. (A student's Social Security number cannot be used for this purpose.)

At the beginning of the academic year, a student may request in writing from the registrar's office that directory information not be released. Such requests are valid only for that academic year. The College disclaims any and all liability for inadvertent disclosure of directory information.

## **RETENTION RATES**

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About 86 percent of Vaughn College students who are eligible to return for a particular semester do so. The retention rate for first-year students is 66 percent.

## STUDENT AFFAIRS

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### STUDENTS' RIGHTS AND RESPONSIBILITIES

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Students who accept an offer of admission to Vaughn College are expected to be responsible citizens of the College community. Students have a corresponding right to expect that their freedom to learn and develop as individuals will be respected. To preserve these rights and to delineate responsibilities, policies and regulations have been developed to shape the life of the campus community. These policies and regulations are defined in the student handbook, which is available from the office of student affairs.

### STUDENT SERVICES

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The office of student services oversees student identification cards, locker rental, parking stickers, immunization, health insurance, student lounge and the fitness center.

### COUNSELING AND WELLNESS

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Vaughn College's office of counseling and wellness offers short-term counseling to Vaughn students who may be experiencing personal, social or emotional issues. A professional counselor will assist students in developing greater self-understanding as well as strategies for effective problem-solving to enhance personal development and academic success. This office provides a holistic approach to wellness education, promoting individual and community wellness through programs and outreach activities. Workshops, lectures and student leadership training are offered throughout the semester.

### STUDENT ACTIVITIES

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Vaughn promotes a large and varied program of cocurricular activities that offer students a means of supplementing their formal classroom education.

Through an array of academic, cultural, social, recreational and educational programs, students are provided with an important opportunity for enriching their college experience.

The office of student activities works with student government, student clubs and organizations, and interested students to plan programs and activities for the student community.

The programs and activities presented to the students are an integral part of the educational and leadership development experiences at the College.

Students who are interested in planning programs or becoming involved in activities should contact the office of student activities at 718.429.6600, ext. 303.

### STUDENT GOVERNMENT ASSOCIATION

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The Student Government Association (SGA) is primarily concerned with the quality of student life on campus. It carries the concerns of its constituency, the student body, to the administration and is the voice of the student body. It serves students as the liaison to the administration, coordinates social programming, and provides a system for cocurricular involvement through many clubs and organizations.

SGA meets on a regular basis, and encourages all students to attend meetings and become involved.

### STUDENT CLUBS AND ORGANIZATIONS

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Vaughn College supports a variety of student organizations. Activities are moderated by members of the faculty and staff. Each club is assigned an adviser to ensure the club and its administrator remain aligned with the mission and vision of the student organization. Students interested in joining should contact the office of the dean of students at 718.429.6600, ext. 302.

### AVIATION EDITORS REACHING OUT ASSOCIATION (Club AERO)

Club AERO was established to express concerns and views of the student body through the use of effective writing in a student newspaper. Club AERO also promotes the importance of communication through aviation-related journalism.

### CARIBBEAN CULTURE CLUB

This club was established by students for the purpose of creating an organization in which its members could unite as one voice. The Caribbean Culture Club aims to share and celebrate the diversity of cultures of its members. Although most members are of Caribbean descent, this club welcomes people of all backgrounds.

## **CIRCLE K**

This club was created to provide community service and outreach opportunities to Vaughn students, and members also serve as peer leaders for the student body. Circle K focuses on building relationships between students, faculty and peers. Circle K is part of the national Kiwanis organization, and Vaughn's chapter is closely supported by the LaGuardia Kiwanis Club.

## **GAMING AND CULTURE CLUB**

This club aims to bring the Vaughn community together around a love of electronic and non-electronic gaming, and a friendly spirit of competition.

## **GAY STRAIGHT ALLIANCE**

This group's mission is to promote and create a safe space for all students, and to encourage and support diversity.

## **RECYCLING CLUB (CLUB R-4)**

This club was created by students who wanted to bring green awareness to the College. The purpose of the Recycling Club is to educate the school population about conservation practices, such as recycling and other lifestyle choices that minimize the harmful impacts humans can have on the earth.

## **RED HAWKS FLIGHT TEAM**

Students who are pilots as well as others interested in flight competitions are eligible to join this club. The flight team is dedicated to promoting a variety of flying and ground activities, as well as competing in flight and ground events for such organizations as the National Intercollegiate Flight Association.

## **ROBOTICS CLUB**

This club was designed to bring together students with an interest in the field of robotics. Students have the opportunity to design and build robots, and participate in local, national and international competitions.

## **VAUGHN AIR TRAFFIC CONTROL ORGANIZATION (VATCO)**

This student organization offers educational workshops, speaker series, and networking opportunities to air traffic control students.

## **VETERANS STUDENT CLUB**

This organization serves as a resource network and information center for student veterans, and assists in helping them make the transition to academic and campus life.

## **PROFESSIONAL SOCIETIES**

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Distinguished professional societies have chartered student chapters. The student chapters sponsor industry-related field trips and lectures, as well as social activities for all students.

### **AMERICAN ASSOCIATION OF AIRPORT EXECUTIVES, INC. (AAAE)**

The College became a chartered member in 1999. AAAE is designed to help promote, develop and instill professional attitudes in students engaged in the study of airport development, administration, management, operation and related fields of aviation.

### **AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS (AIAA)**

Vaughn's chapter of the Institute is one of the oldest student chapters in the country. This chapter offers students an opportunity for worthwhile career contacts, and a healthy exchange of views and opinions concerning the aviation and aerospace industries.

### **HISPANIC SOCIETY OF AERONAUTICAL ENGINEERS (HSAE)**

The HSAE was formed to assist students of various backgrounds in their educational and career pursuits at the College. Its focus is to promote awareness of technological changes within the aviation industry and to encourage students to complete their degree program successfully. The HSAE is dedicated to helping students from their first day on campus through graduation by assisting them with scholarships and job placements.

### **INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)**

The student chapter in the IEEE is of particular interest to students in electronic engineering technology programs. Members engage in the design, construction and operation of advanced electronic devices, and participate in the programs and projects of chapters at other colleges.

### **SOCIETY OF AUTOMOTIVE ENGINEERS (SAE)**

The College's branch of the Society of Automotive Engineers gives students an opportunity for membership in a professional society dedicated to the technical advancement of all forms of transportation.



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#### **SOCIETY OF BLACK ENGINEERS (SBE)**

The society at Vaughn College is a chapter of the National Society of Black Engineers, one of the largest student-governed organizations in the United States. SBE's mission is to increase the number of culturally responsible Black engineers who excel academically, succeed professionally, and impact their community positively. SBE works to support engineering students through the national society's leadership development offerings and mentoring opportunities. SBE works to raise awareness of internship and career opportunities in the field of engineering, and to foster community among Vaughn engineering students and alumni.

#### **THE SOCIETY OF WOMEN ENGINEERS**

This society addresses the needs of women attending college and considering the aerospace industry. Membership is not limited to women, however. Any student who is interested in the advancement of women in the aviation industry can join. For more information, contact the office of student affairs.

#### **WIN CLUB**

The Women who Inspire and Nurture (WIN) Club is a student association on campus that serves as a unification and empowerment body for women students. Thought provoking conversation, leadership and development activities, mentoring and life coaching facilitation methods are used to unite women on campus as they support each other's academic, professional and personal journey of becoming whole and resilient beings. The association is comprised of ambassadors who typically serve as mentor/guides and are

upper class women, and members, who are freshman and/or transfer students to Vaughn College.

#### **WOMEN IN AVIATION – INTERNATIONAL (WIA-I)**

The College became a chartered chapter of Women in Aviation – International in 1996. WIA-I is designed to help women integrate into what has been traditionally a male-oriented field. The group addresses the needs of women attending the College and entering the aerospace field.

Membership in Vaughn's chapter of WIA-I is open to women and men.

### **FRATERNITY**

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#### **ALPHA ETA RHO**

Alpha Eta Rho is the international collegiate fraternity for students in the field of aviation. The fraternity serves as a contact between the aviation industry and educational institutions to foster, promote and mentor today's college students toward successful careers in the aviation field.

### **ATHLETICS**

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The sports program at the College is specifically tailored to the needs of the student body. It is designed to help the students develop leadership skills and competitiveness, while enhancing a healthy spirit of fair play and team unity.

Vaughn College has eight varsity sports that compete at the collegiate level. These include men's and women's cross-country, men's soccer, men's and women's basketball, men's and women's tennis and baseball. The men's and women's teams compete in the Hudson Valley Intercollegiate Athletic Conference as well as the United States Collegiate Athletic Association. In conference play, Vaughn competes against the following colleges: Yeshiva, Berkeley, St. Joseph's-Brooklyn, Sarah Lawrence, College of New Rochelle, and other Division III institutions. For further information, please contact the office of athletics, fitness and wellness at 718.429.6600, ext. 314.

#### **FITNESS, INTRAMURAL AND RECREATIONAL SPORTS**

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The intramural program is determined by student interest. Any students who wish to participate should inquire in the office of athletics, fitness and wellness. The intramural and recreational programs are diverse and vary from 3-on-3 basketball to bowling.

The student fitness center is a brand new state-



of-the-art facility containing cardiovascular equipment, free weights and Nautilus equipment.

Students who wish to utilize the fitness center must provide a doctor's note certifying that they had a recent physical exam and are medically cleared to use the center. All users must abide by the posted guidelines for effective and safe use of the center.

## **NEW YORK CITY**

The cultural, spiritual and physical needs of the students are met by the outstanding facilities of New York City. Houses of worship for all faiths are available. Various museums focus on arts, natural history, science and world civilization.

## **NON-DISCRIMINATION/HARASSMENT**

Vaughn College is committed to maintaining an environment in its educational programs and activities that is free from discrimination, harassment, or retaliation. The College expects that all of its members will treat each other fairly and equitably, and without regard to differences. These standards encompass applicants, students, faculty, staff, visitors and vendors, and are to be observed by all members of the community with respect to all of the College's operations.

Consistent with this commitment, it is the policy of Vaughn College not to tolerate unlawful discrimination or harassment based on age, race, color, creed, ethnic origin, religion, national origin, citizenship status, sex, gender, gender expression, sexual orientation, marital or partnership status, pregnancy, disability, military or veteran status, predisposing genetic characteristics, domestic violence status, or for any other legally protected basis. Such behavior is unlawful and undermines the character and purpose of Vaughn College.

This policy is not intended to abridge academic freedom, the open expression of ideas, or the College's educational mission, and does not extend to statements or written materials that are relevant and appropriately related to the subject matter of courses.

Any individual or group that feels there may have been discrimination or harassment is strongly encouraged to ask for guidance or file a complaint. The College will take steps to achieve a prompt and equitable resolution of any complaints. The College has appointed the Associate Vice President of Student Affairs and the Associate Vice President of Human Resources as officials responsible for coordinating efforts with regard to nondiscrimina-

tion, including Title IX (gender discrimination and sexual misconduct), and Section 504 and the Americans with Disabilities Act (disability discrimination).

For more information about this policy, or to learn about the procedure for addressing violations of this policy, you may contact:

Jerima DeWese, AVP of Student Affairs at 718 429-6600 extension 237 or [Jerima.dewese@vaughn.edu](mailto:Jerima.dewese@vaughn.edu)

Mary Durkin, AVP of Human Resources at 718 429-6600 extension 105 or [mary.durkin@vaughn.edu](mailto:mary.durkin@vaughn.edu)

The College's policies on harassment and discrimination are further defined in the Student Handbook, which is distributed to all students and is also available through the office of student affairs and on line.

## **BIAS-RELATED CRIMES AND INCIDENTS**

New York State law requires that Vaughn College inform students about the Hate Crimes Prevention Act of 2000 (Article 485) (the "Act") and how hate crimes, also known as bias-related crimes, can be prevented on campus. The College strives to bring together students from all types of cultural backgrounds, and to provide an environment in which they might interact and learn from one another. To help promote an environment free of hateful acts, the College has policies and procedures to report and prevent bias-related crimes and incidents. Copies of this policy and the New York law are available from the Office of Student Affairs for all current and incoming students and employees, as well as prospective students and employees upon request and online at [www.vaughn.edu](http://www.vaughn.edu)

### **BIAS-RELATED CRIMES**

Under the New York State Hate Crimes Act of 2000, a person commits a hate crime when he or she commits a specified offense in the Act and either:

(a) Intentionally selects the person against whom the offense is committed or intended to be committed in whole or in substantial part because of a belief or perception regarding the race, color, national origin, ancestry, gender, religion, religious practice, age, disability or sexual orientation of a person, regardless of whether the belief or perception is correct; or

(b) Intentionally commits the act or acts constituting the offense in whole or in substantial part because of a belief or perception regarding the race, color, national origin, ancestry, gender, religion, religious practice, age, disability or sexual orientation of a person, regardless of whether the belief or perception is correct.

### **BIAS-RELATED INCIDENTS**

Are acts or behavior that are a violation of the Student Code of Conduct and reasonably believed to be motivated by a person's real or perceived race, color, creed, religion, age, sex, gender, national origin, marital or parental status, sexual orientation, citizenship status, veteran status, disability, or any other category prohibited by law.

### **REPORTING PROCEDURES**

Individuals are encouraged to report all incidents immediately to Campus Security, 718 429-6600 extension 130 and the Associate Vice President of Student Affairs, Jerima DeWese, 718 429-6600 extension 237.

Non-felony hate/bias crime incidents can be adjudicated through the Campus Policies and Regulations Governing Conduct as outlined in the Student Handbook. The victim can bring a complaint either through the College judicial system or in criminal courts, or in both.

The College will make every reasonable attempt to help any individual who is a victim of an alleged bias-related crime or incident to change his or her academic or resident situations, if so requested.

### **SANCTIONS FOR BIAS-RELATED CRIMES**

The College takes bias-related crimes and incidents very seriously. Criminal sanctions may include prison and/or fines depending on the underlying offense. Sanctions imposed by the College may include suspension, termination, and/or expulsion from the College.

### **COUNSELING AND SUPPORT**

Counseling and personal support are available to victims of bias-related crimes and incidents through the Office of Student Affairs. This service is confidential and free.

Contact information 718 429-6600 extension 350.

The Office of Student Affairs may also serve as a resource and referral agent to students in the event of a bias-related incident. Contact information 718 429-6600 extensions 237, 302 and 170.

### **EDUCATION AND PREVENTION**

In this multicultural and multiethnic campus community, the College hopes that through educational

programs we can help individuals understand and combat negative attitudes, discrimination and intolerance. Students are informed about bias-related crime prevention measures through various programs that include classroom instruction, new student orientation, and seminars and workshops sponsored by academic support services and student affairs. Information regarding these programs is posted widely on campus, and students are encouraged to attend.

Vaughn's policies on bias-related crime are fully described in the student handbook, which is distributed to all students and is available through the Office of Student Affairs or at [www.vaughn.edu](http://www.vaughn.edu).

### **STUDENT DISCIPLINE**

Students at Vaughn College shall conduct themselves in a manner compatible with the College's mission as an educational institution. Vaughn seeks to foster the transmission of knowledge and the pursuit of truth. Freedom of inquiry and expression are indispensable components in the attainment of these goals. An assertion of rights or freedoms, however, is balanced by a readiness to assume concomitant responsibilities. Students are expected to recognize the institution's academic purposes, respect the rights of others in the community and accept responsibility and accountability for their own behavior.

Vaughn has developed standards of conduct—published in the student handbook—to govern student behavior, policies and procedures, and to deal with specific conduct issues (computer use, drugs and alcohol, sexual assaults); a judicial code that sets forth the procedures for adjudicating charges of misconduct; a general grievance procedure; and the applicable sanctions for misconduct. Students whose conduct is not in accord with the College's standards of conduct shall be subject to disciplinary measures. Students are required to familiarize themselves with these policies, rules and regulations. The office of student affairs is responsible for all student disciplinary issues.

### **STUDENT HEALTH INSURANCE**

Vaughn College would like for all eligible students to have health insurance coverage because inadequate or no coverage could cause a financial burden. Health insurance is required for all residential students and internship students. Group health plans often do not cover full-time student dependents once they have reached a specific age, or when they are married. In addition, students who have declared financial independence for financial aid may not be covered. If you have been enrolled

under another policy, please check the policy to make sure you are still eligible for coverage. We also urge students who are covered by an HMO, PPO or similar policy to determine the extent of coverage available while living in New York.

Students in need of health insurance should review all available healthcare plan options carefully. Be sure to obtain a full description of coverage including costs, benefits, exclusions, reductions, limitations, and the terms under which the coverage of each plan may remain in effect. There are many resources in New York to assist individuals looking for low-cost health plans. You may wish to contact WellCare at 1.800.288.5441 or Flor.Gomez@well-care.com.

## **STUDENT HANDBOOK**

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The student handbook is a publication of the office of student affairs. The handbook provides current information regarding college policies, procedures and activities. Students are responsible for reading and abiding by the policies outlined in the handbook.

## **ON-CAMPUS HOUSING**

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Our three-story residence hall provides accommodations for 200 students. Residents live in either a two-person or three-person suite with a semi-private bath. The residence hall has laundry, study and kitchen facilities in a common area within the building. Residence hall rooms are supplied with a bed, dresser, closet, desk, chair and wastebasket for each individual student. Each room is also equipped with phone and cable TV hookup and computer port.

Students interested in living in the residence hall can visit the website at [www.vaughn.edu](http://www.vaughn.edu) or contact the office of residence life at 718.429.6600, ext. 316.

## **OFF-CAMPUS HOUSING**

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The office of student affairs can assist students in finding off-campus housing upon request. For a list of local landlords with available rooms and apartments, please contact the office of student affairs at 718.429.6600 ext. 170.

## **FOOD SERVICES**

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Vaughn's cafeteria serves breakfast, lunch, dinner and snacks for students and staff. Please see the cafeteria for hours of operation. Students with questions or concerns about food services should

contact the office of student affairs.

## **INTERNATIONAL STUDENT ADVISING**

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The director of international student services and the associate director of admissions are available to assist international students in their personal and social adjustments to the College and American culture. Each new international student is expected to contact the international student adviser as soon as possible after his/her arrival. The adviser is available in the Office of Admissions and is the essential source of information regarding immigration. The adviser should also be consulted for help with any special problems that international students may encounter.

## **LOCKER RENTAL**

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A limited number of lockers are available for rent from the office of student affairs. Students have the option to rent per semester or per academic year. Fees are \$15 per semester, \$20 for both the fall and spring semesters, \$15 for both summer sessions and \$35 for the entire year. For more information, contact the office of student services at 718.429.6600, ext. 201.

## **CRIME STATISTICS**

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In accordance with regulations that require the disclosure of crime statistics, the College makes available all such records upon request. For more information, contact the office of student affairs.

The Advisory Committee on Campus Safety will provide upon request all campus crime statistics as reported to the United States Department of Education. For more information, please contact the associate vice president of student affairs. You can also visit the Office of Postsecondary Education online at <http://ope.ed.gov/security>. It is the website address for crime statistics filed annually by all colleges with the U.S. Department of Education.

## **CAREER SERVICES**

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Vaughn College of Aeronautics and Technology considers the career development of every student a primary responsibility. Career counseling is conducted through the office of career services, department chairs and the faculty.

Throughout its history, the College has assisted its students and graduates in securing meaningful internships and employment that relates to the majors offered. Leaders in aviation, aerospace, manufacturing, engineering design, public utilities,

local state and federal government, to name a few, seek the College's graduates.

The office of career services provides ongoing industry updates for both continuing and graduating students. The College is also committed to lifelong learning and advisement on career development issues for its alumni.

Employment opportunities, job prospects, company literature and information are provided through this office as well. Additional information and assistance can be obtained in the College library.

Career development guidance and assistance are always available to students. Contact Philip Meade, executive director of career services, at 718.429.6600, ext. 189 or email him at [philip.meade@vaughn.edu](mailto:philip.meade@vaughn.edu).

## **CAREER OBJECTIVES AND ACADEMIC PROGRAMS**

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The College prepares graduates who are suited to meet important technical and managerial needs in many industries. By offering degrees with separate objectives, Vaughn College enables students to design their program around practices and techniques currently being used in industry. Depending on academic studies and personal goals, alumni are employed in a wide range of fields and organizations. Here is a representative cross section of companies that have recently hired Vaughn graduates:

AAR Technical Service Center  
Aircraft Service International Group  
AFCO/AvPORTS  
Alaska Airlines/Horizon Air  
Allied Signal  
American Airlines  
Aviation Avionics and Instruments Corp.  
Bendix  
B. F. Goodrich  
Bombardier Transportation  
Cessna Citation  
Chautauqua Airlines  
CitationShares  
Columbia Helicopter  
Consolidated Edison  
Continental Airlines  
Copa Airlines  
Covenant Security  
Cummins  
Delta Air Lines  
Dynair  
Eastman Kodak  
Embraer

Emirates  
Empire Aero  
Endeavor Air  
Federal Aviation Administration  
General Dynamics  
General Electric  
Gulfstream  
International Business Machines (IBM)  
jetBlue Airways  
JFK International Arrivals Terminal  
Keyspan  
Lockheed Martin  
Marotta Scientific Controls, Inc.  
Mesaba Airlines  
Metropolitan Transportation Authority (MTA)  
Northrop Grumman Corporation  
Northwest Airlink  
Orion Power Systems  
Pall Corporation  
Panasonic Avionics  
Panorama Flight Services  
Pinnacle Airlines  
Pratt and Whitney  
Rockwell Collins  
Sikorsky Helicopters  
Southern Air  
Southwest Airlines  
The Boeing Company  
The Port Authority of New York and New Jersey  
United Airlines  
United Technologies  
USAirways  
Xerox Corporation

## **ONLINE CAREER SERVICES**

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The College has launched a new career services online interface, enabling students and alumni to research full- and part-time job opportunities as well as internships. Participation is free, and students can search for job opportunities anytime, manage resumes and cover letters, and maintain a searchable profile for potential employers. Students can register at [www.myinterfase.com/vaughn/student](http://www.myinterfase.com/vaughn/student).

## **INTERSHIPS AND COOPERATIVE EDUCATION**

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Vaughn offers and encourages students to take advantage of many available internship and cooperative education opportunities. Industry leaders and major companies partner with the College to provide this unique learning experience. The office of career services and department chairs assist students



in selecting appropriate internship or cooperative education programs. Students can learn about available opportunities through the office of career services, faculty advisers and various bulletin boards that are placed throughout the campus. As a federally designated Hispanic-Serving Institution, Vaughn College participates with the Hispanic Association of Colleges and Universities to place students in internships with various federal agencies year-round.

Listed below are some of the active internships and cooperatives:

Air Canada  
 Alstate Maintenance  
 American Airlines  
 American Eagle  
 The Boeing Company  
 Cummins  
 Delta Air Lines  
 Disney College Program  
 Enterprise Holdings  
 Emirates  
 Expeditors International  
 Federal Aviation Administration (FAA)  
 Federal Express  
 General Electric  
 Global Air Dispatch  
 Hispanic Association of Colleges and Universities (HACU)  
 INROADS  
 jetBlue Airways  
 Jet Propulsion Laboratory  
 JFK International Arrivals Terminal  
 Lockheed Martin  
 Metropolitan Transportation Authority (MTA)  
 National Aeronautics and Space Administration (NASA)  
 NAVSEA  
 Northrop Grumman Corporation  
 ORBIS  
 Panasonic Avionics Corp.  
 Passur  
 Pinnacle Airlines  
 The Port Authority of New York and New Jersey  
 RCM Technologies  
 Republic Airport  
 Revista Aerea, Latin Aviation Magazine  
 Sikorsky  
 Stewart Airport  
 Swissport  
 United Airlines  
 Virgin Atlantic  
 Westchester County Airport

## CONTINUING EDUCATION AND PROFESSIONAL DEVELOPMENT

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Vaughn encourages its students to continue their education after graduation. Through the office of career services, students and alumni receive counseling when seeking a graduate degree as well as continuing education and professional development. Graduate schools are invited to campus each spring to provide students with information.

## ALUMNI AFFAIRS

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Vaughn College of Aeronautics and Technology alumni are active in the United States and around the world.

The nationwide network of alumni has proven invaluable as a resource for the College in its lifelong commitment to current students and all graduates. Their financial gifts contribute to scholarships, faculty development and equipment for the College's laboratories.

Timely announcements about alumni affairs and events can be found on the website ([www.vaughn.edu](http://www.vaughn.edu)); in the alumni newsletter; in the alumni publication, Vaughn College Magazine; or on social media, including Facebook, Twitter and LinkedIn. All graduates from every era of this institution—whether the Casey Jones School of Aeronautics, the Academy of Aeronautics, the College of Aeronautics or Vaughn College—are encouraged to attend alumni meetings and events.

For more information about upcoming activities, to organize reunion events or to reconnect with your alma mater or make a contribution, contact Neil Gouveia, director of alumni affairs, at 718.429.6600, ext. 112 or email [neil.gouveia@vaughn.edu](mailto:neil.gouveia@vaughn.edu).

## MILITARY CAREERS

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Graduation from the College with a bachelor's degree meets the educational requirements for officer candidate training leading to commissioned status. Associate degree graduates who are interested in military technical assignments are eligible for the extensive advanced technical training programs for enlisted personnel in all branches of the service.

Many alumni have chosen satisfying military careers as flying officers, flight engineers, navigators and aircraft observers, as well as aviation and aerospace technicians on the basis of their education at the College.



### **AIR FORCE RESERVE OFFICER TRAINING COURSE (AFROTC)**

Vaughn College of Aeronautics and Technology students in the bachelor's and associate in applied science degree programs can enroll in the Air Force Reserve Officer Training Course (AFROTC). The AFROTC curriculum is designed to prepare college students for initial active-duty assignments as Air Force commissioned officers. The General Military Course (GMC) is a two-year program taken during enrollment for the associate in applied science degree. The course covers two main themes: the development of air power and the contemporary Air Force in the context of U.S. military organizations. The GMC consists of a one-hour class and a one-hour military training period per week. During the GMC, there is no military service obligation as the student seeks to qualify for admission into the Professional Officers Corps (POC)..

Admission into the POC follows enrollment into a bachelor of science degree program. Degree requirements are completed at Vaughn College, and the AFROTC sessions are held at Manhattan College in Riverdale. Vaughn College students are eligible to compete for Air Force ROTC scholarships.

### **ARMY RESERVE OFFICERS' TRAINING COURSE (AROTC)**

Army Reserve Officers' Training Corps (AROTC) is open to Vaughn College students, freshmen through senior year, and may lead to a commission as a second lieutenant in the US Army. Army ROTC enhances a student's education by providing unique leadership and management training, along with practical experience. The curriculum is designed to be challenging, educational and flexible enough to allow students to meet scholastic and personal goals. Classes include: physical training, leadership development, map reading, land navigation, rappelling, rifle marksmanship, patrolling, military tactics, drill and ceremonies, military history, ethics and military law.

The program is divided into two major courses—basic and advanced. The basic course is given during the freshman and sophomore years, and the advanced course during the junior and senior years. All students must attend, and complete an ROTC Advanced Camp, between their junior and senior years. Military classes will be given either at St. John's University in Queens, NY, or Hofstra University in Hempstead, NY. All academic classes will be held at Vaughn.

Vaughn College students can compete for Army ROTC scholarships.

## CERTIFICATE PROGRAMS

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### MAINTENANCE CERTIFICATE

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Graduates from any of the aviation maintenance or maintenance management degree programs must qualify for certification to take the Federal Aviation Administration (FAA) examinations. FAA certification requires the following:

1. All degree requirements for graduation must be satisfied, with the exception of the 30-credit residency requirement.
2. A minimum grade of “C” in every airframe and powerplant subject, and a minimum GPA of 2.0 in the airframe and powerplant certification curriculum are required.
3. Satisfaction of all financial obligations.
4. Certification preparation seminars are to be completed satisfactorily. All general and airframe courses must be completed by the end of the semester in which AA02 is taken. With PP02, an airframe certificate and airframe license must have already been issued as a requirement for PP02, and the candidate must have completed all powerplant courses by the end of the semester in which PP02 is taken. Failure of any prerequisite of AA02 or PP02 requires a retake of AA02 or PP02.
5. Students receiving advanced transfer credit in the technical courses must complete a minimum of 23 certification units to receive the Aviation Training Institute’s certification. For airframe certification only, a minimum of 23 certification units in general and airframe courses is required; for powerplant certification only, a minimum of 23 certification units of general and powerplant courses is required. For both airframe and powerplant certification, a minimum of 23 certification units of airframe or powerplant, or a combination, of both is required.

#### Special Students

Students who have the FAA airman authorization rating/certificate can enroll in AA02 Certification Preparation—airframe course and/or PP02 Certification Preparation—powerplant course. Students receiving this special permission will not be certified by Vaughn College of Aeronautics and Technology. They will be auditing the course(s),

receiving an “AU” grade code. Students auditing AA02/PP02 will be charged a seminar fee that will cover the examination fee if taken at Vaughn. Refer to “Certification Fees” on page 25.

Students who want to be certified by Vaughn College will have to follow certification requirements listed above.

#### Transfers

Transfer students from similar Part 147 institutions (as defined by the FAA) must complete certification requirements listed above.

### FEDERAL COMMUNICATIONS COMMISSION (FCC) LICENSE

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Graduates from the associate in applied science and bachelor of science electronic engineering technology in avionics programs must pass a qualifying exam in course AVT250 for the General Radio Telephone Operator License from the Federal Communications Commission to graduate. To be eligible to take the FCC written exam, you must be a legal resident or eligible for employment in the US.

Any student possessing a valid General Radio Telephone Operator License prior to the start of the final semester in each of these programs can receive advanced-standing credit for AVT250. The license must be presented to the coordinator of the electronic technology department during the first week of the semester for approval. A license obtained any time during the semester will not be accepted for credit. Full attendance, along with other class criteria, are required to complete course AVT250.

### FLIGHT CERTIFICATES

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Students enrolled in the aircraft operations or aeronautical sciences degree programs must obtain a minimum grade of “C” in FLT110, FLT120, FLT221, FLT 330, FLT360, FLT470 and FLT471, and pass the relevant laboratory sections of each course. Satisfactory completion is necessary to receive a sign-off to take the FAA written examinations for the appropriate FAA certificate or rating sought. FAA ground or written certificates must be completed for each qualification sought. For students enrolling in the aircraft operations bachelor of science program, satisfactory completion with a grade of “C”

or better and with a passing grade on the FAA practical or flight test must also be completed for each rating sought. For this program, academic and FAA flight qualifications are addressed in FLT111, FLT121, FLT331, FLT361 and FLT472, must be satisfactorily completed.

## **ONLINE MANAGEMENT CERTIFICATE PROGRAMS**

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Credits earned from these programs are transferable to degree programs at the College.

These certificate programs are an investment in your professional career as you progress into middle- and upper-management positions. They enable busy, career-minded people to further their education and knowledge anywhere, at any time, to fit into a busy, professional life.

Course prerequisites are not required for the certificate program.

## **AIRLINE MANAGEMENT CERTIFICATE PROGRAM**

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### **Four-course sequence – 12 credits**

#### **ALM362 – Airline Management – 3 credits**

This course covers the complex area of operational techniques and problems confronting the air travel industry today. Market research, passenger trends, route studies, on-time operations, emergency measures and safety considerations will be studied.

#### **ALM240 – Airline Economics and Finance – 3 credits**

This course examines issues related to the function of airlines from an economic perspective. They include government regulation, supply, demand, cost and pricing, and air cargo. The course also provides an introduction to the basic principles of insurance and risk.

#### **FLT241 – Aviation Safety – 3 credits**

This course introduces students to concepts of aviation safety, as well as practical methods of maintaining safety. Students will gain factual and conceptual knowledge to conduct current and future aviation operations in a professional and safe manner. The role of safety programs in management is also discussed.

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#### **MGT470 – Industry and Labor Relations – 3 credits**

This course outlines the behavioral aspects of the management and collective bargaining agency

interface. Emphasis is placed on arbitration, mediation, conciliation and fact finding. A computer simulation exercise is also included in this course.

## **AIRPORT MANAGEMENT CERTIFICATE PROGRAM**

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### **Four-course sequence – 12 credits**

#### **APM241 – AIRPORT ADMINISTRATION – 3 credits**

An introduction to the complexities of airport planning and its importance to achieve a successful airport operation. Content includes a study of the duties and responsibilities of the airport manager, with emphasis on the Federal Air Regulations governing the operation and administration of commercial airports within the United States.

#### **APM485 Airport Development and Management – 3 credits**

This course builds upon APM241 Airport Administration, and further develops the skills and understanding of operation, management and conceptual design of airports of any size. Content focuses on practical application of airport manager skills and includes educational tours of operating airports. Relations with tenants, public officials and patrons will be emphasized through writing and public-speaking skills.

#### **ATM452 – Aviation Transport Regulations – 3 credits**

This course offers an introduction to Federal Air Regulations (FARs). It provides an in-depth study of FAR Part 107, Part 108, Part 139 and other FARs pertaining to aviation management. It also includes an introduction to other aviation organizations and the international rules as established by the International Civil Aviation Organization (ICAO).

#### **ATM320 – Aviation Law – 3 credits**

This course concentrates on the functions of federal and local regulatory agencies with regard to legislation concerning aviation. Topics include aircraft operation, maintenance, noise and air pollution. Case studies will provide the foundation for discussions.

### ***For more information, contact:***

Ray Axmacher  
Director of Distance Learning  
1.718.429.6600, ext. 215  
ray.axmacher@vaughn.edu

## ACADEMIC DEGREE PROGRAMS

### ARTS AND SCIENCES CORE CURRICULUM

As part of their degree requirements, all students in baccalaureate programs are required to complete a core curriculum in the arts and sciences. This core is derived from the mission of the College, and reflects what the institution believes is important and elemental to students' education and development. For baccalaureate students, the general education core consists of 10 competencies. To fulfill the general education requirements for graduation, approximately half of the total credits must come from general education (for more detail, students should check the curriculum of their specific program). Of these, at least three credits must be applied to each of the 10 competencies. While some courses may satisfy more than one competency, a student may only use a specific course to satisfy a single competency. (For example: PHY120 can satisfy both the Scientific Reasoning and Quantitative reasoning competency; but by taking PHY120, a student may not receive credit for both competencies.) The list of these competencies and courses satisfying these competencies is listed below:

1. Oral Communication
2. Written Communication
3. Critical Thinking
4. Scientific Reasoning
5. Quantitative Reasoning
6. Technical Skills
7. Information Literacy
8. Values
9. Ethics
10. Diverse Perspectives

#### Arts and Sciences Core Curriculum for Bachelor's Degree Students

Oral Communication	Credits
ENG290 Public Speaking	3
Written Communication	
ENG110 English I	3
ENG120 English II	3
ENG240 Technical Writing	3
Critical Thinking	
Any math course of level 115 or higher	

Scientific Reasoning	Credits
Any physics or chemistry course	
Quantitative Reasoning	
ECO225 Economics	3
Any physics course	
Technical Skills	
CSC215 MATLAB	3
CSC111 Visual Basic	3
CSC316 C++	3
Any laboratory science course	
Information Literacy	
ENG120 English II	3
HUM472 Practical Ethics	3
ENG240 Technical Writing	3
Values	
POL254 American Government	3
Ethics	
HUM 472 Practical Ethics	3
Diverse Perspectives	
ENG210 World Literature	3
ENG220 American Literature	3
HUM251 International Studies	3

Students must consult their curriculum sheet to determine the total number of credits required and course flexibility for their program.

#### Arts and Sciences Core Curriculum for Associate Degree Students

As part of their degree requirements, all students in associate programs are required to complete a core curriculum in the arts and sciences. This core is derived from the mission of the College, and reflects what the institution believes is important and elemental to students' education and development. The core curriculum for associate students consists of the following seven basic competencies:

1. Oral Communication
2. Written Communication
3. Critical Thinking
4. Scientific Reasoning
5. Quantitative Reasoning
6. Technical Skills
7. Information Literacy

Students must consult their curriculum sheet to determine the total number of credits required and course flexibility for their program.

## **LEARNING OUTCOMES**

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Vaughn College faculty have determined that there are certain general learning outcomes that each student should attain as a result of acquiring a degree. In addition, each major also has specific goals for its students.

### **GENERAL LEARNING OUTCOMES**

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Students will be able to:

- a) Acquire theoretical and practical knowledge and skills they need to achieve professional success in their chosen fields.
- b) Communicate effectively orally and in writing.
- c) Gain critical thinking and analytical skills.
- d) Function independently and on multidisciplinary teams.
- e) Have the professional and civic values that will enable them to be responsible citizens.
- f) Recognize the need for and possess the ability to pursue lifelong learning.

### **STUDENT LEARNING OUTCOMES IN THE ARTS AND SCIENCES FOR BACCALAUREATE STUDENTS**

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Graduates will have the ability to:

- a) Conduct and troubleshoot physical experiments, analyze and interpret experimental data, and compare experimental data to theoretically expected results.
- b) Effectively use general and specific software and hardware necessary in the analysis of problems in their chosen fields.
- c) Demonstrate professional and ethical responsibility in their chosen careers.
- d) Apply knowledge of mathematics and science to a wide variety of problems relevant to their field of study.
- e) Communicate effectively through oral presentations, writing, graphic communications and the use of computer software.

- f) Have a commitment to lifelong learning and continuous professional development.

### **STUDENT LEARNING OUTCOMES IN THE ARTS AND SCIENCES FOR ASSOCIATE STUDENTS**

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Graduates will have the ability to:

- a) Conduct physical experiments and interpret experimental data.
- b) Use general computer software to develop and analyze data in most all branches of industry.
- c) Demonstrate professional and ethical responsibility in their chosen careers.
- d) Apply a general knowledge of mathematics and science to a variety of industrial problems.
- e) Communicate effectively through writing and graphic communications.
- f) Have a commitment to lifelong learning and continuous professional development.



# ENGINEERING AND ENGINEERING TECHNOLOGY DEGREE PROGRAMS

## MECHANICAL ENGINEERING BACHELOR OF SCIENCE (BS) DEGREE

The BS degree in mechanical engineering is designed to provide our students with both the fundamental knowledge of mechanical engineering and practical, hands-on technical projects which enable them to design engineering components that exhibit precise performance.

Graduates of this program will acquire knowledge in the area of mechanical engineering, computer-aided engineering, computer-aided design, controls theory and the design process to create smart and more functional and adaptable products. In addition to taking courses in basic engineering sciences and application, students in this field are also required to take design courses such as Computer Aided Three-dimensional Interactive Application (CATIA), Patran-Nastran and Matrix Laboratory (MATLAB) to develop components of an engineering system and conduct analysis on these components. Exposure to the design process exists throughout the curriculum in various engineering courses. Ten credit hours of technical elective course work allows students to choose courses to specialize in the area of structural mechanics, thermal science, and robotics. To complete this program, students are required to take a 3 credit hour senior project course, which involves the engineering design of a better and more functional product.

The goals of the engineering and technology department in designing this mechanical engineering program and in keeping with the NSPE distinction, are to provide students with a strong foundation in engineering mechanics, mathematics, computer-aided design and fundamentals of engineering, as well as to provide them with knowledge and experience in analytical, computational, and experimental methods. Students should graduate with the ability to design and evaluate these approaches for use in practical situations.

### PROGRAM OBJECTIVES

Mechanical Engineering program educational objectives are developed in order to satisfy the needs of constituents of the program. The constituents include employers, alumni, and faculty. Attainment of the program educational objectives is enabled when the graduates of the program attain student outcomes by the time of graduation. The program educational objectives are intended to produce versatile engineering graduates who:

- 1) Are successful in their chosen career path. Graduates of this program will be able to obtain positions that require design, analysis, development and implementation of mechanical systems.
- 2) Pursue graduate study and professional education.
- 3) Conduct themselves as responsible members of society through involvement in community and professional engagement.

### STUDENT OUTCOMES

The Mechanical Engineering program presents information and learning experience to students. Student outcomes enable the attainment of the program educational objectives by the graduates of the program. The student outcomes will be assessed to determine the extent to which students are attaining them by the time of graduation. The results of the assessment process will be evaluated to determine if actions to improve the program should be taken.

As a direct measure, student work in courses offered through the program is assessed to determine the degree to which the students are attaining the student outcomes. The following program outcomes (a) through (k), based on the ABET Criteria 3, Student Outcomes have been established as the student outcomes of the mechanical engineering program. These student outcomes are as follows:

- a) Graduates will demonstrate the ability to apply knowledge of mathematics, science and engineering principles to analysis and design.
- b) Graduates will demonstrate the ability to design and conduct experiments, as well as to analyze and interpret data with the use of computer applications current to industry.
- c) Graduates will demonstrate the ability to design and apply creativity in the design of mechanical systems, components and processes.
- d) Graduates will demonstrate the ability to function on multidisciplinary teams.
- e) Graduates will demonstrate the ability to identify, formulate and solve engineering problems
- f) Graduates will demonstrate an understanding of professional and ethical responsibility.
- g) Graduates will demonstrate an ability to communicate effectively the engineering ideas and results both orally and in writing.
- h) Graduates will develop the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context.
- i) Graduates will demonstrate recognition of the need for quality, continuous improvement and an ability to engage in life-long learning.
- j) Graduates will have a respect for diversity and knowledge of contemporary professional, societal and global issues
- k) Graduates will demonstrate an appropriate mastery of the knowledge, techniques, skills, and modern tools used in the mechanical engineering field.

## ENGINEERING — (BS) MECHANICAL ENGINEERING CURRICULUM

		Lecture Credits	Lab Credits
<b>Seminars</b>			
FYI101	First Year Initiatives	3	0
CD101	Career Development Seminar	0	0
	<b>Total Credits</b>	<b>3</b>	<b>0</b>
<b>Arts and Science Courses</b>			
ENG110	English I	3	0
ENG120	English II	3	0
ENG240	Technical Writing	3	0
ENG290	Public Speaking	3	0
	Choose a course from competency 5*	3	0
	Choose a course from competency 6*	3	0
	Choose a course from competency 7*	3	0
	Choose a course from competencies 5, 6, or 7*	3	0
	<b>Total Credits</b>	<b>24</b>	<b>0</b>
<b>Math and Sciences Courses</b>			
CSC215	MATLAB	3	0
CHE230	Chemistry	3	0
MAT125	Calculus I for Engineers	3	0
MAT225	Calculus II for Engineers	3	0
MAT330	Calculus III	3	0
MAT325	Differential Equations for Engineers	3	0
MAT356	Probability and Statistics	3	0
MAT410	Linear Algebra	3	0
PHY125	Engineering Physics I	3	0
PHY125 Lab	Engineering Physics I	0	1
PHY225	Engineering Physics II	3	0
PHY225 Lab	Engineering Physics II	0	1
PHY335	Modern Physics	3	0
	<b>Total Credits</b>	<b>33</b>	<b>2</b>
<b>Mechanical Engineering Courses</b>			
CDE117	Computer-aided Design I	1	0
CDE117 Lab	Computer-aided Design I Lab	0	1
CDE385	Intro to CATIA	1	0
CDE385 Lab	Intro to CATIA Lab	0	1
CDE486	CATIA II	1	0
CDE486 Lab	CATIA II Lab	0	1
EGR380	Engineering Project Management	3	0
EGR460	Engineering Economics	3	0
ELE117	DC/AC Circuits	2	0
ELE117 Lab	DC/AC Circuits	0	1
ELE350	Control Systems	2	0
ELE350 Lab	Control Systems	0	1
MCE101	Introduction to Robotics	0	1
MEE115	Engineering Mechanics I (Statistics)	3	0
MEE210	Thermodynamics	3	0
MEE220	Mechanics of Materials	4	0
MEE215	Engineering Mechanics II	3	0
MEE230	Mechanical Testing and Evaluation Lab	0	1
MEE235	Material Science and Failure Analysis	3	0

\*Refer to page 62 for a list of competencies and associated courses.

## ENGINEERING — (BS) MECHANICAL ENGINEERING CURRICULUM

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		Lecture Credits	Lab Credits
MEE340	Computational Methods with MATLAB	3	0
MEE345	Fluid Mechanics	3	0
MEE350	Mechanical Vibrations	3	0
MEE355	Reliability Method in Structural Mechanics	3	0
MEE365	Elements of Machine Design and Vibration Analysis	3	0
MEE370	Finite Elements Analysis with MATLAB	3	0
MEE375	Thermo Fluid Lab	0	1
MEE409	Senior Degree Project	3	0
MEE440	Heat Transfer	3	0
	Technical Elective	8	2
	<b>Total Credits</b>	<b>61</b>	<b>10</b>

### Total Lecture and Lab Credits

133

### Technical Electives

Students in this program, in addition to 3 credit hours of a capstone design project are required to take 10 credit hours of open electives to give students freedom to concentrate in one of the following areas:

- Solid Mechanics and Structural Analysis
- Thermal Science and Aerodynamics
- Computer Aided Design & Computer Aided Engineering
- Control System and Robotics

Select two – 2 credits elective design course from the following:

MCE420	Meachantronics II	1	1
EGR489	Patran-Nastran FEA Structural Analysis	1	1
MEE450	Aircraft Configuration Design	1	1

Select two – 3 credits elective design course from the following:

MEE260	Aerodynamics	3	0
MEE360	Propulsion Power for Aircraft and Rocket Engines	3	0
MEE445	Heating, Ventilation and Air Conditioning – HVAC	3	0
MEE455	Aircraft Structural Analysis	3	0
MEE390	Introduction to Composite Materials	3	0

## MECHATRONIC ENGINEERING BACHELOR OF SCIENCE (BS) DEGREE

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The bachelor of science in engineering focuses on mechatronic engineering, which is the study of the synergistic use of mechanical, electrical and computer engineering. Mechatronic engineering produces “smart” products from the Mars Rover to a desktop printer.

The rigorous program has several objectives: It provides a link between academia and industry; and provides students with the knowledge of analytical, computational and experimental methods. Graduates will have the ability to evaluate these methods for use in practical situations.

Core courses include a strong foundation in mechanical engineering and electronics. Students then choose electives in engineering analysis, design and computer programming. In the last two semesters of the program, students will work on design projects related to mechatronics components development.

The program instills a broad-based understanding of the fundamental technical subject areas associated with mechatronics engineering so students are ready for immediate employment in industry or graduate study.

This program is accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, Md., 21202-4012, telephone 410.347.7700.

### PROGRAM OBJECTIVES

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Program educational objectives for the BS in mechatronics engineering were developed such that to achieve student learning outcomes that describe what students are expected to know and be able to do by the time of graduation as well as to prepare them for the post-graduation activities. These program objectives are intended to produce versatile engineering graduates who:

- 1) Will be successful and excel in their chosen career. Mechatronics graduates will be able to pursue positions that require design, development, analysis, control, and automation of mechatronics systems and processes.
- 2) Will be able to pursue graduate program, professional and/or continued education.
- 3) Will be responsible members of society through involvement in community and professional engagement.

### STUDENT LEARNING OUTCOMES

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The BS in Mechatronics Engineering program will provide knowledge and experience to students to deal with challenging engineering problems and enable them to design “intelligent” engineering components and systems. The graduates of this program should be able to demonstrate specific knowledge and skills prior to graduation. These abilities coincide with ABET criterion 3 (a) through (k) requirements as presented below:

- a) Graduates will demonstrate an ability to apply knowledge of mathematics, science, and engineering principles to analysis and design.
- b) Graduates will demonstrate an ability to design and conduct experiments, as well as to analyze and interpret data in with the use of computer applications current to industry.
- c) Graduates will demonstrate an ability to design and apply creativity in the design of Mechatronics systems, components and process.
- d) Graduates will demonstrate an ability to function on multidisciplinary teams.
- e) Graduates will demonstrate an ability to identify, formulate, and solve engineering problems.
- f) Graduates will demonstrate an understanding of professional and ethical responsibility.
- g) Graduates will demonstrate an ability to communicate effectively the engineering ideas and results both orally and in writing.
- h) Graduates will develop the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- i) Graduates will demonstrate recognition of the need for quality, continuous improvement, and an ability to engage in life-long learning.
- j) Graduates will have a respect for diversity and knowledge of contemporary professional, societal and global issues.
- k) Graduates will demonstrate an appropriate mastery of the knowledge, techniques, skills, and modern tools used in the Mechatronics engineering field.

## MECHATRONIC ENGINEERING — (BS) CURRICULUM

		Lecture Credits	Lab Credits
<b>Seminars</b>			
FYI101	First Year Initiatives	3	0
CD101	Career Development Seminar	0	0
	<b>Total Credits</b>	<b>3</b>	<b>0</b>
<b>Liberal Arts Courses</b>			
ENG110	English I	3	0
ENG120	English II	3	0
ENG240	Technical Writing	3	0
ENG290	Public Speaking	3	0
	Choose a course from competency 5*	3	0
	Choose a course from competency 6*	3	0
	Choose a course from competency 7*	3	0
	<b>Total Credits</b>	<b>21</b>	<b>0</b>
<b>Math and Sciences Courses</b>			
CHE230	Chemistry	3	0
MAT330	Calculus III for Engineers	3	0
CSC316	C++ Java Programming	3	0
MAT125	Calculus I for Engineers	3	0
MAT225	Calculus II for Engineers	3	0
MAT325	Differential Equations for Engineers	3	0
MAT356	Probability and Statistics	3	0
PHY125	Engineering Physics	3	1
PHY225	Physics II for Engineers	3	1
PHY335	Modern Physics	3	0
MAT410	Linear Algebra	3	0
	<b>Total Credits</b>	<b>33</b>	<b>2</b>
<b>Mechatronic Engineering Courses</b>			
CDE117	Computer-aided Design I	1	1
CDE385	Introduction to CATIA I	1	1
MCE409	Senior Capstone Degree Project	3	0
EGR230	Mechanical Testing and Evaluation Lab	0	1
EGR380	Engineering Project Management	3	0
EGR460	Engineering Economics	3	0
ELE117	DC/AC Circuits	2	1
ELE220	Electronic Circuits	2	1
ELE230	Digital Systems Design	2	1
ELE326	Microprocessors	2	1
ELE350	Control Systems I	2	1
MCE310	Fundamentals of Mechatronic Engineering	1	1
MCE410	Mechatronics I	1	1
MCE420	Mechatronics II	1	1
MEE115	Engineering Mechanics I (Statics)	3	0
MEE210	Thermodynamics	3	0
MEE215	Engineering Mechanics II (Dynamics)	3	0
MEE220	Strength of Materials	4	0
MEE440	Heat Transfer	3	0
EGR375	Thermo Fluid Lab	0	1
MCE101	Introduction to Robotics	0	1
MCE401	Pre-capstone Project	1	0

\*Refer to page 62 for a list of competencies and associated courses.



## MECHATRONIC ENGINEERING — (BS) CURRICULUM

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		Lecture Credits	Lab Credits
MEE235	Material Science and Failure Analysis	3	0
MEE340	Computational Methods in Engineering	3	0
MEE345	Fluid Mechanics	3	0
MEE355	Reliability Method in Structural Mechanics	3	0
MEE365	Elements of Machine Design	3	0
MEE370	Finite Element Analysis	3	0
	Technical Elective	2	1
	<b>Total Credits</b>	<b>61</b>	<b>14</b>

**Total Lecture and Lab Credits**

**134**

### Technical Electives

Any of the following courses can be taken as a technical elective toward a bachelor of science degree in the mechatronic engineering program.

ELE462	Advanced Digital Design	2	1
ELE450	Data Acquisition and Applied Control System Design	2	1

## **AERONAUTICAL ENGINEERING TECHNOLOGY ASSOCIATE IN APPLIED SCIENCE (AAS) DEGREE**

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The AAS aeronautical engineering technology program stresses the fundamentals of engineering technology and science. This major has been designed primarily as a transfer program, although graduates will be prepared to enter industry as engineering technologists.

Courses in this two-year degree program can be applied to a four-year curriculum in engineering technology.

Graduates will have the skills necessary to obtain entry-level positions within engineering technology and related fields or continue their education toward a bachelor's degree.

After this program is completed, students can either continue on in the College's bachelor of science degree programs in engineering or engineering technology (by taking some additional courses), or transfer to other colleges or universities. The College has articulation agreements with New York Institute of Technology and with Manhattan College.

In addition, this program is accredited by the Engineering Technology Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, Md. 21202-4012, telephone 410.347.7700.

### **PROGRAM OBJECTIVES**

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Aeronautical Engineering Technology AAS program educational objectives are developed in order to achieve student learning outcomes that address what students are expected to know and be able to do by the completion of their degree program, and prepare them for the postgraduation activities. These program objectives are intended to produce versatile engineering technology graduates who:

- 1) Will be able to obtain a career as a technician in aeromechanical engineering technology field. Graduates will be successful in their pursuit of technician positions that require basic design, development and manufacturing of aeronautical and mechanical systems.
- 2) Will be able to pursue professional and/or continued education.
- 3) Will conduct themselves as responsible members of society and understand the need for continuous professional improvement.

### **STUDENT OUTCOMES**

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The Aeronautical Engineering Technology AAS program presents information and learning experience to students. These form the basis for particular abilities that students should be able to demonstrate prior to graduation. These abilities coincide with ABET criterion 3 (a) through (k) requirements as presented below:

- a) Graduates will demonstrate an ability to apply the knowledge, techniques, skills, and modern tools used in aeronautical/mechanical engineering technology program.
- b) Graduates will demonstrate an ability to apply knowledge of mathematics, science, engineering and technology to aeronautical engineering technology problems.
- c) Graduates will demonstrate an ability to conduct standard tests and measurements; to conduct, analyze and interpret experiments.
- d) Graduates will demonstrate an ability to design basic systems and components of an aeronautical system.
- e) Graduates, through group projects and oral presentation, will gain the broad education necessary to function effectively as a member of a team.
- f) Graduates will demonstrate an ability to identify, formulate and solve aeronautical engineering technology problems.
- g) Graduates will be able to communicate effectively through oral presentation, writing and graphic communication.
- h) Graduates will demonstrate an understanding of the need for and an ability to engage in self-directed continuing professional development.
- i) Graduates will demonstrate an understanding of professional and ethical responsibility, including a respect for diversity.
- j) Graduates will develop the broad education necessary to understand the impact of engineering technology solutions in a societal and global context.
- k) Graduates will demonstrate recognition of the need for quality, timeliness and continuous improvement.

## AAS Aeronautical Engineering Technology

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		Lecture Credits	Lab Credits
<b>Seminars</b>			
FYI101	First Year Initiatives	3	0
CD101	Career Development Seminar	0	0
<b>Total Credits</b>		<b>3</b>	<b>0</b>
<b>Liberal Arts Courses</b>			
ENG110	English I	3	0
ENG120	English II	3	0
ENG290	Public Speaking	3	0
HIS141	Global Civilization	3	0
POL254	American Government	3	0
<b>Total Credits</b>		<b>15</b>	<b>0</b>
<b>Math and Sciences Courses</b>			
MAT115	Pre-calculus	4	0
MAT120	Calculus I	4	0
MAT220	Calculus II	3	0
PHY120	Physics I	3	1
PHY220	Physics II	3	1
<b>Total Credits</b>		<b>17</b>	<b>2</b>
<b>Aeronautical Engineering Courses</b>			
CDE117	Computer-aided Design I	1	0
CDE117 Lab	Computer-aided Design I Lab	0	1
CDE385	Introduction CATIA I	1	0
CDE385 Lab	Introduction to CATIA Lab	0	1
DP209	Degree Project	1	0
EGR230	Mechanical Testing and Evaluation Lab	0	1
EGR115	Engineering Mechanics I	3	0
EGR210	Thermodynamics	3	0
EGR215	Engineering Mechanics II	3	0
EGR220	Strength of Materials I	3	0
EGR235	Material Science and Composites	3	0
EGR340	Computational Methods in Engineering	3	0
EGR345	Fluid Mechanics	3	0
<b>Total Credits</b>		<b>24</b>	<b>3</b>
<b>Total Lecture and Lab Credits</b>		<b>64</b>	

## **ANIMATION AND DIGITAL TECHNOLOGIES ASSOCIATE IN APPLIED SCIENCE (AAS) DEGREE**

---

The AAS in animation and digital technologies degree has been developed to provide students proficiency in computer-aided design, graphic imaging and animation. In addition to basic college courses, students will be taught to develop 2-D and 3-D images that can be combined to create still renderings of any style or complexity and whose sequential succession can be used to form animated sequences on videotape.

Graduates of this program will find their computer skills applicable to a multitude of computer and related fields, including architecture, construction, graphic design and advertising.

Graduates can also pursue one of the College's bachelor of science degree programs or transfer to bachelor of science degrees in architectural or graphic design at other institutions. The College has articulation agreements with New York Institute of Technology and with Manhattan College.

### **PROGRAM OBJECTIVES**

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Graduates will:

- 1) Develop solid foundation skills in the field of computer-aided graphic design, 3-D animation for video games, motion graphics and interactive media.
- 2) Gain proficiency with modern 2-D/3-D computer graphics tools and related design methodologies. Students will attain skills required for internships, entry-level positions or higher-education opportunities such as a BS degree in animation and digital technologies.
- 3) Empower themselves with self-promotion, communication and career networking skills relevant to the computer graphics industry.
- 4) Experience career success in a global marketplace through discipline, creativity and a lifetime of self-improvement.

### **PROGRAM OUTCOMES**

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The program outcomes for the AAS in animation and digital technologies concentration are as follows.

- a) Graduates will be able to apply their knowledge of design, graphics and 3-D animation principles toward the development of a portfolio and demo reel.
- b) Graduates will learn relevant technology and market trends as used in the computer graphics industry.
- c) Graduates will learn teamwork and creative project management through group critique, oral and multimedia presentations.
- d) Graduates will develop critical thinking, creative problem solving and time management skills.
- e) Graduates will leverage 3-D modeling knowledge to develop product visualization and rapid prototyping skills.
- f) Graduates will be positioned as computer graphics generalists with a specialization in 3-D animation for video games. Students will display a broad knowledge of 3-D modeling, texturing and rigging for both hard-surface and character models.
- g) Graduates will understand the ethical standards and professional responsibilities in their field.

## AAS Animation and Digital Technologies Curriculum

		Lecture Credits	Lab Credits
<b>Seminars</b>			
FYI101	First Year Initiatives	3	0
CD101	Career Development Seminar	0	0
	<b>Total Credits</b>	<b>3</b>	<b>0</b>
<b>Liberal Arts Courses</b>			
ENG110	English I	3	0
ENG120	English II	3	0
HIS141	Global Civilization	3	0
POL254	American Government	3	0
	Liberal Arts Elective	3	0
	<b>Total Credits</b>	<b>15</b>	<b>0</b>
<b>Math and Sciences Courses</b>			
MAT115	Pre-calculus	4	0
MAT120	Calculus I	4	0
PHY120	Physics I	3	1
PHY220	Physics II	3	1
	Math/Science Elective	3	0
	<b>Total Credits</b>	<b>17</b>	<b>2</b>
<b>Animation and Digital Technologies Courses</b>			
DSG110	Design, Drawing and Aesthetics	2	0
DSG110 Lab	Design, Drawing and Aesthetics Lab	0	1
DSG245	2-D Computer Graphics/Photoshop for the Web	2	0
DSG245 Lab	2-D Computer Graphics/Photoshop Lab	0	1
DSG246	Image Ready-Photoshop	2	0
DSG246 Lab	Image Ready-Photoshop Lab	0	1
DSG250	3-D Animation/Intro to 3-D Studio Max	2	0
DSG250 Lab	3-D Animation/Intro to 3-D Studio Max Lab	0	1
DSG260	Advanced Animation/3-D Studio Max	2	0
DSG260 Lab	Advanced Animation/3-D Studio Max Lab	0	1
DSG261	3-D Graphics Modeling/MAYA	2	0
DSG261 Lab	3-D Graphics Modeling/MAYA Lab	0	1
DSG262	3-D Animation (Special Effects)	2	0
DSG262 Lab	3-D Animation (Special Effects) Lab	0	1
DSG263	Digital Video Editing	2	0
DSG263 Lab	Digital Video Editing Lab	0	1
DSG265	Introduction to Interactive Media	2	0
DSG265 Lab	Introduction to Interactive Media Lab	0	1
DSG267	Animation for Video Games/Blender	2	0
DSG267 Lab	Animation for Video Games/Blender Lab	0	1
	Technical Elective	3	0
	<b>Total Credits</b>	<b>23</b>	<b>10</b>
<b>Total Lecture and Lab Credits</b>		<b>70</b>	

### Technical Electives

Any of the following courses can be taken as a technical elective toward the AAS degree in animation and digital technologies:

DSG247	Storyboarding and Character Design
DSG264	Audio Editing for Video & Multimedia
DSG269	Advanced Maya Modeling & Animation
DSG270	Character Animation for Video Games
DSG272	ZBrush Digital Sculpting



## **ELECTRONIC ENGINEERING TECHNOLOGY — AVIONICS ASSOCIATE IN APPLIED SCIENCE (AAS) DEGREE**

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This degree program provides the necessary technical foundation to prepare graduates for entry-level employment in the field of electronic technology and related technologies, as well as the ability to transfer to baccalaureate-level technology programs.

Avionics encompasses electronic communication, navigation, surveillance and flight control systems. These systems have become complex, integrated and computer-controlled. The need for avionics technicians to service and maintain this equipment is growing accordingly. This two-year program develops these skills, starting from fundamentals and proceeding to the study of aircraft electronic systems. Graduates are prepared for positions with aircraft maintenance or manufacturing organizations. In addition, graduates of this program will find career opportunities in the field of general electronics, system construction and product design. Students are encouraged to pursue the College's bachelor of science in electronic engineering technology degree program, which provides in-depth application of theory and physical science to advanced avionics systems.

Graduates of the program are also prepared for the Federal Communications Commission (FCC) General Radiotelephone Operator License examination. Graduates must pass a qualifying exam for the FCC License to graduate.

In addition, this program is accredited by the Engineering Technology Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, Md., 21202-4012, telephone 410.347.7700.

Upon completion of curriculum requirements, students in this program are eligible to participate in Technical Operations - Collegiate Training Initiative program. See TO-CTI section.

### **PROGRAM OBJECTIVES**

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Electronics Engineering Technology-Avionics AAS program educational objectives are developed in order to help achieve student learning outcomes that address what students are expected to know and be able to do by the completion of their degree program, and prepare them for the postgraduation activities. These

program objectives are intended to produce versatile engineering technology graduates who:

- 1) Will be able to obtain careers as avionics/electronics technicians. AAS avionics graduates will be able to pursue positions that require avionics/electronics design, development, installation, maintenance and repair.
- 2) Will be able to pursue FCC license, professional and/or continued education.
- 3) Will conduct themselves as responsible members of society and understand need for continuous professional improvement.

### **STUDENT OUTCOMES**

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The Electronics Engineering Technology-Avionics AAS program presents information and learning experience to students. These form the basis for particular abilities that students should be able to demonstrate prior to graduation. These abilities coincide with ABET criterion 3 (a) through (k) requirements as presented below:

- a) Graduates will demonstrate an ability to apply the knowledge, techniques, skills, and modern tools used in electronics engineering technology-avionics programs.
- b) Graduates will demonstrate an ability to apply knowledge of mathematics, science, engineering and technology to avionics engineering technology problems.
- c) Graduates will demonstrate an ability to conduct standard tests and measurements; to conduct, analyze and interpret experiments.
- d) Graduates will demonstrate an ability to design basic systems and components of an avionics system.
- e) Graduates, through group projects and oral presentation, will gain the broad education necessary to function effectively as a member of a technical team.
- f) Graduates will demonstrate an ability to identify, formulate and solve avionics engineering technology problems.
- g) Graduates will be able to communicate effectively through oral presentation, writing and graphic communication.

- h) Graduates will demonstrate an understanding of the need for and an ability to engage in self-directed continuing professional development.
- i) Graduates will demonstrate an understanding of professional and ethical responsibility, including a respect for diversity.
- j) Graduates will develop the broad education necessary to understand the impact of engineering technology solutions in a societal and global context.
- k) Graduates will demonstrate recognition of the need for quality, timeliness, and continuous improvement.

## AAS ELECTRONIC ENGINEERING TECHNOLOGY - AVIONICS

		Lecture Credits	Lab Credits
<b>Seminars</b>			
FYI101	First Year Initiatives	3	0
CD101	Career Development Seminar	0	0
	<b>Total Credits</b>	<b>3</b>	<b>0</b>
<b>Liberal Arts and Sciences Courses</b>			
ENG110	English I	3	0
ENG120	English II	3	0
ENG290	Public Speaking	3	0
HIS141	Global Civilization II	3	0
POL254	American Government	3	0
	<b>Total Credits</b>	<b>15</b>	<b>0</b>
<b>Math and Sciences Courses</b>			
MAT115	Pre-calculus	4	0
MAT120	Calculus I	4	0
PHY120	College Physics I	3	1
PHY220	College Physics II	3	1
	<b>Total Credits</b>	<b>14</b>	<b>2</b>
<b>Electronic Engineering Technology Courses</b>			
AVT235	Aircraft Navigation Systems	2	0
AVT235 Lab	Aircraft Navigation Systems Lab	0	1
AVT240	Aircraft Pulse Systems	2	0
AVT240 Lab	Aircraft Pulse Systems Lab	0	1
AVT245	Radar Systems	2	0
AVT245 Lab	Radar Systems Lab	0	1
AVT250	FCC License Review	0	0
CDE117	Engineering Graphics with Computer-aided Design/Solid Edge	1	0
CDE117 Lab	Engineering Graphics Lab	0	1
EET115	Electrical Circuits I	2	0
EET115 Lab	Electrical Circuits I Lab	0	1
EET116	Electrical Circuits II	2	0
EET116 Lab	Electrical Circuits II Lab	0	1
EET125	Digital Electronics	2	0
EET125 Lab	Digital Electronics Lab	0	1
EET210	Electronic Laboratory Practices	1	0
EET210 Lab	Electronic Lab Practices Lab	0	1
EET220	Electronic Circuits	2	0
EET220 Lab	Electronic Circuits Lab	0	1
EET230	Principles of Communications Systems	2	0
EET230 Lab	Principles of Communications Systems Lab	0	1
	Technical Elective	3	0
	<b>Total Credits</b>	<b>21</b>	<b>10</b>

**Total Lecture and Lab Credits**

**65**

## **ELECTRONIC ENGINEERING TECHNOLOGY — AVIONICS CONCENTRATION BACHELOR OF SCIENCE (BS) DEGREE**

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The major course component of the electronics technology BS degree with a concentration in avionics has been developed to provide students proficiency in sophisticated aviation electronics systems found on board commercial, corporate and private aircraft. The program will stress science and technology as they apply to today's modern fleet of aircraft.

This degree program provides in-depth application of theory and physical sciences to advanced avionics systems found on today's modern fleet of aircraft. The curriculum includes the avionics courses of the AAS avionics degree program, which applies mathematics and science to electrical circuits, digital electronics, aircraft communication/navigation systems, and aircraft pulse/radar systems. The additional avionics courses of the BS degree cover aircraft power/distribution systems, flight control/management systems, electronics flight instrument systems, long-range navigation systems integrated avionics systems, and traffic alert and avoidance systems. Avionics installation and maintenance, reliability and maintainability, as well as integrated logistics support courses, are also covered as part of this degree program.

The Lab View program Graphical Programming for Instrumentation is used for the avionics laboratory/exercises wherever applicable.

Students must complete an avionics degree project (see AET409 in the course descriptions) in order to graduate. The project must be approved by the department chair.

Graduates of the program are also prepared for the Federal Communications Commission (FCC) General Radiotelephone Operator License examination. Graduates must pass a qualifying exam for the FCC License to graduate.

In addition, this program is accredited by the Engineering Technology Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, Md., 21202-4012, telephone 410.347.7700.

Upon completion of curriculum requirements, students in this program are eligible to participate in Technical Operations - Collegiate Training Initiative program. See TO-CTI section.

### **PROGRAM OBJECTIVES**

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Electronics Engineering Technology-Avionics BS program educational objectives are developed so as to achieve student learning outcomes that address what students are expected to know and be able to do by the completion of their degree program, and prepare them for the postgraduation activities. These program objectives are intended to produce versatile engineering technology graduates who:

- 1) Will be successful in their chosen avionics/electronics career. Graduates of this program will be able to pursue positions that require avionics/electronics design, development, implementation, and manufacturing of avionics systems and processes.
- 2) Will be able to pursue FCC license, professional education, graduate study and/or continued education.
- 3) Will conduct themselves as responsible members of society through involvement in community and professional engagement.

### **STUDENT OUTCOMES**

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The Electronics Engineering Technology-Avionics program presents information and learning experience to students. These form the basis for particular abilities that students should be able to demonstrate prior to graduation. These abilities coincide with ABET criterion 3 (a) through (k) requirements and are presented below:

- a) Graduates will demonstrate an ability to apply the knowledge, techniques, skills and modern tools used in electronics engineering technology-avionics program.
- b) Graduates will demonstrate an ability to apply knowledge of mathematics, science, engineering and technology to avionics engineering technology problems.
- c) Graduates will demonstrate an ability to conduct standard tests and measurements; to conduct, analyze and interpret experiments, and to apply experimental results to improve processes.
- d) Graduates will demonstrate an ability to design systems, components or processes of electronics/avionics systems.

- e) Graduates, through group projects and oral presentation, will gain the broad education necessary to function effectively as a member of a technical team.
- f) Graduates will demonstrate an ability to identify, formulate and solve electronics engineering technology problems.
- g) Graduates will be able to communicate effectively through oral presentation, writing and graphic communication.
- h) Graduates will demonstrate an understanding of the need for and an ability to engage in self-directed continuing professional development.
- i) Graduates will demonstrate an understanding of professional and ethical responsibility, including a respect for diversity.
- j) Graduates will develop the broad education necessary to understand the impact of engineering technology solutions in a societal and global context.
- k) Graduates will demonstrate recognition of the need for quality, timeliness and continuous improvement.

## BS ELECTRONIC ENGINEERING TECHNOLOGY — AVIONICS CURRICULUM

		Lecture Credits	Lab Credits
<b>Seminars</b>			
FYI101	First Year Initiatives	3	0
CD101	Career Development Seminar	0	0
	<b>Total Credits</b>	<b>3</b>	<b>0</b>
<b>Liberal Arts Courses</b>			
ECO255	Economics	3	0
ENG110	English I	3	0
ENG120	English II	3	0
ENG240	Technical Writing	3	0
ENG290	Public Speaking	3	0
	Choose a course from competency 5*	3	0
	Choose a course from competency 6*	3	0
	Choose a course from competency 7*	3	0
	Choose two courses from competencies 5, 6, or 7*	6	0
	<b>Total Credits</b>	<b>30</b>	<b>0</b>
<b>Math and Sciences Courses</b>			
MAT115	Pre-calculus	4	0
MAT120	Calculus I	4	0
MAT220	Calculus II	3	0
MAT356	Probability and Statistics	3	0
MAT445	Differential Equations	3	0
PHY120	College Physics I	3	1
PHY220	College Physics II	3	1
	Choose a course from competencies 3, 7, 8, or 9*	3	0
	<b>Total Credit</b>	<b>26</b>	<b>2</b>
<b>Electronic Engineering Technology Courses</b>			
AVT235	Aircraft Navigation Systems	2	0
AVT235 Lab	Aircraft Navigation Systems Lab	0	1
AVT240	Aircraft Pulse Systems	2	0
AVT240 Lab	Aircraft Pulse Systems Lab	0	1

## BS ELECTRONIC ENGINEERING TECHNOLOGY — AVIONICS CURRICULUM

		Lecture Credits	Lab Credits
<b>Electronic Engineering Technology Courses</b>			
AVT245	Radar Systems	2	0
AVT245 Lab	Radar Systems Lab	0	1
AVT250	FCC License Review	0	0
AVT346	Aircraft Power and Distribution Systems	2	0
AVT346 Lab	Aircraft Power and Distribution Systems Lab	0	1
AVT347	Flight Control Systems	2	0
AVT347 Lab	Flight Control Systems Lab	0	1
AVT349	Electronic Flight Instrument Systems	2	0
AVT349 Lab	Electronic Flight Instrument Systems Lab	0	1
AVT351	Advanced Navigation Systems	2	0
AVT351 Lab	Advanced Navigation Systems Lab	0	1
AVT352	Integrated Avionics Systems	3	0
AVT453	Traffic Alert/Collision Avoidance Systems	2	0
AVT453 Lab	Traffic Alert/Collision Avoidance Systems Lab	0	1
AVT454	Avionics Installation/Maintenance	2	0
AVT454 Lab	Avionics Installation/Maintenance Lab	0	1
AVT455	Avionics Reliability/Maintainability	3	0
AVT456	Avionics Integrated Logistics Support	3	0
AET409	Degree Project	3	0
CDE117	Computer-aided Design I	1	0
CDE117 Lab	Computer-aided Design I Lab	0	1
EET115	Electrical Circuits I	2	0
EET115 Lab	Electrical Circuits I Lab	0	1
EET116	Electrical Circuits II	2	0
EET116 Lab	Electrical Circuits II Lab	0	1
EET125	Digital Electronics	2	0
EET125 Lab	Digital Electronics Lab	0	1
EET210	Electronic Laboratory Practices	1	0
EET210 Lab	Electronic Laboratory Practices Lab	0	1
EET220	Electronic Circuits	2	0
EET220 Lab	Electronic Circuits Lab	0	1
EET230	Principles of Communications Systems	2	0
EET230 Lab	Principles of Communications Systems Lab	0	1
EET326	Microprocessors	2	0
EET326 Lab	Microprocessors Lab	0	1
EGR380	Engineering Project Management	3	0
	Technical Elective	2	1
	<b>Total Credits</b>	<b>49</b>	<b>18</b>

**Total Lecture and Lab Credits**

**128**

### Technical Electives

**78** The following courses can be taken as a technical elective toward a bachelor of science degree in the EET-Avionics concentration program.

CED386	Wiring and Harnessing	2	1
EET325	PLC Programming	2	1



## **ELECTRONIC ENGINEERING TECHNOLOGY — ELECTRONICS BACHELOR OF SCIENCE (BS) DEGREE**

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Innovation in the ever-growing field of electronics depends more than ever on properly educated and trained individuals who can conceive, design, develop and produce solutions to modern technical problems. Accordingly, the Electronic Engineering Technology program prepares graduates with technical and managerial skills necessary to enter careers as technologists in such industries as aerospace, computers, communications, medical, chemical and energy supply.

Students are offered training in a wide range of areas such as control systems, microprocessors, communications systems, computer applications and computer-aided design. Moreover, the program emphasizes written and oral communication skills as well as modern methods of industrial administration and supervision.

This program is accredited by the Engineering Technology Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, Md., 21202-4012, telephone 410.347.7700.

### **PROGRAM OBJECTIVES**

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Electronic Engineering Technology program educational objectives are developed in order to achieve student learning outcomes that address what students are expected to know and be able to do by the completion of their degree program, and prepare them for the postgraduation activities. These program objectives are intended to produce versatile engineering technology graduates who:

- 1) Will be successful in their chosen careers.  
Graduates of this program will be able to obtain positions that require design, development, implementation and manufacturing of electronic systems and processes.
- 2) Will be able to pursue graduate study, professional and/or continued education.
- 3) Will conduct themselves as responsible members of society through involvement in community and professional engagement.

### **STUDENT OUTCOMES**

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The Electronic Engineering Technology program presents information and learning experiences to students. These form the basis for particular abilities that students should be able to demonstrate prior to graduation. These abilities coincide with ABET criterion 3 (a) through (k) requirements as presented below:

- a) Graduates will demonstrate an ability to apply the knowledge, techniques, skills, and modern tools used in electronics engineering technology program.
- b) Graduates will demonstrate an ability to apply knowledge of mathematics, science and engineering principles to analysis and design.
- c) Graduates will demonstrate an ability to conduct standard tests and measurements; to conduct, analyze and interpret experiments, and to apply experimental results to improve processes.
- d) Graduates will demonstrate an ability to design systems, components or processes of electronics systems.
- e) Graduates, through group projects and oral presentation, will gain the broad education necessary to function effectively as a member of a technical team.
- f) Graduates will demonstrate an ability to identify, formulate and solve electronics engineering technology problems.
- g) Graduates will be able to communicate effectively through oral presentation, writing and graphic communication.
- h) Graduates will demonstrate an understanding of the need for and an ability to engage in self-directed continuing professional development.
- i) Graduates will demonstrate an understanding of professional and ethical responsibility, including a respect for diversity.
- j) Graduates will develop the broad education necessary to understand the impact of engineering technology solutions in a societal and global context.
- k) Graduates will demonstrate recognition of the need for quality, timeliness and continuous improvement.

## BS ELECTRONIC ENGINEERING TECHNOLOGY — ELECTRONICS CURRICULUM

		Lecture Credits	Lab Credits
<b>Seminars</b>			
FYI101	First Year Initiatives	3	0
CD101	Career Development Seminar	0	0
	<b>Total Credits</b>	<b>3</b>	<b>0</b>
<b>Liberal Arts Courses</b>			
ENG110	English I	3	0
ENG120	English II	3	0
ENG210	World Literature	3	0
ENG220	American Literature	3	0
ENG240	Technical Writing	3	0
ENG290	Public Speaking	3	0
HIS141	Global Civilization	3	0
HUM472	Practical Ethics	3	0
POL254	American Government	3	0
	Liberal Arts Elective	3	0
	<b>Total Credits</b>	<b>30</b>	<b>0</b>
<b>Math and Sciences Courses</b>			
MAT115	Pre-calculus	4	0
MAT120	Calculus I	4	0
MAT220	Calculus II	3	0
MAT445	Differential Equations	3	0
PHY120	College Physics I	3	1
PHY220	College Physics II	3	1
PHY320	College Physics III	3	0
	Math/Science Electives	6	0
	<b>Total Credits</b>	<b>29</b>	<b>2</b>
<b>Electronic Engineering Technology Courses</b>			
CDE117	Computer-aided Design I	1	0
CDE117 Lab	Computer-aided Design I Lab	0	1
CDE385	CATIA Fundamentals	1	0
CDE385 Lab	CATIA Fundamentals Lab	0	1
CDE386	CATIA for Wiring and Harnessing	2	0
CDE386 Lab	CATIA for Wiring and Harnessing	0	1
EET409	Degree Project	3	0
EET115	Electrical Circuits I	2	0
EET115 Lab	Electrical Circuits I Lab	0	1
EET116	Electrical Circuits II	2	0
EET116 Lab	Electrical Circuits II Lab	0	1
EET125	Digital Electronics	2	0
EET125 Lab	Digital Electronics Lab	0	1
EET210	Electronic Laboratory Practices	1	0
EET210 Lab	Electronic Laboratory Practices Lab	0	1
EET220	Electronic Circuits	2	0
EET220 Lab	Electronic Circuits Lab	0	1
EET230	Principles of Communications Systems	2	0
EET230 Lab	Principles of Communications Systems Lab	0	1
AVT240	Pulse Circuits	2	0
AVT240 Lab	Pulse Circuits Lab	0	1
EET326	Microprocessors	2	0
EET326 Lab	Microprocessors Lab	0	1

## BS ELECTRONIC ENGINEERING TECHNOLOGY — ELECTRONICS CURRICULUM

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		Lecture Credits	Lab Credits
<b>Electronic Engineering Technology Courses</b>			
EET345	Computer Control of Instruments (Lab View Programming)	2	0
EET345 Lab	Computer Control of Instruments (Lab View Programming) Lab	0	1
EET350	Control Systems	2	0
EET350 Lab	Control Systems Lab	0	1
EET355	Advanced Microprocessors and Peripherals	2	0
EET355 Lab	Advanced Microprocessors and Peripherals Lab	0	1
EET475	Reliability and Maintainability	3	0
EGR235	Material Science and Composites	3	0
EGR380	Engineering Project Management	3	0
EGR460	Engineering Economics	3	0
EET445	Principles of Communications Networks	3	0
	Technical Elective	2	1
	<b>Total Credits</b>	<b>45</b>	<b>15</b>

### Technical Electives

The following courses can be taken as a technical elective toward the BS degree in the EET-Electronic concentration program:

AVT245	Radar Systems	2	1
INT401	Internship Course	3	0
EET325	PLC Programming	2	1

<b>Total Lecture and Lab Credits</b>	<b>124</b>
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## **MECHANICAL ENGINEERING TECHNOLOGY BACHELOR OF SCIENCE (BS) DEGREE — AERONAUTICAL AND COMPUTER-AIDED DESIGN OPTIONS**

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The BS degree in mechanical engineering technology has been developed to provide students with a solid foundation in the use of computers in math, science and the graphic arts with application to the mechanical engineering technology field, and to engage students with technical problems and projects that stimulate their critical thinking and build communication and teamwork skills.

Exposure to the design process exists throughout the curriculum in various engineering courses such as Solid Edge, Computer Aided Three-dimensional Interactive Application (CATIA), PATRAN/ NASTRAN, Computational Method in Engineering with MATLAB and a capstone degree project.

The goal is to provide students with the fundamentals of engineering, and the knowledge and experience in analytical, computational and experimental methods as well as an ability to design and evaluate these approaches for use in a given situation. With this in mind, students in the mechanical engineering technology program can choose one of the following two options:

### **1) Aeronautical Option:**

This option strives to provide an in-depth application of engineering technology with a focus on aeronautical engineering principles.

### **2) Computer-aided Design Option:**

This option stresses the fundamentals of engineering with an emphasis on 3-D graphics using CATIA and Solid Edge for the design and analysis of structures.

In addition, this program is accredited by the Engineering Technology Accreditation Commission of (ABET), 111 Market Place, Suite 1050, Baltimore, Md., 21202-4012, telephone 410.347.7700.

## **PROGRAM OBJECTIVES**

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Mechanical Engineering Technology program educational objectives are developed in order to achieve student learning outcomes which address what students are expected to know and be able to do by the completion of their degree program, and prepare them for the postgraduation activities.

These program objectives are intended to produce versatile engineering technology graduates who:

- 1) Will be successful in their chosen career. Graduates of this program will be able to obtain positions that require design, analysis, development and implementation of mechanical systems.
- 2) Will be able to pursue professional education, graduate study and/or continued education.
- 3) Will conduct themselves as responsible members of society through involvement in community and professional engagement.

## **STUDENT OUTCOMES**

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The Mechanical Engineering Technology program presents information and learning experience to students. These form the basis for particular abilities that students should be able to demonstrate prior to graduation. These abilities coincide with ABET criterion 3 (a) through (k) requirements as presented below:

- a) Graduates will demonstrate an ability to apply the knowledge, techniques, skills and modern tools used in the mechanical engineering technology program.
- b) Graduates will demonstrate an ability to apply knowledge of mathematics, science and engineering principles to analysis and design.
- c) Graduates will demonstrate an ability to conduct standard tests and measurements; to conduct, analyze and interpret experiments, and to apply experimental results to improve processes.
- d) Graduates will demonstrate an ability to design systems, components or processes of a mechanical system.
- e) Graduates, through group projects and oral presentation, will gain the broad education necessary to function effectively as a member of a technical team.
- f) Graduates will demonstrate an ability to identify, formulate and solve mechanical engineering technology problems.
- g) Graduates will be able to communicate effectively through oral presentation, writing and graphic communication.
- h) Graduates will demonstrate an understanding of the need for and an ability to engage in self-directed continuing professional development.

- i) Graduates will demonstrate an understanding of professional and ethical responsibility, including a respect for diversity.
- j) Graduates will develop the broad education necessary to understand the impact of engineering technology solutions in a global, economic, environmental and societal context.
- k) Graduates will demonstrate recognition of the need for quality, timeliness and continuous improvement.

## **MECHANICAL ENGINEERING TECHNOLOGY — (BS) AERONAUTICAL AND COMPUTER-AIDED DESIGN CURRICULUM**

		Lecture Credits	Lab Credits
<b>Seminars</b>			
FY1101	First Year Initiatives	3	0
CD101	Career Development Seminar	0	0
	<b>Total Credits</b>	<b>3</b>	<b>0</b>
<b>Arts and Science Courses</b>			
ENG110	English I	3	0
ENG120	English II	3	0
ENG240	Technical Writing	3	0
ENG290	Public Speaking	3	0
	Choose a course from competency 5*	3	0
	Choose a course from competency 6*	3	0
	Choose a course from competency 7*	3	0
	Choose two courses from competencies 5, 6, or 7*	6	0
	<b>Total Credits</b>	<b>27</b>	<b>0</b>
<b>Math and Sciences Courses</b>			
MAT115	Pre-calculus	4	0
MAT120	Calculus I	4	0
MAT220	Calculus II	3	0
MAT445	Differential Equations	3	0
PHY120	College Physics I	3	1
PHY220	College Physics II	3	1
	<b>Total Credits</b>	<b>20</b>	<b>2</b>
<b>Mechanical Engineering Technology Courses</b>			
CDE117	Computer-aided Design I	1	0
CDE117 Lab	Computer-aided Design I Lab	0	1
CDE385	Intro to CATIA	1	0
CDE385 Lab	Intro to CATIA Lab	0	1
CDE480	Computer-aided Design II	1	0
CDE480 Lab	Computer-aided Design II Lab	0	1
CDE486	CATIA II	1	0
CDE486 Lab	CATIA II Lab	0	1
EGR115	Engineering Mechanics	3	0
EGR210	Thermodynamics	3	0
EGR235	Material Science and Composites	3	0
EGR215	Engineering Mechanics II	3	0
EGR220	Strength of Materials I	3	0
EGR225	Strength of Materials II	3	0
EGR260	Aerodynamics I	3	0
EGR340	Computational Methods in Engineering	3	0
EGR345	Fluid Mechanics	3	0
EGR350	Mechanical Vibrations	3	0
EGR365	Elements of Machine Design	3	0
EGR370	Finite Element Analysis	3	0

\*Refer to page 62 for a list of competencies and associated courses.



**MECHANICAL ENGINEERING TECHNOLOGY – (BS)  
AERONAUTICAL OR COMPUTER-AIDED DESIGN CURRICULUM**

EGR375	Thermo-fluid Laboratory	0	1
EGR440	Heat Transfer	3	0
EGR460	Engineering Economics	3	0
EGR489	Patran Nastran Structural Analysis	1	0
EGR489	Patran Nastran Structural Analysis Lab	0	1
EET115	Electrical Circuits	2	1
EGR230	Mechanical Testing and Evaluation Lab	0	1
MET409	Degree Project	3	0
<b>Total Credits</b>		<b>52</b>	<b>8</b>

**Aeronautical Option Courses**

EGR355	Reliability Methods in Structural Mechanics	3	0
EGR360	Aerodynamics II	3	0
EGR380	Engineering Project Management	3	0
EGR455	Aircraft Structural Analysis	3	0
	Technical Elective*	1	1
<b>Total Credits</b>		<b>13</b>	<b>1</b>

		Lecture Credits	Lab Credits
Computer-aided Design (CAD) Option Courses			
CDE487	CAM and Prismatic Machining (CATIA III)	1	1
EGR450	Aircraft Configuration Design	1	1
EGR380	Engineering Project Management	3	0
	Technical Elective	1	1
	Technical Elective*	1	1
<b>Total Credits</b>		<b>7</b>	<b>4</b>

\* The following courses can be taken as a technical elective toward the bachelor of science degree in the mechanical engineering technology program depending on the option you choose.

**Aeronautical Option Technical Elective (choose one)**

CDE375	Computer Graphics and Solid Modeling	1	1
CDE490	Composite Manufacturing Process	1	1
EGR450	Aircraft Configuration Design	1	1
<b>Total Credits Aeronautical Option</b>			<b>126</b>

**CAD Option Technical Elective (choose two)**

CDE375	Computer Graphics and Digital Technology for Engineers	1	1
CDE488	CATIA Finite Element Analysis Structural Analysis	1	1
CDE490	Composite Manufacturing Process	1	1

**Total Credits CAD Option** **123**

## ENGINEERING AND TECHNOLOGY DEPARTMENT ADVISORY COUNCIL

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CARLO ASARO  
Sikorsky Aircraft Corporation/U.T.C.

THOMAS BAIRD  
Duncan Aviation Aircraft Support Facility

DR. ABDEL BELKHARRAZ  
LaGuardia Community College

MARVIN BLACKMAN  
Wunderlick-Malec

APARICIO CARRANZA  
CUNY-New York City College of Technology

DR. HENDRICK DELCHAM  
LaGuardia Community College

RONALD DIAZ  
Horizon Engineering Associates LLP

VINICIO FELIZ  
Boeing Corporation

MENELIK GOODEN  
Sikorsky Aircraft Corporation/U.T.C.

MAX GROSS  
Sci Max Technologies/The Composite  
Prototyping Center

OLUWASEYI E. JAMES  
Sikorsky Aircraft Corporation/U.T.C.

MICHAEL A. JOSEPH II  
Corning Incorporated

SHAMIN KHAN  
Consolidated Edison Company of New York

DOUGLAS KOUBEK  
Northrop Grumman (Retired)

SHIVA LALL  
Federal Aviation Administration (FAA)

TOMASZ LOMECKI  
Sikorsky Aircraft Corporation/U.T.C.

DR. YVES NGABONZIZA  
LaGuardia Community College

JOHN PAVON '02  
Pavon Manufacturing Group

DIOGENES RAMOS  
Federal Aviation Administration (FAA)

AYRA RANASINGH  
Micro Merchant Systems

MANNY SANTANA  
Defense Contract Management Agency

OLIVER SCHEEL  
U.S. Didactic

RAJDEEP SINGH  
Sikorsky Aircraft Corporation

RAUL TELLES  
Consolidated Edison Company of New York

JOSE ULLOA  
RCM Technologies

## AVIATION DEGREE PROGRAMS

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### THE MISSION OF THE VAUGHN COLLEGE AVIATION PROGRAM

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The mission of the Vaughn College Aviation Program is to produce motivated, professional aviators who will serve the industry and public as trusted researchers, developers and operators of the aviation system.

### AVIATION PROGRAM GOALS

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1. Be the leading transportation safety research and learning provider
2. Build upon Vaughn Aviation's role as the premier academic center in the New York region for developing aviation experts capable of serving in varied technical and leadership roles in the global aviation industry
3. Be the center for international aeronautical research and learning

### AERONAUTICAL SCIENCES BACHELOR OF SCIENCE (BS) DEGREE

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This degree (BAS) has been developed to provide academic studies similar to those offered in the Aircraft Operations Bachelor of Science (BAO) Degree, but without the requirement to complete the flying portion under the Vaughn College partnership with a FAA certified Part 141 flight school. In other words, Vaughn will still provide the Part 141 certified ground training, but the student who wishes to pursue any flight certificates would be free to do so without Vaughn requirements. This also means that the student taking this degree program (BAS) would not be eligible for any relief under the RATP program from the minimum flying hours required for an Airline Transport Pilot certificate, which is currently 1500 hours.

Pilot candidates would take the BAS program if, for example, they are:

1. Students who wish to pursue actual flight training during their college studies, but want to do it on their own time, with their own financial resources, or,
2. Students who were accepted to a military flight training and commissioning program, and who will be trained as pilots by the military, or,
3. Students who, at any point in their BAO program, decide to stop flying, but who pursue an aviation degree would transfer from BAO to BAS. Credits earned under the BAO degree can easily be

transferred into the BAS program and the student can seamlessly continue to graduation.

Since the BAS degree contains no flying requirements, the Flight Review Course series (FLT111, FLT121, FLT331, FLT361 and FLT472) does not apply to this degree. Students may substitute appropriate elective courses to achieve the required credits for graduation. Students will take the flight courses, must accomplish the associated labs under the BAS degree, and must complete the appropriate FAA exams and simulator instruction associated with the flying courses (FLT110, FLT120, FLT330, FLT 360 and FLT471).

### PROGRAM OBJECTIVES

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Graduates will:

Acquire the skills to obtain entry-level positions in the aeronautical sciences or aircraft operations fields.

### STUDENT LEARNING OUTCOMES

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The aircraft operations program learning outcomes are as follows. Graduates will be able to:

- a. Apply learning in mathematics, science, and applied sciences to aviation-related disciplines;
- b. Analyze and interpret aeronautical data;
- c. Work effectively on crews, and multi-disciplinary and diverse teams;
- d. Make professional and ethical decisions;
- e. Communicate effectively using both written and oral skills;
- f. Know that an aviator is a student for life, and pursue the desired knowledge relentlessly;
- g. Assess contemporary issues in aviation, and in any related fields of interest;
- h. Research, assimilate and display proficiency in the techniques, skills and technology of aeronautics;
- i. Assess the national and international aviation environment;
- j. Apply pertinent knowledge in identifying and solving problems;
- k. Apply knowledge of business sustainability to aviation issues.

## AERONAUTICAL SCIENCES (BS) CURRICULUM

		Lecture Credits	Lab Credits
<b>Seminars</b>			
FYI101	First Year Initiatives	3	0
CD101	Career Development Seminar	0	0
	<b>Total Credits</b>	<b>3</b>	<b>0</b>
<b>Liberal Arts Courses</b>			
ECO255	Principles of Economics	3	0
ENG110	English I	3	0
ENG120	English II	3	0
ENG240	Technical Writing	3	0
ENG290	Public Speaking	3	0
	Choose a course from competency 5*	3	0
	Choose a course from competency 6*	3	0
	Choose a course from competency 7*	3	0
	Choose three courses from competencies 5, 6, or 7*	9	0
	<b>Total Credits</b>	<b>36</b>	<b>0</b>
<b>Math and Sciences Courses</b>			
MAT115	Pre-calculus	4	0
MAT120	Calculus I	4	0
MAT356	Probability and Statistics	3	0
PHY120**	Physics I	3	1
PHY220**	Physics II	3	1
	Choose three courses from competencies 3, 8, 9, or 10*	9	0
	<b>Total Credits</b>	<b>26</b>	<b>2</b>
<b>Aircraft Operations Courses</b>			
FLT110**	General Aeronautics and Simulator Lab	4	0
FLT120**	Intermediate Aeronautics and Simulator Lab	4	0
FLT221**	Intermediate Aeronautics Simulator	2	0
FLT230**/ATC220	Aviation Weather/ATC Weather	3	0
FLT240**	Advanced Aircraft Systems	3	0
FLT241**	Aviation Safety	3	0
FLT330**	Advanced Aeronautics	3	0
FLT470**	Certified Flight Instructor Aeronautics	3	0
FLT471**	Certified Flight Instructor Fundamentals of Teaching	3	0
	Technical Electives (Flight and/or Management)	30	0
	<b>Total Credits</b>	<b>58</b>	<b>6</b>
<b>Total Lecture and Lab Credits</b>		<b>122</b>	

\*Refer to page 62 for a list of competencies and associated courses.

\*\*Course is available for RATP credit.

## AIRCRAFT OPERATIONS (AAS) DEGREE

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The content of the aircraft operations major combines the theory and the practical application that are needed to begin a career as a commercial pilot. The primary objective is to prepare the graduate for an entry-level flight operations position in the aviation industry and aviation-related government agencies. This program is intended for students with minimal or no flight time.

All students must receive financial requirements counseling by the College's admissions office prior to being accepted into the program and taking practical flight training. Entry into this program is competitive, with a limited number of seats available.

It is required that students obtain a minimum of a Class III medical certificate from a Federal Aviation Administration examiner prior to undertaking this program and taking practical flight training.

The technical content of this program is based on standards required by the FAA. Fully FAA-qualified faculty will carry out flight simulator training and pilot ground school as part of the courses for which college credit is granted. In addition, FAA-certified pilots must meet Transportation Security Administration (TSA) requirements.

In order to advance through the program, students must obtain a minimum of a "C" in FLT110, FLT120, FLT221 and FLT330. A sign-off will be given to take the FAA written examinations for the appropriate FAA certificate or rating sought in each class.

Some flight (FLT) classes have very specific prerequisites that must be met prior to registration, including the passing of specific FAA written exams prior to the start of the course. There will be no exceptions.

In certain cases, with department chair approval, students can transfer to the BS in aircraft operations or the BS in aeronautical sciences. To obtain college credit for flight training for FAA pilot qualifications, students must complete the relevant flight training and should substitute the flight review courses of one credit each, FLT111, FLT121 and FLT331, for one flight elective course of three credits.

Students wishing to obtain credit for one or two FAA pilot qualifications must similarly complete the relevant flight review courses for those certificates or ratings.

Students completing this AAS in aircraft operations with some or none of their FAA pilot certi-

icates may transfer to the BS in aircraft operations.

Students wishing to participate in the FAA-approved programs for pilots that include Part 141 Certification of Vaughn coursework, as well as a reduction in hours required to attain an Air Transport Pilot (ATP) license upon graduation must comply with the RATP under the Aircraft Operations Bachelor of Science Degree, page 91.

## PROGRAM OBJECTIVES

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Graduates will:

Have the foundation necessary to pursue a bachelor's degree in aircraft operations or aeronautical sciences. In addition, they will acquire the skills to obtain entry-level positions in the aeronautical sciences or aircraft operations fields.

## STUDENT LEARNING OUTCOMES

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All aviation program student learning outcomes apply to the AAS in Aircraft Operations.



## AIRCRAFT OPERATIONS (AAS) CURRICULUM

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		Lecture Credits	Lab Credits
<b>Seminars</b>			
FYI101	First Year Initiatives	3	0
CD101	Career Development Seminar	0	0
	<b>Total Credits</b>	<b>3</b>	<b>0</b>
<b>Arts and Sciences Courses</b>			
ENG110	English I	3	0
ENG120	English II	3	0
ENG290	Public Speaking	3	0
HIS141	Global Civilization	3	0
POL254	American Government	3	0
	<b>Total Credits</b>	<b>15</b>	<b>0</b>
<b>Math and Sciences Courses</b>			
MAT115	Pre-calculus	4	0
MAT120	Calculus I	4	0
PHY120**	Physics I	3	1
PHY220**	Physics II	3	1
	Math/Science Elective	3	0
	<b>Total Credits</b>	<b>17</b>	<b>2</b>
<b>Aircraft Operations Courses</b>			
FLT110**	General Aeronautics and Simulator Lab	4	0
FLT120**	Intermediate Aeronautics and Simulator Lab	4	0
FLT221**	Intermediate Aeronautics Simulator	2	0
FLT230**	Aviation Weather	3	0
FLT240**	Advanced Aircraft Systems for Pilots	3	0
FLT241**	Aviation Safety	3	0
FLT330**	Advanced Aeronautics	3	0
	Flight Elective	3	0
	Technical Elective	3	0
	<b>Total Credits</b>	<b>28</b>	<b>0</b>
<b>Total Lecture and Lab Credits</b>		<b>65</b>	

\*\*Course is available for RATP credit.

## AIRCRAFT OPERATIONS BACHELOR OF SCIENCE (BS) DEGREE

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This degree has been developed to provide students proficiency in all areas of pilot skills to the certified flight instructor level. Our location, adjacent to world-class LaGuardia Airport, as well as smaller airports suitable for professional pilots, provides a learning environment unsurpassed in terms of activities, resources and personnel.

Students will be able to investigate first-hand the areas of aeronautical technology, air traffic control, human factors, accident investigation, airline procedures, aviation safety and crew resource management. Students will also have the opportunity to receive education and training while beginning to function as professional pilots. This educational background affords students many entry-level positions.

Students can follow a professional pilot option, or they may easily transfer to the airport management or aeronautical sciences programs.

The professional pilot's career is further advanced for those in the BS program as it includes academic training toward a multiengine rating and the Federal Aviation Administration's (FAA) Certified Flight Instructor Certificate. FAA ground qualifications assist students in pursuing a variety of aviation careers, such as ground instructor, flight dispatcher, accident investigator, aviation administrator, aviation researcher or air traffic controller.

Upon entry to this program, it is required that students wishing to complete any flight certificates obtain, at a minimum, an FAA Class III medical certificate. A Class II is required for commercial pilots (FLT330 and above). A Class I medical certificate is recommended for all students who wish to become professional pilots.

Anyone who wants to become an FAA-certified pilot must meet TSA requirements.

To advance through the program, students must obtain a minimum of a "C" in FLT110, FLT120, FLT221, FLT330, FLT360, FLT470 and FLT471. Obtaining a "C" or better is also required for a "sign-off" to take the FAA written examinations for the appropriate FAA certificate or rating sought in each course. It is recommended that the relevant FAA written exam be completed within one month of obtaining an endorsement. Some flight courses have very specific prerequisites that must be met prior to registration. They will require the passing of FAA written examinations prior to the start of the course. There are no exceptions.

In order to obtain college credit for FAA quali-

fications and flight training hours, students must complete the relevant "Flight Review Courses," including FLT111, FLT121, FLT331, FLT361, and FLT472.

Students in this program are eligible to participate in ATC collegiate training program. See AT-CTI section.

### FAA CERTIFICATIONS: PART 141 PILOT SCHOOL AND RESTRICTED AIRLINE TRANSPORT PILOT (RATP)

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The FAA recognizes that Vaughn College flight courses, specifically FLT120, Instrument Flying, and FLT330, Commercial Flying, are being conducted in accordance with 14 CFR Part 141, and therefore are certified by the FAA as a Pilot Ground School. When taken in conjunction with our partner Part 141 flight school, Heritage Flight Academy (HFA), the coursework provided under the BS in Aircraft Operations and the AAS in Aircraft Operations constitute complete Part 141 training. Consequently, Vaughn has also achieved recognition by the FAA for a level of academic instruction which complies with Advisory Circular (AC) 61-139. The College is therefore granted the authority to certify that graduates who have successfully completed specific aviation courses identified in this catalog as (RATP credit) for a restricted privileges Airline Transport Pilot (ATP) Certificate. Bachelor's Degree graduates with 60 or more RATP credits will receive a 500-hour reduction in the ATP required hours, down to 1,000 hours; and Associate Degree graduates with 30 or more RATP credits will receive a 250-hour reduction to 1,250 hours required for an ATP.

### PROGRAM OBJECTIVES

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Graduates will:

Have completed the necessary coursework to pursue graduate studies in aeronautical studies. In addition, they will acquire the skills needed to obtain entry- to mid-level positions in the aircraft operations and professional pilot fields.

### STUDENT LEARNING OUTCOMES

---

The student learning outcomes for the Aircraft Operations BS Degree are the same as those stated earlier for the aviation program.

## AIRCRAFT OPERATIONS (BS) CURRICULUM

		Lecture Credits	Lab Credits
<b>Seminars</b>			
FYI101	First Year Initiatives	3	0
CD101	Career Development Seminar	0	0
	<b>Total Credits</b>	<b>3</b>	<b>0</b>
<b>Liberal Arts Courses</b>			
ECO255	Principles of Economics	3	0
ENG110	English I	3	0
ENG120	English II	3	0
ENG240	Technical Writing	3	0
ENG290	Public Speaking	3	0
	Choose a course from competency 5*	3	0
	Choose a course from competency 6*	3	0
	Choose a course from competency 7*	3	0
	Choose four courses from competencies 5, 6, or 7*	12	0
	<b>Total Credits</b>	<b>36</b>	<b>0</b>
<b>Math and Sciences Courses</b>			
MAT115	Pre-calculus	4	0
MAT120	Calculus I	4	0
MAT356	Probability and Statistics	3	0
PHY120**	Physics I	3	1
PHY220**	Physics II	3	1
	Choose two courses from competencies 3, 8, 9, or 10*	6	0
	<b>Total Credits</b>	<b>23</b>	<b>2</b>
<b>Aircraft Operations Courses</b>			
FLT110**	General Aeronautics and Simulator Lab	4	0
FLT111**	General Aeronautics Flight Review	0	1
FLT120**	Intermediate Aeronautics and Simulator Lab	4	0
FLT121**	Intermediate Aeronautics Flight Review	0	1
FLT221**	Intermediate Aeronautics Simulator	2	0
FLT230**	Aviation Weather	3	0
FLT240**	Advanced Aircraft Systems	3	0
FLT241**	Aviation Safety	3	0
FLT330**	Advanced Aeronautics	3	0
FLT331**	Advanced Aeronautical Flight Review	0	1
FLT360**	Multiengine Aero Ground	2	1
FLT361**	Multiengine Flight Review	0	1
FLT470**	Certified Flight Instructor Aeronautics	3	0
FLT471**	Certified Flight Instructor Fundamentals of Teaching	3	0
FLT472**	CFI Flight Review	0	1
	Technical Electives (Flight and/or Management)	27	0
	<b>Total Credits</b>	<b>57</b>	<b>6</b>
<b>Total Lecture and Lab Credits</b>		<b>127</b>	

## AVIATION MAINTENANCE ASSOCIATE IN APPLIED SCIENCE (AAS) DEGREE

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This course of study contains a balanced combination of theoretical study, practical hands-on laboratory experience and a broad background in mathematics and physics. Maintenance overhaul and modification techniques are included, as well as a sound background in manufacturing practices. Computer applications are also emphasized.

The completion of the program qualifies graduates to enter general, corporate or airline aviation as maintenance and overhaul technicians or to assume positions in aircraft manufacturing or related industries. Thirty college credits are awarded to students who possess the airframe and powerplant certificate or who successfully complete Federal Aviation Administration (FAA) Part 147 at the Aviation Training Institute's approved curriculum or an equivalent military certificate of eligibility. Students holding either an airframe or powerplant certificate, or who have advanced standing toward this certificate, may be eligible to enroll in academic courses while pursuing their airframe and powerplant certification, at the discretion of the department chair.

Students in this program are also eligible to participate in the Air Traffic Control Collegiate Training Initiative (AT-CTI). Please see the AT-CTI section for details.

disciplinary and diverse teams;

d. Make professional and ethical decisions;

e. Communicate effectively using both written and oral skills;

f. Know that an aviator is a student for life, and pursue the desired knowledge relentlessly;

g. Assess contemporary issues in aviation, and in any related fields of interest;

h. Research, assimilate and display proficiency in the techniques, skills and technology of aeronautics;

i. Assess the national and international aviation environment;

j. Apply pertinent knowledge in identifying and solving problems;

k. Apply knowledge of business sustainability to aviation issues.

### PROGRAM OBJECTIVES

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Graduates will have:

Completed the necessary coursework to pursue a bachelor of science degree in aviation maintenance studies. In addition, they will acquire the skills to obtain entry-level positions in aviation maintenance and related fields.

### STUDENT LEARNING OUTCOMES

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The aviation maintenance program learning outcomes are as follows. Graduates will be able to:

- a. Apply learning in mathematics, science, and applied sciences to aviation-related disciplines;
- b. Analyze and interpret aeronautical data;
- c. Work effectively on crews, and multi-

## AVIATION MAINTENANCE (AAS) CURRICULUM

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		Lecture Credits	Lab Credits
<b>Seminars</b>			
FYI101	First Year Initiatives	3	0
CD101	Career Development Seminar	0	0
	<b>Total Credits</b>	<b>3</b>	<b>0</b>
<b>Liberal Arts Courses</b>			
CSC111	Computer Science I - Visual BASIC	3	0
ENG110	English I	3	0
ENG120	English II	3	0
ENG290	Public Speaking	3	0
HIS141	Global Civilization	3	0
POL254	American Government	3	0
	<b>Total Credits</b>	<b>18</b>	<b>0</b>
<b>Math and Sciences Courses</b>			
MAT115	Pre-calculus	4	0
MAT120	Calculus I	4	0
PHY120	Physics I	3	1
PHY220	Physics II	3	1
	<b>Total Credits</b>	<b>14</b>	<b>2</b>
<b>Technical Elective</b>		<b>3</b>	<b>0</b>
<b>Airframe and Powerpoint Certificates</b>		<b>30</b>	<b>0</b>
<b>Total Lecture and Lab Credits</b>		<b>70</b>	

## AVIATION MAINTENANCE BACHELOR OF SCIENCE (BS) DEGREE

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The aviation maintenance BS degree has been developed to provide students with the entry-level technical skills required by the aviation transport industry, corporate aviation divisions and the general aviation community. The graduate of this program will possess an increased ability to communicate and a higher degree of critical and analytical skills to become one of the managers or other mid-level professionals sought by today's rapidly changing aviation industry.

This educational background affords the student many career opportunities in the fields of aircraft manufacturing and aviation maintenance.

The bachelor of science degree consists of three components: 1) the satisfactory completion of a Federal Aviation Administration (FAA) Part 147 approved curriculum from the Aviation Training Institute, or possession of the airframe and powerplant certificate for which students are awarded 30 college credits, or who have a military certificate of eligibility; 2) 34 credits of advanced maintenance technology coursework, including electives and avionics technology; and 3) a solid foundation of 61 credits in liberal arts and sciences.

At the discretion of the department chair, students holding either an airframe or powerplant certificate, or who have advanced standing toward this certificate, may be eligible to enroll in academic courses while pursuing their airframe and powerplant certification.

Students in this program are also eligible to participate in the Air Traffic Control Collegiate Training Initiative (AT-CTI) program. See section AT-CTI for details.

### PROGRAM OBJECTIVES

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Graduates will:

Have completed the necessary coursework to pursue a master's degree in aviation maintenance. In addition, they will acquire the skills to obtain entry- to mid-level positions in aviation maintenance and related fields.

### STUDENT LEARNING OUTCOMES

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The aviation maintenance program learning outcomes are as follows. Graduates will be able to:

- a. Apply learning in mathematics, science, and applied sciences to aviation-related disciplines;
- b. Analyze and interpret aeronautical data;
- c. Work effectively on crews, and multi-disciplinary and diverse teams;
- d. Make professional and ethical decisions;
- e. Communicate effectively using both written and oral skills;
- f. Know that an aviator is a student for life, and pursue the desired knowledge relentlessly;
- g. Assess contemporary issues in aviation, and in any related fields of interest;
- h. Research, assimilate and display proficiency in the techniques, skills and technology of aeronautics;
- i. Assess the national and international aviation environment;
- j. Apply pertinent knowledge in identifying and solving problems;
- k. Apply knowledge of business sustainability to aviation issues.



## AVIATION MAINTENANCE (BS) CURRICULUM

		Lecture Credits	Lab Credits
<b>Seminars</b>			
FYI101	First Year Initiatives	3	0
CD101	Career Development Seminar	0	0
	<b>Total Credits</b>	<b>3</b>	<b>0</b>
<b>Liberal Arts Courses</b>			
CSC111	Computer Science I - Visual Basic	3	0
ECO255	Principles of Economics	3	0
ENG110	English I	3	0
ENG120	English II	3	0
ENG240	Technical Writing	3	0
ENG290	Public Speaking	3	0
	Choose a course from competency 5*	3	0
	Choose a course from competency 6*	3	0
	Choose a course from competency 7*	3	0
	Choose two courses from competencies 5, 6, or 7*	6	0
	<b>Total Credits</b>	<b>33</b>	<b>0</b>
<b>Math and Sciences Courses</b>			
MAT115	Pre-calculus	4	0
MAT120	Calculus I	4	0
MAT220	Calculus II	3	0
PHY120	College Physics I	3	1
PHY220	College Physics II	3	1
PHY320	College Physics III	3	0
	<b>Total Credits</b>	<b>20</b>	<b>2</b>
<b>Aviation Maintenance Courses</b>			
AAM381	Advanced Aircraft Systems for Maintenance	3	0
AAM382	Advanced Gas Turbine Engines	3	0
AAM490	Maintenance Resource Management	3	0
AAM491	Quality Systems/ISO 9000	3	0
AAM492	Rotocraft Design Technology	3	0
AVM332	Avionics Circuit I	3	1
AVM481	Avionics Line Maintenance	3	1
AVM482	Avionics Line Maintenance II	3	1
AVM483	Avionics Line Maintenance III	3	1
DP407	Degree Project	0	0
	2 Math/Science Electives	6	0
	Technical Elective	3	0
	<b>Total Credits</b>	<b>36</b>	<b>4</b>
<b>Airframe and Powerplant Certificates</b>		<b>30</b>	<b>0</b>
<b>Total Lecture and Lab Credits</b>		<b>128</b>	

## AVIATION MAINTENANCE MANAGEMENT BACHELOR OF SCIENCE (BS) DEGREE

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The aviation maintenance management program has been designed to broaden the perspective of the aviation professional. It provides the education and training necessary to prepare men and women to assume leadership and management roles in aviation maintenance. This option builds upon a solid technical background with courses that will prepare the graduate for management positions in the aviation industry.

This program requires training in maintenance, avionics and operations of aircraft systems, blending theoretical and practical approaches.

Emphasis is also placed on training in accounting, business communications, industry and labor relations, economics and finance.

The bachelor of science maintenance management degree consists of four components: 1) the satisfactory completion of all courses required for certification through the Aviation Training Institute or possession of the airframe and powerplant certificate, for which students are awarded 30 college credits; 2) 43 credits of advanced maintenance and technology coursework, including advanced aircraft systems and avionics technology; 3) a solid foundation in liberal arts and science of 30 credits; and 4) students will complete 18 credits in management coursework. Students holding either an airframe or powerplant certificate, or who have advanced standing toward this certificate, may be eligible to enroll in academic courses while pursuing their airframe and powerplant certification, at the discretion of the department chair.

Students in this program are eligible to participate in the Air Traffic Control Collegiate Training Initiative (AT-CTI) program. See AT-CTI section.

### PROGRAM OBJECTIVES

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Graduates will:

Have completed the necessary coursework to assume leadership and management roles in the aviation maintenance fields. They also will have acquired the foundation to further their studies at the graduate level.

### STUDENT LEARNING OUTCOMES

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The aviation maintenance management program learning outcomes are as follows. Graduates will be able to:

- a. Apply learning in mathematics, science, and applied sciences to aviation-related disciplines;
- b. Analyze and interpret aeronautical data;
- c. Work effectively on crews, and multi-disciplinary and diverse teams;
- d. Make professional and ethical decisions;
- e. Communicate effectively using both written and oral skills;
- f. Know that an aviator is a student for life, and pursue the desired knowledge relentlessly;
- g. Assess contemporary issues in aviation, and in any related fields of interest;
- h. Research, assimilate and display proficiency in the techniques, skills and technology of aeronautics;
- i. Assess the national and international aviation environment;
- j. Apply pertinent knowledge in identifying and solving problems;
- k. Apply knowledge of business sustainability to aviation issues.

## AVIATION MAINTENANCE MANAGEMENT (BS) CURRICULUM

		Lecture Credits	Lab Credits
<b>Seminars</b>			
FYI101	First Year Initiatives	3	0
CD101	Career Development Seminar	0	0
	<b>Total Credits</b>	<b>3</b>	<b>0</b>
<b>Liberal Arts Courses</b>			
ENG110	English I	3	0
ENG120	English II	3	0
ENG240	Technical Writing	3	0
ENG290	Public Speaking	3	0
FRE160/SPA160	French I or Spanish I	3	0
FRE261/SPA261	French I or Spanish I	3	0
	Choose a course from competency 5*	3	0
	Choose a course from competency 6*	3	0
	Choose a course from competency 7*	3	0
	Choose two courses from competencies 5, 6, or 7*	6	0
	<b>Total Credits</b>	<b>33</b>	<b>0</b>
<b>Math and Sciences Courses</b>			
CSC111	Computer Science I - Visual Basic	3	0
MAT115	Pre-calculus	4	0
MAT120	Calculus I	4	0
MAT356	Probability and Statistics	3	0
PHY120	Physics I	3	1
PHY220	Physics II	3	1
	<b>Total Credits</b>	<b>20</b>	<b>2</b>
<b>Aviation Maintenance Management Courses</b>			
AAM490	Maintenance Resource Management	3	0
AAM491	Quality Systems/ISO 9000	3	0
ECO255	Principles of Economics	3	0
MGT110	Introduction to Management	3	0
MGT120	Principles of Accounting	3	0
MGT210	Organizational Behavior	3	0
MGT230	Financial Management	3	0
MGT240	Managerial Economics	3	0
MGT360	Business Communications	3	0
MGT371	Marketing Management	3	0
MGT470	Industry and Labor Relations	3	0
INT401	Internship	3	0
DP407	Degree Project	0	0
	<b>Total Credits</b>	<b>36</b>	<b>0</b>
<b>Airframe and Powerplant Component</b>		<b>30</b>	<b>0</b>

**97** Total Lecture and Lab Credits

**124**

\*Refer to page 62 for a list of competencies and associated courses.

## AIR TRAFFIC CONTROL CERTIFICATE PROGRAM

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Air traffic control professionals utilize knowledge of aircraft operating limitations and performance, weather and atmospheric processes, radar theory and radar systems, federal regulations, the US air traffic control system, as well as navigation methods within the National Airspace System.

The Air Traffic Control Option is not a degree-granting program; it is a set of courses that can be taken in conjunction with several degree programs offered by Vaughn College. The set of courses\* (15 credits) includes: ATC200, ATC220/FLT230, ATC240, and FLT110, with corresponding labs, as well as the capstone course ATC300, which is completed after the conclusion of the required courses. At the completion of this program, students will be able to:

- Demonstrate knowledge of the theory of aircraft operating limitations and performance, including methods of air and ground navigation within the National Airspace System.
- Demonstrate knowledge of weather and atmospheric processes, and how each affect the air traffic control system.
- Demonstrate knowledge of Federal Regulations and the U.S. air traffic control system interactions, including FAA publications.
- Demonstrate knowledge of fundamentals of aircraft separation in radar, nonradar, and terminal environments, as well as operating techniques of air traffic control facilities in visual and instrument conditions.
- Demonstrate awareness of air traffic control industry trends, future developments, global implications, and current management practices and techniques.
- Demonstrate broad knowledge of the aviation industry.

Students in the following degree programs are eligible to participate by taking the aforementioned courses not only for the technical requirements of their degree but also to understand the interaction of air traffic control in the Tower, En-Route, Non-Radar, or Terminal Radar options:

- AAS in Aircraft Operations
- BS in Aircraft Operations
- BS in Aeronautical Sciences
- AAS in Airport Management
- BS in Airport Management
- BS in Airline Management
- AAS in Aviation Maintenance
- BS in Aviation Maintenance

- BS in Aviation Maintenance Management
- AAS in Electronic Engineering Technology

Every day of the year, and especially on holidays, more than 15,000 federal controllers at 315 FAA air traffic facilities are on the job, guiding more than 87,000 flights every day across our national airspace system.

Disciplined, tough-minded, meticulous and driven — these are characteristics of the exceptional men and women who provide the safe and orderly flow of air traffic at airports and in our skies. Vaughn College will give you the basic training and encouragement you need to keep our air traffic system running smoothly as an air traffic control specialist. Qualifying with the FAA is challenging, but the support and satisfaction you will receive make this career worthwhile.

The minimum requirements to be an Air Traffic Control Specialist, you must:

- Be a United States citizen
- Start at the FAA Academy no later than your 31st birthday
- Pass a medical examination
- Pass a security investigation
- Have a Bachelor's degree, or three years of progressively responsible work experience, or a combination of post-secondary education and work experience that totals three years.
- Pass the FAA air traffic pre-employment tests which consists of a \*bio-data assessment, and if successful then the \*\*AT-SAT test.
- Speak English clearly enough to be understood over communications equipment
- All vacancies for air traffic control specialist positions will be announced via USAJOBS.

\*The FAA's bio-data assessment assesses education, experience, work habits, and dimensions that are related to success on the job. The bio-data assessment is administered prior to the AT-SAT test. If you qualify following the bio-data assessment, you will be referred to take the AT-SAT test.

\*\* The Air Traffic Selection and Training (AT-SAT) is an eight-hour computer based pre-employment test used to measure aptitude required for entry-level air traffic control specialist positions. The AT-SAT evaluates basic air traffic control skills, which includes applied mathematics, geometric visualization, memory, and pattern recognition.

## AIRCRAFT DISPATCHER CERTIFICATE TRAINING PROGRAM

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Vaughn College offers a comprehensive program for Federal Aviation Administration (FAA) Aircraft Dispatcher Certificate Training. The program is offered to Vaughn matriculated students as well as individuals who want to obtain the aircraft dispatcher certificate only. These students must register for AD10, and separate fees will be charged for the certificate program. Vaughn students may be eligible to earn up to 12 credits.

Performing one of aviation's most important roles, aircraft dispatchers share with pilots the ultimate responsibility for a flight's commencement and completion.

To prepare individuals to fill these important positions, this specialized course of study provides thorough training that includes preparation for FAA examinations.

Initial training consists of a minimum of 217 hours of full-time study over six to eight weeks. An aviation background is helpful but not a requirement for initial training.

### Course Content

Initial training covers the following:

- FAA regulations
  - Meteorology
  - Navigation
  - Aerodynamics
  - Aircraft specifics
  - Communication
  - Air traffic control
  - Emergency and abnormal procedures
- 
- Practical dispatch applications
  - Dispatch resource management

By enrolling in this specialized program, students will be permitted to earn 12 Vaughn College credits toward a bachelor's degree in general management, airport management, aircraft operations, aeronautical sciences or airline management. After satisfactory completion of the dispatch courses, the student may be able to sit for the FAA flight dispatcher exam.

Students will be charged as enrolled full-time matriculated students. Given the number of hours required for this program, students can only take an additional three credits during the spring and fall semesters, and they may not take any additional credits during the summer semester.

The following prerequisites are required by the

Federal Aviation Administration's regulations Part 65.Sec. 53:

- 1) To be eligible to take the aircraft dispatcher knowledge test, you must be at least 21 years of age.
- 2) To be eligible for an aircraft dispatcher certificate, you must be at least 23 years of age.
- 3) You must be fluent in reading, speaking, writing and understanding the English language.
- 4) Foreign students must have a valid M-1 or F-1 visa and legal status in the US.
- 5) Students must present two forms of identification showing exact matching information. One form of identification should have a picture and present address; and
- 6) A background in aviation subjects or other related fields is helpful, but not required, as the full certificate course will adequately prepare applicants for the written and practical exams.

To qualify, a student must enroll under Vaughn College's academic requirements in the specified FLT441, FLT442, FLT443 and FLT444 courses. Students who already hold a current FAA aircraft dispatcher certificate at the time they enroll at Vaughn College can obtain three technical elective credits in their relevant bachelor's degree program.

For complete details, see the section under aviation degrees, aircraft dispatch program on our website ([www.vaughn.edu](http://www.vaughn.edu)) or contact Dominic Proscia, vice president of training, at [domenic.proscia@vaughn.edu](mailto:domenic.proscia@vaughn.edu) or 718.429.6600, ext. 139.

## MANAGEMENT DEGREE PROGRAMS

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### AIRPORT MANAGEMENT CONCENTRATION ASSOCIATE IN APPLIED SCIENCE (AAS) DEGREE

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The associate degree in airport management is intended to prepare students to work in airports and related client businesses. There are three major international and several regional airports in the tristate area. Airports create a number of ancillary occupations and businesses, all of which require qualified personnel.

This program provides a strong combination of liberal arts, math and science, general management and airport management courses. The liberal arts foundation is intended to strengthen students' general awareness of issues in recent history and politics; in particular, it aims to develop their written and verbal communication skills. Additionally, it includes a number of math and science courses to enhance numeracy and further analytical abilities.

The general management courses build on the skills derived from the English and math foundation to prepare students in the various functional areas of management—accounting, finance, economics, public relations and planning. The airport management courses use the lessons of the general management courses to apply them to the functions and duties of various agents in an airport environment. This gives students additional options in a field with substantial career opportunities.

### PROGRAM OBJECTIVES

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Graduates will:

Be prepared for careers in airports and related businesses; for entry-level positions of administrative responsibility in public or private enterprises or managing agencies; and for entry at the junior level into baccalaureate programs in this and related fields.

### STUDENT LEARNING OUTCOMES

---

The airport management program learning outcomes are as follows. Graduates will be able to:

1. Apply quantitative and qualitative concepts and skills to address managerial issues.
2. Demonstrate knowledge of basic principles of different functional areas of management.
3. Demonstrate an appropriate mastery of current knowledge, issues and tools used in the airport industry.
4. Function individually and on multidisciplinary teams.
5. Communicate effectively orally and in writing.



## AAS Airport Management Curriculum

		Lecture Credits	Lab Credits
<b>Seminars</b>			
FYI101	First Year Initiatives	3	0
CD101	Career Development Seminar	0	0
	<b>Total Credits</b>	<b>3</b>	<b>0</b>
<b>Liberal Arts Courses</b>			
ENG110	English I	3	0
ENG120	English II	3	0
ENG240	Technical Writing	3	0
ENG290	Public Speaking	3	0
HIS141	Global Civilization	3	0
POL254	American Government	3	0
	<b>Total Credits</b>	<b>18</b>	<b>0</b>
<b>Math and Sciences Courses</b>			
MAT115	Pre-calculus	4	0
MAT210	Introduction to Statistics	3	0
PHY120	Physics I	3	1
	<b>Total Credits</b>	<b>10</b>	<b>1</b>
<b>Management and Aviation Courses</b>			
AER101/FLT110/ AER300	Introduction to Aeronautics/General Aeronautics/Current Topics	3/4/3	0
APM241	Airport Administration	3	0
APM485	Airport Development and Management	3	0
ATC200	Basic Air Traffic Control I	2	2
ATC220/FLT230	ATC Weather/Aviation Weather	3	0
ECO255	Principles of Macroeconomics	3	0
FLT241	Aviation Safety	3	0
MGT110	Management I	3	0
MGT120	Principles of Accounting	3	0
MGT230	Financial Management	3	0
MGT470	Industry and Labor Relations	3	0
	Aviation, Management, Technology Upper Level Elective	3	0
	<b>Total Credits</b>	<b>35/36</b>	<b>2/3</b>
<b>Total Lecture and Lab Credits</b>		<b>69/70</b>	

## **AIRPORT MANAGEMENT BACHELOR OF SCIENCE (BS) DEGREE**

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The field of airport management is a unique discipline with its roots in general business, but driven by the high-tech world of aviation and transportation. In this program, students concentrate on subjects as diverse as wildlife hazards, ecosystem management, and emergency planning and control.

Our location, adjacent to LaGuardia Airport, provides an excellent learning environment. Students can investigate firsthand the areas of airport planning, management, business and finance, control of ground vehicles, communication systems, airport security, fire and rescue services, and airport maintenance. Students may also pursue a variety of areas of elective study, including supply chain management, FBO operations and other technical, aviation and management areas. Students may complete the dispatch program in accordance with the requirements described in the section titled "Aircraft Dispatcher License Training Program." Similarly, eligible students may complete the AT-CTI program as described in the section titled "Air Traffic Control-Collegiate Training Initiative."

### **LANGUAGE REQUIREMENT**

---

To ensure that our graduates are well prepared to work in a global environment, a foreign language requirement has been included in our management curriculum. The language requirement can be satisfied by enrollment in two terms of either French or Spanish. These courses are designed for nonnative speakers; therefore, no bypass examinations will be allowed. A native speaker of either French or Spanish is therefore expected to complete the other language offered if he or she has not studied another language at the college level. The computerized language lab in the Teaching and Learning Center should be utilized for review and enhancement for at least two hours per week.

Vaughn College recognizes that many of our students come to Vaughn already documented as speaking two or more languages. To address this, Vaughn has instituted a policy that is both academically sound and provides flexibility. Students who have studied a foreign language at another college (with a 2.0 or higher) or have taken a foreign-language AP exam (with a 3.0 or higher)

will be given transfer credit. On the other hand, those who have become multilingual through other means should substitute six liberal arts credits in place of the language requirement.

### **PROGRAM OBJECTIVES**

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Graduates will:

Be prepared for careers in airports and related businesses, for entry- to mid-level positions of administrative responsibility in public or private enterprises or managing agencies and for further study at the graduate level.

### **STUDENT LEARNING OUTCOMES**

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The airport management program learning outcomes are as follows. Graduates will be able to:

1. Apply quantitative and qualitative concepts and skills to address managerial issues.
2. Demonstrate knowledge of basic principles of different functional areas of management.
3. Demonstrate an appropriate mastery of current knowledge, issues and tools used in the airport industry.
4. Function individually and on multidisciplinary teams.
5. Communicate effectively orally and in writing.
6. Understand professional, ethical and social responsibilities.
7. Recognize the need for and possesses the ability to pursue lifelong learning.
8. Have a respect for diversity and knowledge of contemporary professional, societal and global issues.
9. Demonstrate a commitment to quality, timeliness and continuous improvement.

## BS Airport Management Curriculum

		Lecture Credits	Lab Credits
<b>Seminars</b>			
FY1101	First Year Initiatives	3	0
CD101	Career Development Seminar	0	0
	<b>Total Credits</b>	<b>3</b>	<b>0</b>
<b>Liberal Arts Courses</b>			
ENG110	English I	3	0
ENG120	English II	3	0
ENG240	Technical Writing	3	0
ENG290	Public Speaking	3	0
FRE160/SPA160	Foreign Language Requirement I	3	0
FRE261/SPA261	Foreign Language Requirement II	3	0
	Choose a course from competency 5*	3	0
	Choose a course from competency 6*	3	0
	Choose a course from competency 7*	3	0
	Choose two courses from competencies 5, 6, or 7*	6	0
	<b>Total Credits</b>	<b>36</b>	<b>0</b>
<b>Math and Sciences Courses</b>			
MAT115	Pre-calculus	4	0
MAT120	Calculus I	4	0
MAT210	Introduction to Statistics	3	0
PHY120	Physics I	3	1
PHY220	Physics II	3	1
	Choose a course from competencies 3, 8, 9, or 10*	3	0
	<b>Total Credits</b>	<b>20</b>	<b>2</b>
<b>Additional Course</b>			
CDE117	Engineering Graphics With Computer-aided Design	3	0
	<b>Total Credits</b>	<b>3</b>	<b>0</b>
<b>Management and Aviation Courses</b>			
AER101/FLT110/ AER300	Introduction to Aeronautics/General Aeronautics/Current Topics	3/4/3	0
ALM362	Airline Management	3	0
APM241	Airport Administration	3	0
APM485	Airport Development and Management	3	0
ATC200	Basic Air Traffic Control I	2	2
ATM320	Aviation Law	3	0
ECO255	Principles of Macroeconomics	3	0
FLT241	Aviation Safety	3	0
FLT384	Management of Environmental Issues	3	0
MGT110	Management I	3	0
MGT120	Principles of Accounting	3	0
MGT210	Organizational Behavior	3	0
MGT230	Financial Management	3	0
MGT360	Business Communications	3	0
MGT372	Marketing Management and Public Relations	3	0
MGT403	Internship/Degree Project	3	0
MGT470	Industry and Labor Relations	3	0
MGT480	Capstone: Strategic Management	3	0
	Aviation, Technology or Management Upper Level Elective	9	0
	<b>Total Credits</b>	<b>62/63</b>	<b>2</b>
<b>Total Lecture and Lab Credits</b>		<b>128/129</b>	

\*Refer to page 62 for a list of competencies and associated courses.

## **AIRLINE MANAGEMENT BACHELOR OF SCIENCE (BS) DEGREE**

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The airline management program is targeted toward meeting a need in the airline industry for qualified managers who have specialized training in this profession. Graduates of this program will be able to secure entry- to mid-level management positions in airlines. The program includes a substantial component of liberal arts and basic science courses. Courses in the major address issues in general, aviation and airline management. Students may complete a variety of elective courses related to airline aviation management as well as in some technical areas.

Students interested in this program are eligible to participate in the Federal Aviation Administration's Air Traffic-Collegiate Training Initiative (AT-CTI) according to the requirements listed in the AT-CTI section.

Students may also complete the dispatcher program according to the requirements described in the section "Aircraft Dispatcher License Training Program."

### **LANGUAGE REQUIREMENT**

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To ensure that our graduates are well prepared to work in a global environment, a foreign-language requirement has been included in our management curriculum. The language requirement can be satisfied by enrollment in two terms of either French or Spanish. These courses are designed for nonnative speakers; therefore, no bypass examinations will be allowed. A native speaker of either French or Spanish is therefore expected to complete the other language offered if he or she has not studied another language at the college level. The computerized language lab in the Teaching and Learning Center should be utilized for review and enhancement for at least two hours per week.

However, Vaughn College recognizes that many of our students come to Vaughn already documented as speaking two or more languages. To address this, Vaughn has instituted a policy that is both academically sound and provides flexibility. Students who have studied a foreign language at another college (with a 2.0 or higher) or have taken a foreign-language AP exam (with a 3.0 or higher) will be given transfer credit. On the other hand, those who have become multilingual

through other means should substitute six liberal arts credits in place of the language requirement.

### **PROGRAM OBJECTIVES**

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Graduates will:

Be prepared for careers in airlines and related businesses for entry- to mid-level positions of administrative responsibility in public or private enterprises and for further study at the graduate level.

### **STUDENT LEARNING OUTCOMES**

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The airline management program learning outcomes are as follows. Graduates will be able to:

1. Apply quantitative and qualitative concepts and skills to address managerial issues.
2. Demonstrate knowledge of basic principles of different functional areas of management.
3. Demonstrate an appropriate mastery of current knowledge, issues and tools used in the airline industry.
4. Function individually and on multidisciplinary teams.
5. Communicate effectively orally and in writing.
6. Understand professional, ethical and social responsibilities.
7. Recognize the need for and possesses the ability to pursue lifelong learning.
8. Have a respect for diversity and knowledge of contemporary professional, societal and global issues.
9. Demonstrate a commitment to quality, timeliness and continuous improvement.

## BS Airline Management Curriculum

		Lecture Credits	Lab Credits
<b>Seminars</b>			
FYI101	First Year Initiatives	3	0
CD101	Career Development Seminar	0	0
	<b>Total Credits</b>	<b>3</b>	<b>0</b>
<b>Liberal Arts Courses</b>			
ENG110	English I	3	0
ENG120	English II	3	0
ENG240	Technical Writing	3	0
ENG290	Public Speaking	3	0
FRE160/SPA160	Foreign Language Requirement I	3	0
FRE261/SPA261	Foreign Language Requirement II	3	0
	Choose a course from competency 5*	3	0
	Choose a course from competency 6*	3	0
	Choose a course from competency 7*	3	0
	Choose two courses from competencies 5, 6, or 7*	6	0
	<b>Total Credits</b>	<b>33</b>	<b>0</b>
<b>Math and Sciences Courses</b>			
MAT115	Pre-calculus	4	0
MAT120	Calculus I	4	0
MAT210	Introduction to Statistics	3	0
PHY120	Physics I	3	1
PHY220	Physics II	3	1
	Choose a course from competencies 3, 8, 9, or 10*	3	0
	<b>Total Credits</b>	<b>20</b>	<b>2</b>
<b>Management and Aviation Courses</b>			
AER101/FLT110/ AER300	Introduction to Aeronautics/General Aeronautics/Current Topics	3/4/3	0
APM241	Airport Administration	3	0
ALM362	Airline Management	3	0
ATC200	Basic Air Traffic Control I	2	2
ATM320	Aviation Law	3	0
ATM450	Air Transport and Cargo Management	3	0
ECO255	Principles of Microeconomics	3	0
FLT241	Aviation Safety	3	0
FLT384	Management of Environmental Issues	3	0
MGT110	Management I	3	0
MGT120	Principles of Accounting	3	0
MGT210	Organizational Behavior	3	0
MGT230	Financial Management	3	0
MGT240	Principles of Microeconomics	3	0
MGT360	Business Communications	3	0
MGT372	Marketing Management and Public Relations	3	0
MGT403	Internship/Degree Project	3	0
MGT470	Industry and Labor Relations	3	0
MGT480	Capstone: Strategic Management	3	0
	Management, Aviation or Technology Upper Level Elective	12	0
	<b>Total Credits</b>	<b>68/69</b>	<b>2</b>
	<b>Total Lecture and Lab Credits</b>	<b>128/129</b>	

\*Refer to page 62 for a list of competencies and associated courses.

## **GENERAL MANAGEMENT BACHELOR OF SCIENCE (BS) DEGREE**

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The bachelor of science program in general management is targeted toward meeting a need across a broad spectrum of industries for qualified managers who have generalized training in their profession. Graduates of this program will be able to secure entry- to mid-level management positions in small or large corporations.

The management program is designed to enable individuals to further their education, gain valuable management expertise and take maximum advantage of credits earned at other institutions or through professional training.

The program is open to traditional four-year students. These students will be required to work with a faculty adviser to use the 30 elective credits to design a coherent concentration in an area other than airport management, airline management and aviation maintenance management. For example, a student might select courses in aeronautical engineering technology to fashion a concentration in technology management. Faculty advisers will ensure that this degree plan is academically sound and can be completed within four years.

In this program, students concentrate on subjects as diverse as financial accounting, principles of economics, entrepreneurship, import/export, industry and labor relations, business communications and technical writing.

While pursuing a BS in general management, students add valuable experience to their résumés by participating in an internship or cooperative education program. Opportunities are available with major leading corporations in the metropolitan area.

### **LANGUAGE REQUIREMENT**

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To ensure that our graduates are well prepared to work in a global environment, a foreign language requirement has been included in our management curriculum.

The language requirement can be satisfied by enrollment in two terms of either French or Spanish. These courses are designed for nonnative speakers; therefore, no bypass examinations will be allowed. A native speaker of either French or Spanish is therefore expected to complete the other language offered if he or she has not studied another language at the college level. The computerized language lab in the Teaching and Learning Center should be utilized for review and

enhancement for at least two hours per week.

However, Vaughn College recognizes that many of our students come to Vaughn already documented as speaking two or more languages. To address this, Vaughn has instituted a policy that is both academically sound and provides flexibility. Students who have studied a foreign language at another college (with a 2.0 or higher) or have taken a foreign language AP exam (with a 3 or higher) will be given transfer credit. On the other hand, those who have become multilingual through other means should substitute six liberal arts credits in place of the language requirement.

### **PROGRAM OBJECTIVES**

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Graduates will:

Be prepared for management careers in businesses related to their fields of study, for entry-to mid-level positions of administrative responsibility in public or private enterprises and for further study at the graduate level.

### **STUDENT LEARNING OUTCOMES**

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The general management program learning outcomes are as follows. Graduates will be able to:

1. Apply quantitative and qualitative concepts and skills to address managerial issues.
2. Demonstrate knowledge of basic principles of different functional areas of management.
3. Demonstrate an appropriate mastery of current knowledge, issues and tools used in the industry of the major built around their open elective courses.
4. Function individually and on multidisciplinary teams.
5. Communicate effectively orally and in writing.
6. Understand professional, ethical and social responsibilities.
7. Recognize the need for and possesses the ability to pursue lifelong learning.
8. Have a respect for diversity and knowledge of contemporary professional, societal and global issues.
9. Demonstrate a commitment to quality, timeliness and continuous improvement.



## BS General Management Curriculum

		Lecture Credits	Lab Credits
<b>Seminars</b>			
FYI101	First Year Initiatives	3	0
CD101	Career Development Seminar	0	0
	<b>Total Credits</b>	<b>3</b>	<b>0</b>
<b>Liberal Arts Courses</b>			
ENG110	English I	3	0
ENG120	English II	3	0
ENG210	World Literature	3	0
ENG220	American Literature	3	0
ENG240	Technical Writing	3	0
ENG290	Public Speaking	3	0
FRE160/SPA160	Foreign Language Requirement I	3	0
FRE261/SPA261	Foreign Language Requirement II	3	0
HIS141	Global Civilization	3	0
HUM251	International Studies	3	0
POL254	American Government	3	0
	<b>Total Credits</b>	<b>33</b>	<b>0</b>
<b>Math and Sciences Courses</b>			
MAT115	Pre-calculus	4	0
MAT120	Calculus I	4	0
MAT210	Introduction to Statistics	3	0
PHY120	Physics I	3	1
PHY220	Physics II	3	1
	Math/Science Elective	3	0
	<b>Total Credits</b>	<b>20</b>	<b>2</b>
<b>General Management Courses</b>			
ECO255	Principles of Microeconomics	3	0
MGT110	Management I	3	0
MGT120	Principles of Accounting	3	0
MGT210	Organizational Behavior	3	0
MGT220	Corporate Accounting	3	0
MGT230	Financial Management	3	0
MGT360	Business Communications	3	0
MGT372	Marketing Management and Public Relations	3	0
MGT403	Internship/Degree Project	3	0
MGT470	Industry and Labor Relations	3	0
MGT480	Capstone: Strategic Management	3	0
	Aviation, Management or Technology Upper Level Electives	12	0
	<b>Total Credits</b>	<b>36</b>	<b>0</b>
<b>Open Electives</b>		<b>30</b>	

## MANAGEMENT/AVIATION DEPARTMENTS' ADVISORY COUNCIL

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LORETTA ALKALAY, ESQ.  
Regional Counsel  
Federal Aviation Administration (FAA) (retired)

MICHAEL BARTRON  
Pratt & Whitney

GERARD BISCARDI  
Allied Aviation

MARIA BORDAS  
The Port Authority of New York and New Jersey

STEPHEN CARBONE  
Federal Aviation Administration (FAA)

NELSON CAMACHO, ESQ.  
Fitzpatrick & Hunt LLC

ALICE CHAN, ESQ.  
Fitzpatrick & Hunt LLC

VINCENT CIMINO  
Federal Aviation Administration (FAA)

TANYA COLE  
US Department of Commerce

VITO D'ANNA  
Evergreen

JOHN DE FELICE  
JFK International Air Terminal LLC  
Terminal 4 (retired)

IAISHA EL-TAWIL  
JetBlue

STEVE FERGUSON  
Westchester County Airport

PETE FLORIO  
Federal Aviation Administration (FAA)

THE HON. JOHN GOGLIA  
National Transportation Safety Board (retired)  
Safe Skies

AL GRASER  
The Port Authority of New York and New Jersey  
(retired)

HENK GUITJENS  
Guitjens Associates

DR. ALAN HOBBS  
NASA

WARREN KROEPPPEL  
SheltAir

STEPHEN JONES  
Federal Aviation Administration (FAA)

DARREN LARGE  
Morristown Municipal Airport

SHELLEY LAROSE  
Republic Airport

PETER LEUTHI  
Aviation Solutions Inc.

RALPH LOPEZ  
American Airlines

MYLES MATTHEWS  
Global Trade and Technology Center

ED MCKENNA  
Federal Aviation Administration (FAA)

STEVE MIKHLIN, '99  
Marsh USA

MERCEDES OZCAN, ESQ.  
McBreen & Kopko

JOHN STARACE  
Westchester County Airport

DAN VORNEA  
The Port Authority of New York and New Jersey  
(retired)

## AVIATION TRAINING INSTITUTE

The Aviation Training Institute, a division of Vaughn College of Aeronautics and Technology, is dedicated to providing excellence in aviation technical education to fill the employment needs of air carriers and corporate and general aviation groups.

### AVIATION MAINTENANCE CERTIFICATE PROGRAM

Through the Aviation Maintenance Certificate Program, students complete intensive blocks of technical courses in as little as four, 15-week consecutive terms to prepare for airframe and powerplant (A&P) certification. They will learn to install, assemble, build, diagnose and maintain multimillion-dollar high-tech equipment and systems that power today's most advanced aircraft.

A total of 78.5 certification units are required.

In addition, students who complete their A&P certification and who decide to pursue a more advanced degree at Vaughn College will be awarded 30 credits toward a bachelor's or associate degree in aviation maintenance.

### *Aviation Maintenance Certification*

Airframe and powerplant certification is an integral part of all maintenance-based degree and certificate programs. All airframe and powerplant courses required for certification are offered through the Aviation Training Institute (ATI). Courses that are part of the Federal Aviation Administration FAR Part 147 are listed below.

### AIRFRAME AND POWERPLANT CERTIFICATION UNITS

Subject Number	Subject Name	Theory Units	Lab Units	Total Certification Units
FYE101	Freshman Year Experience	1	0	1
GD01	Introduction to Aircraft Graphics	2	0	2
GP01	Introduction to Aircraft Physics	3	0	3
GM21	Aircraft Materials and Processes	3	1.5	4.5
AH31	Hydraulics and Pneumatics I	2	1	3
GL31	Aircraft Weight and Balance	0	1	1
GE10	Basic DC-AC Electricity	4	1.5	5.5
AL32	Aircraft Rigging and Alignment	1	1	2
GO41	Aircraft Operations and Publications	2	1	3
AC32	Aircraft Structures I	3	2	5
AC41	Aircraft Structures II	2	1	3
AS41	Aircraft Systems	3	2	5
AH40	Aircraft Landing Gear Systems	2	1	3
AE20	Aircraft and Engine Electrical Systems	3	1.5	4.5
AS42	Aircraft Avionics Systems	3	1.5	4.5
AA02	Certification Preparation – Airframe	0	0	0
CD101	Career Development Seminar	0	0	0
PP53	Powerplant Theory and Maintenance	3	2	5
PS51	Powerplant Systems I	2	2	4
PC52	Aircraft Ignition Systems	2	1	3
PS60	Powerplant Systems II	2	1	3
PO60	Powerplant Maintenance Operations	3	2	5
PE30	Powerplant Electrical Systems	2	0.5	2.5
PP61	Turbine Engine Maintenance	4	2	6
PP02	Certification Preparation – Powerplant	0	0	0
<b>Total Units</b>		<b>52</b>	<b>26.5</b>	<b>78.5</b>

## AIRFRAME AND POWERPLANT TECHNOLOGY ASSOCIATE IN OCCUPATIONAL STUDIES (AOS) DEGREE

The airframe and powerplant technology curriculum is specifically designed for students who wish to concentrate on the mechanical skills involved in airframe and powerplant maintenance operations. It is approved by the Federal Aviation Administration (FAA) as preparation for the airframe and powerplant (A&P) certificate.

Students gain the practical hands-on laboratory experience and develop skills in the servicing, repair and maintenance of airframe structures and powerplants, including accessory and system components. FAA-certified technicians are responsible for maintaining all aircraft in

airworthy condition. FAA technicians also obtain positions in aircraft manufacturing and related industries. Students holding either an airframe or powerplant license, or who have advanced standing toward those licenses, may be eligible to enroll in academic courses while pursuing their airframe and powerplant certification at the discretion of the department.

FAA certification requires the completion of basic skills courses in the areas of mathematics, science and technical drawing. Below is a suggested semester sequence for the AOS 16-month (four-semester) program.

### 16-MONTH AIRFRAME AND POWERPLANT CERTIFICATE (DAY) PROGRAM

Number	Name	Theory Units	Lab Units	Total Units
<b>SEMESTER I</b>				
FYE101	Freshman Year Experience	1	0	1
GD01	Introduction to Aircraft Graphics	2	0	2
GP01	Introduction to Aircraft Physics	3	0	3
GM21	Aircraft Materials and Processes	3	1.5	4.5
AH31	Hydraulics and Pneumatics I	2	1	3
GL31	Aircraft Weight and Balance	0	1	1
GE10	Basic DC-AC Electricity	4	1.5	5.5
AL32	Aircraft Rigging and Alignment	1	1	2
	<b>Semester total</b>	<b>16</b>	<b>6</b>	<b>22</b>
<b>SEMESTER II</b>				
GO41	Aircraft Operations and Publications	2	1	3
AC32	Aircraft Structures I	3	2	5
AC41	Aircraft Structures II	2	1	3
AS41	Aircraft Systems	3	2	5
AH40	Aircraft Landing Gear Systems	2	1	3
	<b>Semester total</b>	<b>12</b>	<b>7</b>	<b>19</b>
<b>SEMESTER III</b>				
AE20	Aircraft and Engine Electrical Systems	3	1.5	4.5
AS42	Aircraft Avionics Systems	3	1.5	4.5
AA02	Certification Preparation – Airframe	0	0	0
CD101	Career Development Seminar	0	0	0
PP53	Powerplant Theory and Maintenance	3	2	5
PS51	Powerplant Systems I	2	2	4
	<b>Semester total</b>	<b>11</b>	<b>7</b>	<b>18</b>
<b>SEMESTER IV</b>				
PC52	Aircraft Ignition Systems	2	1	3
PS60	Powerplant Systems II	2	1	3
PO60	Powerplant Maintenance Operations	3	2	5
PE30	Powerplant Electrical Systems	2	0.5	2.5
PP61	Turbine Engine Maintenance	4	2	6
PP02	Certification Preparation – Powerplant	0	0	0
	<b>Semester total</b>	<b>13</b>	<b>6.5</b>	<b>19.5</b>
<b>Total Units</b>		<b>52</b>	<b>26.5</b>	<b>78.5</b>

## COURSE DESCRIPTIONS

### CREDIT COURSES

All courses will be offered in both the fall and spring semesters unless otherwise noted.

#### **AAM381 – ADVANCED AIRCRAFT SYSTEMS FOR MAINTENANCE – 3 credits**

This course is a comprehensive study into the most recent technology innovations incorporated into advanced aircraft system design. It includes in-depth analysis of the latest engineering disciplines associated with fluid motion, mechanical and electronic subsystem anatomy. Students can substitute ERG450, Aircraft Configuration Design, for the AAM381 course. Prerequisites: MAT120, PHY120; *fall offering only*

#### **AAM382 – GAS TURBINE ENGINES – 3 credits**

This course is a comprehensive study of the most recent innovations incorporated into advanced gas turbine engine design. It includes in-depth analysis of the latest in gas turbine hi-bypass propulsion and accessory component technology. The student will function at industry-level standards, utilizing state-of-the-art computer-based software. Prerequisites: MAT120, PHY120; *spring offering only*

#### **AAM490 – MAINTENANCE RESOURCE MANAGEMENT (MRM) – 3 credits**

The aviation maintenance technicians' work environment encompasses a wide variety of tasks. MRM will be used to enhance the safety culture of an aviation organization by encouraging a profound awareness of safety issues. Safety program failure is indicated by occupational injuries, ground damage, accidents, incidents, decreased reliability and airworthiness. Prerequisite: ENG110; *fall offering only*

#### **AAM491 – QUALITY SYSTEMS/ISO 9000 – 3 credits**

A three-credit course introducing the student to the basics of quality as it applies to aircraft maintenance, using the ISO 9000 quality standard. Students will be shown the intricacies of why certification is obtained. The course will include topics such as history of aviation quality systems, quality terminology, inspection and test status, and control of quality records. Prerequisite: ENG110; *fall offering only*

#### **AAM492 – ROTORCRAFT DESIGN TECHNOLOGY – 3 credits**

A detailed analysis of the aerodynamics involved

in rotorcraft flight. Focuses on the engineering concepts associated with rotor wing design, control functions and load factors. The principles of rotorcraft performance and structural composition are included. Prerequisites: MAT120, PHY120; *spring offering only*

#### **AER101 – INTRODUCTION TO AERONAUTICS – 3 credits**

Presents an overview of aviation, enabling the student to gain an appreciation of the complexities of the field of aeronautics. Course content includes historical background, aeronautical technology, the social and economic impact of aerospace, and future developments and government regulation.

#### **AER250 – HISTORY OF AVIATION – 3 credits**

A comprehensive study of the history of aviation, its influences and its economic effects on everyday living.

#### **AER260 – THE NATIONAL AIRSPACE SYSTEM – 3 credits**

An overview of the proposed national airspace system that covers problems encountered in implementing the system, airspace allocation and usage, facilities, safety considerations, new developments in electronic navigation and control systems, economic and social impact, as well as political implications.

#### **AER 270 INTRODUCTION TO AVIATION SECURITY – 3 credits**

This course explores the evolution of security within the world's aviation industry from the 1930s to the present time. The impact of particular events in shaping aviation security policies will be examined. Technological advances and their impacts on airports, passengers and other users will be described. Procedures that are currently followed in various sectors of the industry, including passenger, cargo and other operations, will be examined. Methods used to carry out and enforce security policies will be discussed. This course will describe the regulatory agencies governing aviation security in the US .

#### **AER300 – CURRENT TOPICS IN AVIATION WITH THE HON. JOHN GOGLIA – 3 credits**

The course examines the leading issues in aviation today with a world-recognized aviation expert. From topics such as the controversy over outsourced maintenance to the growth and safety record of commuters to the impacts of fatigue on air traffic controllers, pilots and mechanics, the course will encourage frank and candid exploration of these and

other contemporary aviation topics. The course enables students to explore the complexities of these issues, and the difficulties faced by industry and regulatory agencies. The course will include behind-the-scenes views of how the FAA, NTSB and other agencies interact, and how that affects aviation safety.

**AET409 – ELECTRONIC ENGINEERING TECHNOLOGY–AVIONICS CONCENTRATION DEGREE PROJECT – 3 credits**

This project is a capstone for students enrolled in Electronic Engineering Technology-Avionics concentration. The project should demonstrate applications of the knowledge and technical skills gained through the curriculum. Students are required to submit a synopsis of the project at the beginning of the semester that must be approved by the degree project faculty advisers. At the end of the semester, students must submit a complete project report and present a seminar. Prerequisites: AVT453, EGR380

**ALM135 – AIRLINE OPERATIONS – 3 credits**

The course describes various aspects of the operation of an airline—the services it provides, how those processes work and how they can be improved vis-à-vis customers' needs. The course will provide an overview of issues such as general ground operations, safety and management, sources of planning for disruptions, passenger- and cargo-specific operations, measurement and enhancement of operational efficiency, airspace, weather and regulations. *Spring offering only*

**ALM240 – AIRLINE ECONOMICS AND FINANCE – 3 credits**

Examines issues related to functioning of airlines from an economic perspective. They include government regulation, the role of airlines in the economy, entry into and exit from the industry, supply, demand, cost, pricing and air cargo. The course also provides an introduction to the basic principles of insurance and risk with their special application to the aviation industry. *Spring offering only*

**ALM362 – AIRLINE MANAGEMENT – 3 credits**

This course covers the complex area of operational techniques and problems confronting the air travel industry today. Topics covered include market research, passenger trends, route studies, on-time operations, emergency measures and safety considerations. *Fall offering only*

**APM241 – AIRPORT ADMINISTRATION – 3 credits**

An introduction to the complexities of airport planning and its importance to achieve a successful airport operation. Content includes a study of the duties and

responsibilities of the airport manager, with emphasis on the Federal Air Regulations governing the operation and administration of commercial airports within the United States. Critical issues such as the impact of technology, airport capacity and airport master planning to improve/enhance infrastructure, environmental issues, safety, and airport privatization.

**APM360 – FUNDAMENTALS OF FBO MANAGEMENT – 3 credits**

This course provides an introduction to the basics of Fixed Base Operator (FBO) management, with an emphasis on development of the knowledge and skills necessary to successfully manage an FBO. The content focuses on practical application of FBO manager skills.

**APM485 – AIRPORT DEVELOPMENT AND MANAGEMENT – 3 credits**

This course builds upon APM241 Airport Administration, and further develops the skills and understanding of operation, management and conceptual design of airports of any size. Content focuses on practical application of airport manager skills and includes educational tours of operating airports. Relations with tenants, public officials and patrons will be emphasized through writing and public-speaking skills. An expansion of the issues affecting modern airports today, such as safety, how airports are funded, and technological innovations affecting airports are discussed.

**ATC200 – BASIC AIR TRAFFIC CONTROL I – 4 credits**

This course will introduce students to topics on airport communications and airspace use, including separation, Federal Airworthiness Regulations (FARs), principles of flight, wake turbulence and aircraft characteristics and recognition, and weather, with particular emphasis on air traffic control systems.

A basic knowledge of meteorology is required. This course is intended for students who are not enrolled in the associate in applied science or bachelor in aircraft operations (flight) degree programs, but those who intend to become eligible for recommendation to the AT-CTI program.

This course may be taken as an elective for some programs. Completion of this course with a grade of "C" or better, with ATC240 Basic Air Traffic Control II, FLT231 Aviation Weather and FAA-required counseling, would allow students to become eligible for recommendation to the AT-CTI program. Refer to the AT-CTI program description in this catalog for more information on FAA requirements.

Students enrolling in this course after spring 2013 and are enrolled in the CTI Program are required to have simulator training lab credits Simulator lab fee required.



**ATC200CL – BASIC AIR TRAFFIC CONTROL I: CONTROL TOWER PROCEDURES – 1 credit**

Explains operating techniques of air traffic control (ATC) airport facilities in visual and instrument conditions. Includes operations of airport lighting systems, proper phraseology, separation requirements, control techniques and emergency actions.

**ATC200TL – BASIC AIR TRAFFIC CONTROL I: TERMINAL RADAR PROCEDURES – 1 credit**

Explores RADAR theory fundamentals and systems operation in air traffic control. Examines procedures of instrument traffic control in the terminal radar environment.

**ATC200CS – BASIC AIR TRAFFIC CONTROL I: CONTROL TOWER PROCEDURES SIMULATION – 0 credit**

Employs hands-on time in the control tower simulator. Emphasizes real life air traffic control situations to develop techniques for the manipulation of air traffic during taxi, takeoff and landing. Corequisite: ATC200CL or concurrent enrollment.

Simulator lab fee required. Grade mode: pass/no pass

**ATC200TS – BASIC AIR TRAFFIC CONTROL I: TERMINAL RADAR PROCEDURES SIMULATION – 0 credit**

Employs hands-on time in the control tower simulator. Emphasizes real life air traffic control situations to develop techniques for the manipulation of air traffic during taxi, takeoff and landing. Corequisite: ATC200TL or concurrent enrollment.

Simulator lab fee required. Grade mode: pass/no pass

**ATC220 – ATC WEATHER – 3 credits**

Multiple phases of meteorology are examined and applied by students. Principles of meteorology, familiarization with preflight weather briefings, en route weather reports and weather hazards are studied, preparing students for flight applications. The laboratory portion ensures that the use of the Aviation Digital Data Service (ADDS) is completely integrated into flight plan preparation by using weather maps and forecasts. This course can be taken as a basic science elective and is also part of the required set of courses for any student wishing to participate in the College's partnership program with the Federal Aviation Administration, the Air Traffic-Collegiate Training Initiative (AT-CTI) program. A grade of "C" or better is required for the AT-CTI program. Students not in the AT-CTI program can take an alternative section of the weather course, FLT230, Aviation Weather.

Both ATC220 and lab and FLT230 also count as math/science electives.

**ATC240 – BASIC AIR TRAFFIC CONTROL II – 4 credits**

This course builds upon instruction of airport communications and airspace use covered in ATC200, with particular emphasis on air traffic control systems. Topics include special operations, basic navigation, charts and publications, emergencies, search and rescue standard instrument departures and standard arrival routes, weather, pilot's environment, stripmaking and air traffic control clearances. A basic knowledge of meteorology is required.

Completion of this course with a grade of "C" or better, together with ATC200 Air Traffic Control I, ATC220 Aviation Weather and Federal Aviation Administration required counseling, allows students to become eligible for recommendation to the AT-CTI program. Please refer to the AT-CTI program description in this catalog for more information on FAA requirements. Simulator lab fee required. Prerequisite: ATC200; corequisite: ATC220

**ATC240EL – BASIC AIR TRAFFIC CONTROL II: ENROUTE PROCEDURES – 1 credit**

Explores procedures of instrument traffic control in an EnRoute RADAR environment. Emphasizes longitudinal, vertical and lateral separation of air traffic.

**ATC240NL – BASIC AIR TRAFFIC CONTROL II: NON-RADAR PROCEDURES – 1 credit**

Explores procedures of instrument traffic control in a non-RADAR environment. Emphasizes longitudinal, vertical and lateral separation of air traffic.

**ATC240ES – BASIC AIR TRAFFIC CONTROL II: ENROUTE SIMULATION – 0 credit**

Explores techniques of longitudinal, vertical and lateral separation of air traffic using lab scenarios designed to develop routine problem-solving processes to adapt the student controller to real-life air traffic control situations. Corequisite: ATC240EL or concurrent enrollment.

Simulator lab fee required. Grade mode: pass/no pass

**ATC240NS – BASIC AIR TRAFFIC CONTROL II: NON-RADAR SIMULATION – 0 credit**

Explores techniques of longitudinal, vertical and lateral separation of air traffic using lab scenarios designed to develop routine problem-solving processes to adapt the student controller to real-life air traffic control situations. Corequisite: ATC240NL or concurrent enrollment.

Simulator lab fee required. Grade mode: pass/no pass

**ATC300 – BASIC AIR TRAFFIC CONTROL CAPSTONE REVIEW AND SCREENING – 0 credits**

This course will be a cumulative review of the basic skills

covered in the program and is completed after graduation. Students will be tested at the end of this course as part of the overall screening process. This course will assist students in reinforcing the material covered during the program and serve as a refresher course before the selection process and prior to entering the Federal Aviation Administration Academy.

The review course will be offered online only. To pass the course, students need to score a grade of 80 or better on the screening exam. The course grading will be a P (pass) for satisfactory course completion or an F (fail) for unsatisfactory course completion. There is no charge for this course. Students can participate in as many ATC300 sections as they desire, without additional charges, to ensure a strong air traffic basics foundation as they enter the FAA Academy. There are no additional fees associated with ATC300. The course was incorporated into the curriculum for students entering the program beginning in the fall 2008 semester. Prerequisites: ATC200, ATC220, ATC240, FLT110, FLT110L graduated from an approved program..

#### **ATM320 – AVIATION LAW – 3 credits**

Functions of federal and local regulatory agencies with regard to legislation concerning aviation will be covered. Topics include aircraft operation, maintenance, noise and air pollution. Case studies will provide the foundation for discussions.

#### **ATM340 – AUDITING AND RISK MANAGEMENT – 3 credits**

The auditing and risk management course provides students with the opportunity to create an emergency management plan for an aviation organization. Principles for forming an organization-wide safety culture that includes a non-punitive reporting system to identify hazards before they become incidents, accidents or violations will be discussed. Students will investigate inspection systems that aim to ensure that procedures, personnel and hardware are functioning well. Monitoring systems to track and predict operational trends to assess risks and inform decisions for the organization will be analyzed. These preventive measures are considered in relation to economic business principles as well as to national and international regulations and trends. Emergency response principles and procedures will also be studied.

#### **ATM345 – INTERNATIONAL TRADE AND FINANCE – 3 credits**

An analysis of the theory of international trade and trade policies; the foreign exchange markets and factors affecting exchange rates; and open-economy macroeconomics. Attention will be focused on the impact of foreign trade on the aviation industry and the industry's contribution to economic development. Aviation applications include code sharing and other international airline agreements, the impact of trade

subsidies and open skies treaties. Prerequisites: MGT230; ECO255 or MGT240, *fall offering only*

#### **ATM 360 – EXPORT AND IMPORT POLICIES AND PRACTICES – 3 credits**

The course focuses on procedural practices and methods used in the handling of exports and imports. Areas treated are the US Customs and Border Protection regulations and practices, tariff legislation, types of duties, sales contracts, price quotations, landed cost prices, merchandise entries, import documents and the preparation of export documents applicable to specific countries.

#### **ATM400 – INTERNATIONAL AIR TRANSPORT MANAGEMENT – 3 credits**

This course addresses issues related to the international aviation marketplace, the current international regulatory framework and the environment within which they exist. It examines cost effectiveness, marketing, operations, finance, strategic planning and management within air transportation, and the efficient utilization of aircraft for the international transportation of passengers and cargo. This course can be used as a management elective in airport management, general management or the aircraft operations programs or in lieu of ATM345 International Trade and Finance in the airline management program.

#### **ATM420 – CUSTOMS BROKER POLICIES AND PRACTICES, LOGISTICS AND FREIGHT FOWARDING – 3 credits**

This course will explain the policies and procedures underlying the operation of private sector industry export and import businesses with a view to helping students develop their entrepreneurial skills in these areas. Topics that will be covered include import and export management, domestic and international government agencies and their regulations, compliance management, packing and shipping requirements, and customs explanations.

#### **ATM450 – AIR TRANSPORTATION AND CARGO MANAGEMENT – 3 credits**

Students learn the principles and logistics of air travel and other forms of transportation. This course examines the impact of transportation on the overall economy; the principal operating and financial factors for each mode of transportation; management practices and problems involved in the air cargo industry; and decision-making from the perspective of process for both carrier and user. There is also some coverage of the International Air Transport Association (IATA) rate and tariff problems, and an overview of dangerous goods regulations. Prerequisites: ALM135, ATM345; *spring offering only*

#### **ATM452 – AVIATION TRANSPORT REGULATIONS – 3 credits**

This course is an introduction to Federal Air Regulations

(FARs). It provides an in-depth study of FAR Part 107, Part 108, Part 139 and other FARs pertaining to aviation management. It also includes an introduction to other aviation organizations and the international rules as established by the International Civil Aviation Organization (ICAO). *Fall offering only*

#### **AVM332 – AVIONICS CIRCUITS I – 4 credits**

This course discusses basic electronic devices and circuits. Topics include diodes, bipolar transistors, field effect transistors, rectification, filters, voltage regulators, voltage amplification, power amplifiers and vacuum tubes. Classwork is complemented by laboratory experiments. Prerequisites: A&P certificate, MAT115; *fall offering only*

#### **AVM481 – AVIONICS LINE MAINTENANCE I – 4 credits**

This course covers fundamental issues in heavy transport aircraft line avionics maintenance such as scope of line maintenance and ramp safety, introduction to logic circuits and digital information transfer systems, use of aircraft wiring diagrams and schematics, multiengine and twin-engine heavy transport aircraft electrical power generation, control and distribution systems. Laboratory work is included in this course. Prerequisite: A&P certificate; *spring offering only*

#### **AVM482 – AVIONICS LINE MAINTENANCE II – 4 credits**

This systems course begins with a continuation of the introduction to digital electronics and information transfer systems such as Aeronautical Radio Incorporated (ARINC) 429, 561 and 629. Other systems covered include electromechanical flight instruments and synchros, Electronic Flight Instrument System (EFIS), Engine Instrument Crew Alert System (EICAS), and inertial reference systems, as well as flight management and navigation systems. Very high frequency omnidirectional range (VOR), instrument landing system (ILS) and surveillance systems such as air traffic control transponders, traffic alert and collision avoidance systems (TCAS), and weather radar will also be covered. Introduction to global positioning system (GPS) satellite navigation is also included. Laboratory work is a significant part of the course. Prerequisite: AVM481; *fall offering only*

#### **AVM483 – AVIONICS LINE MAINTENANCE III – 4 credits**

This course covers additional selected avionics systems beginning with the fundamentals of radio frequency issues for the line avionics technician, including typical superheterodyne receiver and transmitter operation at the block diagram level, antennae, transmission lines and wave guides. Systems include very high frequency (VHF) and high

frequency (HF) communications, aircraft communication and reporting system (ACARS), interphone systems, cockpit voice recording and flight data recording. Also covered are heavy transport flight control and hydraulics systems, in which students are introduced to flight operations and navigation methods involving autoflight control systems. Laboratory projects using line aircraft, avionics communications, radio and cockpit mock-ups reinforce lecture material. Prerequisite: AVM481; corequisite: AVM482; *spring offering only*

#### **AVT235 – AIRCRAFT NAVIGATION SYSTEMS – 3 credits**

This course covers the principles of very high frequency navigation receivers, including very high frequency omni directional range (VOR) localizer, glide-slope and marker beacon receivers. Other topics include long-range navigation systems, such as inertial navigation systems and GPS. Classwork is supplemented by lab exercises. Prerequisites: EET220

#### **AVT240 – AIRCRAFT PULSE SYSTEMS – 3 credits**

This course is a study of air traffic control transponders and distance measuring equipment, including encoding, decoding pulse transmission, signal reception and processing. Classwork is supplemented by lab computer-aided testing, alignment and troubleshooting. Prerequisite: EET220

#### **AVT245 – RADAR SYSTEMS – 3 credits**

This course covers the principles of pulse and microwave circuits as typically applied to search and weather radar. Weather radar and radar altimeter system topics include timing, transmitter, modulator, receiver, signal processing and display circuits. Classwork is complemented by laboratory exercises. Prerequisite: EET220

#### **AVT250 – FCC LICENSE REVIEW – 0 credit**

This course prepares students for the Federal Communications Commission (FCC) General Radiotelephone License examination. This course requirement must be satisfied to be eligible for graduation. Prerequisites: EET116

#### **AVT346 – AIRCRAFT POWER AND DISTRIBUTION SYSTEMS – 3 credits**

This course covers the operation of common types of small and large aircraft power-generating systems, including AC and DC aircraft power distribution systems. It also covers aircraft batteries, their use in the electrical system as well as their limitations. Classwork is complemented by laboratory exercises. Prerequisite: EET220; *fall offering only*

**AVT347 – FLIGHT CONTROL SYSTEMS  
– 3 credits**

This course covers the principles of conventional and fly-by-wire flight control systems, including the autopilot and flight director system. The course also covers gyroscopes, synchros and instrumentation. Classwork is complemented by laboratory exercises.

Prerequisite: AVT235; *fall offering only*

**AVT349 – ELECTRONIC FLIGHT  
INSTRUMENT AND FLIGHT  
MANAGEMENT SYSTEMS – 3 credits**

This course covers the principles of conventional analog and glass cockpit electronic flight instrument systems (EFIS) and flight management systems (FMS). The course includes control maintenance computers, avionics data bus principles, cathode ray tube and liquid crystal display technology. Classwork is complemented by laboratory exercises. Prerequisite: AVT235

**AVT351 – ADVANCED NAVIGATION  
SYSTEMS – 3 credits**

This course covers the principles of advanced navigation systems, including SBAS (Satellite-based augmentation systems) such as WAAS, EGNOS, etc. Also covers elements of NEXTGEN such as RNAV/RNP, LPV and ADS-B. International GNSS systems such as GLONASS and GALILEO are discussed. Classwork is complemented by laboratory exercises. Prerequisites: AVT 235

**AVT352 – INTEGRATED AVIONICS  
SYSTEMS – 3 credits**

This course covers the principles of integrated avionics systems, including flight management systems (FMS), area navigation (RNAV), integrated avionics processor systems (IAPS), integrated modular avionics (IMA) and advanced distributed architectures. These systems are discussed as implemented on small general aviation aircraft as well as large commercial airliners. Prerequisite: AVT235, AVT240

**AVT453 – TRAFFIC ALERT AND  
COLLISION AVOIDANCE SYSTEMS  
– 3 credits**

This course covers the principles of traffic alert and collision avoidance systems (TCAS), including mode “s” transponder integration, diversity operation and flight displays. It also covers principles of wind shear detection. Classwork is complemented by laboratory exercises. Prerequisite: AVT240

**AVT454 – AVIONICS INSTALLATION  
AND MAINTENANCE – 3 credits**

This course covers the principles and practices of avionics system integration and installation on

current aircraft. Subjects include avionics line replaceable unit design, aircraft mechanical/electrical and environmental interfaces, Federal Aviation Administration regulations and certification, standardization of avionics systems and avionics manufacturers’ specifications. Also covers sheet metal/composite familiarization and fabrication, maintenance and inspection practices. Aircraft weight and balance computations are included. Classwork is complemented by laboratory exercises. Prerequisites: EET210; *fall offering only*

**AVT455 – AVIONICS RELIABILITY  
AND MAINTAINABILITY – 3 credits**

This course covers the application of probability theory and statistics to avionics systems, with emphasis on reliability and maintainability engineering, failure reporting and maintenance actions. Prerequisite: MAT356

**AVT456 – AVIONICS INTEGRATED  
LOGISTICS SUPPORT – 3 credits**

This course covers the integrated logistics support (ILS) of avionics and support systems, including test equipment, tools and maintenance resources. Also covers field service, customer service, product support, publications, training, packaging, computer resources, reliability and maintainability engineering. Prerequisite: AVT349

**CD101 – CAREER DEVELOPMENT  
SEMINAR – 0 credit**

A second-semester course that prepares students for the many career opportunities available to them as students and graduates. Topics covered include résumé preparation, networking and interviewing skills, industry news, internships and various other job search techniques.

**CDE117 – COMPUTER-AIDED DESIGN I – 2  
credits**

The goal of this course is to provide an introduction to engineering graphics and computer-aided design with engineering standards. This is accomplished by examining the role of the computer in the present design process. Topics include computer graphics, computer aided-design and drafting (CAD) geometric construction, orthographic projection dimensioning, section and auxiliary views, dimensioning, developing detailed drawings, 3-D modeling and introduction to assembly drawings.

**CDE375 – COMPUTER GRAPHICS AND DIGITAL  
TECHNOLOGY FOR ENGINEERS – 2 credits**

This course will introduce engineering students to practical 2-D/3-D computer graphics and rapid prototyping. Special attention will be given to the



development of portfolio and presentation materials. Students will practice manipulation of 2-D bitmaps, scans, vectors and digital photos. Students will develop presentation graphics for print, animation and the Internet using Adobe Photoshop and Illustrator. Modeling and animation with 3-D's Max 2010 will focus on architectural and product renderings. Solid Edge and CATIA models will be converted to 3-D's Max for product visualization and animation. The class will end with a rapid prototyping project in which students explore options for printing out 3-D solid models.

### **CDE385 – CATIA I – 2 credits**

Computer-aided three-dimensional application (CATIA) fundamentals is a course that is organized around real-world problems that would be solved using descriptive geometry exercises as a foundation and the computer-aided design (CAD) application as a helpful tool. Vectors, transformations, geometric modeling concepts, techniques and methodologies are discussed. Demonstrating the use of the CAD tool to the solution of concepts in other courses in the mechatronics program is a primary focus of the course. This will enable students to revisit concepts in other solid mechanics courses within the program (e.g., statics and strength of materials). One example will be a free-body wireframe model that students will solve by sketching and representing in a CAD drawing. The dynamic link between the two files (.catpart and .catdrawing) is used to illustrate changes in loading conditions.

The application of CAD to industrial problems is also a topic of discussion, such as how design and manufacturing can be improved through the linking of CAD to computer-aided manufacturing applications. The standards used for file conversions and incompatibility issues will also be discussed. Prerequisite: CDE117

### **CDE386 – CATIA FOR WIRING AND HARNESSING – 3 credits**

The primary objective of this course is to teach students the basic skills needed to design 3-D electrical wire harnesses and parts using CATIA V5. In addition, students will learn how to read and use wiring block diagrams and schematics; gain a healthy knowledge of aircraft power distribution system and wiring practices based on industry standard (SAE and FAA guidelines). Two hours of classwork will be complemented by three hours of lab work per week. Hands-on exercises representing real-world, industry specific design scenarios are included. Prerequisites: CDE117

### **CDE480 – COMPUTER-AIDED DESIGN II – 2 credits**

This goal of this course is to provide the students with the knowledge of more advanced topics in engineering

graphics and parametric modeling using widely available commercial CAD package (Solid Works). The topics will also include assembling, geometric tolerances, gear design, threads and fasteners standards, lofting concept and sheet metal bending. Students will also improve their ability to communicate using graphics. Prerequisite: CDE117

### **CDE486 – CATIA II – 2 credits**

This course focuses on more advanced assemblies. Other workbenches not covered in CDE385 are used, such as Digital Mock-up (DMU), Prismatic Machining and Kinematics. Students are required to make a final presentation on an approved project.

Prerequisite: CDE385

### **CDE487 – CATIA III – 2 credits**

The course will cover measurement, quality assurance and tolerances in addition to material removal processes. It will include chip-type machining, and cutting tools for machining, turning, boring and its derivatives. Milling and drilling will also be covered extensively, as well as numerical control and machining centers and the principles of the languages used in their operations. During the second half of the semester, the CATIA prismatic machining module will be used to virtually design and machine a series of parts using the processes already learned. Students will create a network computer code and input it into the program to prove out the part. Upon completion of the course, the student will feel a sense of accomplishment in not only designing the part but also in its manufacture.

Prerequisite: CDE486

### **CDE488 – FINITE ELEMENT ANALYSIS WITH CATIA – 2 credits**

This advanced elective course presents students with an introduction to computer aided engineering (CAE). Finite Element Analysis (FEA) is a numerical technique for finding approximate solutions to field equations in engineering. The field equations can originate from different fields such as solid mechanics, heat transfer and electromagnetism, where complex domains such as aircraft and automobiles undergo a solid-state reaction. The course also includes a laboratory component that incorporates linear stress analysis using the CATIA V5 application. Prerequisite: CDE487

### **CDE490 – CATIA COMPOSITE PRODUCT DESIGN – 2 credits**

This composites design course is intended to provide a comprehensive introduction to the CATIA Composites Design Workbench covering composites engineering, including the definition of zones, plies, limit contours, staggering, laminate stack, cores, composites/stack information and composites manufacturing; productability

analysis, transfer to production tool form, ply flattening, splicing, darting, inspection, ply export and ply book generation. From this course students will be able to develop CATIA composite parts from the initial surface form through to the ply book detailing all cutting and placement details. Prerequisites: CDE385, EGR340

### **CHE230 – CHEMISTRY – 3 credits**

In this introductory course, topics include the structure of matter, compounds, chemical laws and reactions, gases, liquids, solids, solutions, electrolytes, oxidation reduction and chemical safety. Also included are the periodic table, molecular bonding and acids/bases, as well as consumer chemistry, household chemicals and nutrition. Classwork is supplemented by laboratory demonstration.

### **CSC111 – COMPUTER SCIENCE I – VISUAL BASIC – 3 credits**

Introduction to structured programming in the Visual BASIC language. Emphasis is placed on applications to science and technology. The course includes flow charting, variable assignments, conditional looping and input/output statements. Students are required to complete programming projects utilizing the BASIC programming language. CSC111 may be replaced by CSC215 or CSC316 in any program. Prerequisite: MAT109 or equivalent mathematics.

### **CSC210 – ADVANCED COMPUTER APPLICATIONS – 3 credits**

An advanced course in document management using Microsoft Office. Topics covered in this course include desktop publishing, outlines, tables, styles and macros, advanced database and worksheet design, multiple table queries, subforms, 3-D workbooks and Solver. PowerPoint presentation graphics and multimedia will be used.

### **CSC215 – NUMERICAL COMPUTATIONS USING MATLAB® – 3 credits**

This elective course will use MATLAB to do computations important in technology, including graphing functions, constructing tables, solving equations and computing areas. Computer programming concepts as used in MATLAB® such as input, output, logic and loops will be covered. CSC215 may replace CSC111 in any curriculum. Corequisite: MAT115

manipulation. CSC316 may replace CSC111 in any curriculum. Corequisite: MAT120 or MAT125

### **DP209 – AAS DEGREE PROJECT – 1 credit**

This project course involves the writing of a report and the construction of a model or device that is of current technical interest. The level of required performance is commensurate with that of the AAS in aeronautical engineering technology degree. Students enrolled in the AAS in aeronautical engineering technology program must complete a project that includes a working model and report that must be approved by the department chair. Prerequisites: EGR220, EGR230

### **DP407 – DEGREE PROJECT – 3 credits**

A requirement for graduation for those seeking a bachelor of science degree in aviation maintenance or aviation maintenance management. Each student is required to submit a comprehensive research report and make an oral presentation demonstrating an exceptional level of knowledge in their area of study. This project is prepared to qualify for graduation and must be on an approved technical subject. Students are required to prepare a proposal at the beginning of the semester for approval; a strict timeline will be followed for successful completion. The paper and oral presentation shall be prepared using American Psychological Association (APA) format.

### **DSG110 – DESIGN, DRAWING AND AESTHETICS – 3 credits**

The purpose of this foundation lecture/studio is to provide engineering and technology students with fundamental design, drawing and aesthetic skills. We will explore theories, concepts and ideas related to design, the design process, creative drawing visualization, experimentation, audience and users, visual design principles, aesthetics, concept development, organizational and structural methods and systems, perception and communication. Exercises to develop basic design skills will be done throughout the semester.

### **DSG245 – 2-D COMPUTER GRAPHICS PHOTOSHOP – 3 credits**

This course explores Photoshop possibilities for printing and computer graphics, showing the preparation of images for publishing (print and the World Wide Web), advertising, multimedia and broadcasting. It presents principles for effective graphic design and composition of still and moving images for several software applications, such as 3-D Studio Max, Premiere, Flash, Director and others. Prerequisites: CSC110, DSG110

### **118 CSC316 – C++ PROGRAMMING – 3 credits**

An introduction to object-oriented programming using the C++ language. Topics include C++ syntax, basic input/output, data types, pointers and functions. This course will involve programming exercises intended to increase students' understanding of the use of computers for computation and data



**DSG246 – IMAGE-READY PHOTOSHOP FOR THE WEB – 3 credits**

This course will cover Photoshop design tools and techniques, image capturing, selection and manipulation. It will concentrate on designing with type, creation of logos, animated banners and special visual effects (glows, masks and drop shadows) with special focus on design for the Internet. Students will also learn image optimization for quick web images upload, gif animation and creation of 3-D animated logos for the web through current bandwidth–56k, T1 and DSL. The course will feature lectures with hands-on demonstrations, screening and analysis of samples. Students will be required to complete several assignments and a final project. Given the intensive nature of this course, basic knowledge of Photoshop techniques is helpful. Prerequisite: DSG245

**DSG247 – STORYBOARD AND CHARACTER DESIGN – 3 credits**

This course includes the concept and development of storytelling through storyboards. Introduction to character design, expressions, motion, styles by drawing on paper, then scanning to computer. Students must complete a storyboard for future modeling and animation classes. Prerequisite: DSG110

**DSG250 – 3-D ANIMATION – INTRODUCTION TO 3-D STUDIO MAX – 3 credits**

This course covers 3-D design using 3-D Studio Max software. Topics include the main tools: 3-D geometric primitives, Boolean objects, morphing techniques and the materials editor. With the use of camera placements, lighting techniques and surface materials, students will create artistically rendered and photo-realistic 3-D scenes. Introduction to beginning animation techniques will also be covered. Prerequisite: CDE117

**DSG260 – ADVANCED ANIMATION 3-D STUDIO MAX – 3 credits**

This course covers more advanced rendering and lighting techniques, as well as basic 3-D animation using 3-D Studio Max and Crystal 3-D. Students learn to set up a camera, lenses, dummy objects, motion paths and the use of Video Post. Prerequisite: DSG250.

**DSG261 – 3-D GRAPHICS – MODELING MAYA – 3 credits**

This course covers more complex 3-D modeling, rendering, lighting and basic animation techniques using Maya software. The focus will be on the creation of more complex 3-D geometry through the use of Boolean, morphed and lofted objects, as well as creating photo realistic scenes. Animating 3-D

objects through the use of cameras and motion paths will be covered. Prerequisite: DSG250

**DSG262 – ADVANCED ANIMATION – SPECIAL EFFECTS – 3 credits**

This course covers advanced animation using 3-D Studio Max with Particles. Students will learn to create complex animated scenes, warps, distortions, use of plug-ins and special visual effects (explosions, pyrotechnics, rain, snow, etc.) for broadcasting, motion pictures, DVDs and video games. Prerequisites: DSG250, DSG260

**DSG263 – DIGITAL VIDEO EDITING – 3 credits**

This course offers students the opportunity to learn prepublication and basic digital video editing using Adobe Premiere. It includes production of completed shorts. Emphasis is placed on creating professional videos used in television advertising, broadcasting and the motion picture industry. Prerequisites: DSG245, DSG262

**DSG264 – AUDIO EDITING FOR VIDEO AND MULTIMEDIA – 3 credits**

This course offers students the opportunity to learn advanced digital video editing using Adobe Premiere, Ulead Video and A. It includes the production of completed video exercises. Emphasis is placed on creating professional videos used in television advertising, broadcasting and the motion picture industry. Prerequisite: DSG110

**DSG265 – INTRODUCTION TO INTERACTIVE MEDIA – 3 credits**

This introductory lecture/workshop will explore interactivity as an emerging form of communication in the information age, and provide students with a comprehensive understanding of the uses, theory, production methods, technology and vernacular of interactive media. The students will use current tools (such as Director 7, Photoshop and html) and techniques in creating an interactive media project. Commercial multimedia titles, sales and marketing presentations, and websites are analyzed as models. Prerequisites: DSG110, DSG245

**DSG267 – ANIMATION FOR VIDEO GAMES/ BLENDER – 3 credits**

This course offers students the opportunity to learn basic animation for video games using Maya models and interactive concepts with Blender technology. A brief introduction to Lingo is included. This course offers students the opportunity to learn interactive techniques for video games with Blender, combining animated

models, navigation menus and altitude as well as time play controls. Prerequisites: DSG250, DSG262

### **DSG268 – LOGO DESIGN – 3 credits**

This course focuses exclusively on the planning, design and creation of identification logos using Photoshop, Illusion, Font-Twister and 3-D Crystal PRO for print, CDs and multimedia, video productions, broadcasting and the World Wide Web. Students learn how to create one of today's top demanded graphic elements: from identification logos to television on-air and prime-time IDs, movie titles and corporate logos for all media. Prerequisites: DSG245, DSG250

### **DSG269 – ADVANCED MAYA MODELING AND ANIMATION – 3 credits**

This project-based course covers complex model building and rigging for 3-D animation. Students will learn the workflow required to create high-quality models for video games and the product design industries. Course projects will focus on building detailed characters, vehicles and environments. The class objectives include UV texturing, detailing, animation and rendering objects in Mental Ray. At the end of the course, students will have a solid foundation required to build scalable high-resolution models suitable for both next-gen video games and movies. Prerequisites: DSG250, DSG264

### **DSG270 – CHARACTER ANIMATION FOR VIDEO GAMES – 3 credits**

This course offers students the opportunity to learn character animation for video games importing Maya and Blender models applied to Blender interactive technologies.

### **DSG272 – ZBRUSH DIGITAL SCULPTING – 3 credits**

Students will learn how to use ZBrush's advanced Pixol technology to create 3-D organic forms, such as animals, human anatomy and hard-surface scene assets. The course will provide special focus on 3-D retopology for animation and game engines. Students will practice vertex-based polypainting, UV coordinate texturing for geometry. Students will use ZBrush to create 16/32-bit displacement maps and the extraction of diffuse, specular and normal maps for production. This course will cover the workflow required for rapid prototype output and print their creations on the Z-Corporation 450 3D printer. The first half of the course covers software use and related theories. The second half employs a project-based approach in which students design and build their character or scene asset.

### **ECO255 – INTRODUCTION TO MACROECONOMICS**

#### **– 3 credits**

This first course in economics will begin with basic concepts in Economics and the tools of economic analysis. Topics covered include supply and demand, their determinants and market equilibrium, total output and growth of an economy, employment, inflation and interest rates. The course will finish with an introduction to international economics. Prerequisite: MAT 115.

### **EET115 – ELECTRICAL CIRCUITS I**

#### **– 3 credits**

This course will cover resistance, Ohm's law, Kirchhoff's laws, networks with DC current and voltage sources; branch current analysis, and mesh and nodal analysis. Topics will also include superposition theorem, Thevenin's and Norton's theorems. Two hours of lecture will be supplemented by a three-hour lab per week.

### **EET116 – ELECTRICAL CIRCUITS II**

#### **– 3 credits**

This course builds upon EET115 with a review of the application of Thevenin's, Norton's and superposition theorems, and the analysis of AC circuits through sinusoidal waveforms; impedance and phasor quantities. It also includes electromagnetism and electromagnetic induction, inductance and inductors, series and parallel RL circuits, series and parallel RC circuits, transformers, RLC series and parallel circuits. Two hours of lecture will be supplemented by a three-hour lab per week. Prerequisites: EET115, MAT115

### **EET125 – DIGITAL ELECTRONICS – 3 credits**

Students will study number systems; Boolean algebra; logic circuits, gates, combinational circuits, flip-flops, sequential circuits, counters, shift register, memory interfacing and introduction to microprocessors. Two hours of lecture will be supplemented by a three-hour lab per week. Prerequisite: EET115

### **EET210 – ELECTRONICS LABORATORY PRACTICES – 2 credits**

This course provides an introduction to safe practices to be followed to ensure basic electrical safety in the laboratory. The course also provides the necessary skills in soldering techniques, both on printed circuit boards and on connectors and harnesses with an emphasis on aircraft wiring. The course covers the wiring problems associated with aging aircraft. Crimping techniques used for wiring on aircraft are covered. One hour of classwork will be complemented by three hours of lab work per week. Prerequisites: EET115

**EET220 – ELECTRONIC CIRCUITS – 3 credits**

This course introduces the basic electronic devices and circuits. Topics include diodes, rectifier, filters, voltage regulator, limiter, and clipper/clamper circuits. Basic transistor theory, common emitter, common base and common collector connections, current gain, various biasing techniques of transistor and power amplifier are also covered. Both bipolar and field effect transistors will be discussed. Prerequisite: EET116

**EET230 – PRINCIPLES OF COMMUNICATION SYSTEMS – 3 credits**

Study and analysis of communication principles and systems will be covered. Topics include AM, FM modulation techniques, modulators, demodulators, superhetrodyne receiver, mixer, automatic gain control, feedback circuit, voltage control oscillator, phase-locked loop, frequency synthesizer circuits, transmission line and microwave system. Two hours of lecture will be supplemented by a three-hour lab experiment per week. Prerequisites: EET220, MAT120

**EET325 – PLC Programming – 3 credits**

This course will cover fundamentals of PLC programming. Topics include introduction to programmable logic controllers (PLCs) and programming languages: Ladder, Function Block Diagram (FBD), Instruction List (IL) and Structured Text (ST), implementation of gates, timers and counters in PLC, and essential concepts of industrial automation using PLC. In laboratory, Simatic manager Step 7 and Siemens 300 PLC will be practiced. Prerequisite: EET125.

**EET326 – MICROPROCESSORS – 3 credits**

Study of microprocessors and microcomputer systems. Topics include: microprocessor architecture, memory and memory interfacing, input/output systems, interrupt processing, microprocessor communications and microprocessor peripherals and interfacing, and assembly language programming. Two hours of lecture will be supplemented by a three-hour lab experiment per week. Prerequisites: EET125, EET220

**EET345 – COMPUTER CONTROL OF INSTRUMENTS – 3 credits**

This course covers computer control of electronic instrumentation via Institute of Electrical and Electronics Engineers (IEEE) standard 499 General Purpose Interface Bus for the purpose of data acquisition and its presentation. It also includes an introduction to Lab View programming and its application to the control of instruments. Corequisite: EET326

**EET350 – CONTROL SYSTEMS – 3 credits**

Basic control systems using Laplace transforms will be covered in this course, in addition to principles of electromechanical control systems. Other topics include servomechanism components, operational amplifiers, block diagram algebra, transfer functions, steady state and transient analysis of second order systems, frequency response analysis and bode plots. In addition, moments of inertia and friction are discussed. Prerequisite: MAT220; corequisite: MAT445

**EET355 – ADVANCED MICROPROCESSORS – 3 credits**

This course is a study of microprocessors, interfacing and applications. Interfacing basics include concepts of address decoding, three-state buffering, latching and timing. Topics include peripheral interface adapters, serial/parallel communications, memory and programmable timers. Application is made for optical sensing, displays, force sensors and control devices for relays and servers. Prerequisite: EET326

**EET409 – ELECTRONIC ENGINEERING TECHNOLOGY – ELECTRONIC CONCENTRATION DEGREE PROJECT – 3 credits**

This project is a capstone for students enrolled in the electronic engineering technology program. The project should demonstrate applications of the knowledge and technical skills gained through the curriculum. Students must submit a synopsis of the project in the beginning of the semester that must be approved by the faculty advisers. At the end of the semester, students must submit a complete report and present a seminar. Prerequisites: EGR380, EET355

**EET445 – PRINCIPLES OF COMMUNICATIONS NETWORK – 3 credits**

This is an introductory course in data communications, computer communications and networking. Data communications principles and techniques and local metropolitan area networks will be covered. Introduction to protocols, architecture and Internet working will also be given. Prerequisites: EET230, MAT445

**EET475 – RELIABILITY AND MAINTAINABILITY – 3 credits**

This course covers the application of probability theory and statistics to systems with emphasis on reliability and maintainability, engineering, failure reporting and maintenance action. Prerequisite: MAT445

**EGR115 – ENGINEERING MECHANICS I  
– 3 credits**

This course is an analysis of forces on engineering structure in equilibrium. Properties of forces, moments, couples and resultants are discussed. Equilibrium conditions, friction, centroids and area moments of inertia are covered. Students receive an introduction to free body diagrams, mathematical modeling and problem solving. Vector methods are used throughout the course. Prerequisites: MAT115, PHY120; corequisite: MAT120

**EGR210 – THERMODYNAMICS – 3 credits**

This course discusses the fundamentals of thermodynamics, which include system concepts, state of equilibrium, processes' properties, Zeroth, first and second laws of thermodynamics, flow and non-flow processes. Carnot cycle and efficiencies of reversible conversions, irreversibility, entropy concepts, ideal gases and use of property tables are also covered. Prerequisites: MAT120, PHY220

**EGR215 – ENGINEERING MECHANICS II  
– 3 credits**

Course content includes rectilinear, curvilinear and dynamic motion, kinetics of rigid bodies, plane motion of rigid bodies and an introduction to mechanical vibrations. Prerequisites: EGR115, MAT120, PHY220

**EGR220 – STRENGTH OF MATERIALS I  
– 3 credits**

This course deals with the concept of stress and strain in materials under the action of axial and shearing forces, bending and twisting moments. The course content includes analysis of stress and strain, Hooke's law (stress-strain diagram), thermal stresses, torsion and beam analysis. Prerequisites: EGR115, MAT120

**EGR225 – STRENGTH OF MATERIALS II  
– 3 credits**

This course deals with the concept of stress and strain in materials under the action of transverse and combined loadings. This course will cover topics on transformation of stress and strain, principle stresses, beam deflection analysis, statically indeterminate beam analysis, strain energy and Castigliano's theorems for deformation analysis of beam, truss and frame structures. Prerequisites: EGR220, MAT220

**EGR230 – MECHANICAL TESTING AND  
EVALUATION LAB – 1 credit**

This laboratory course deals with the mechanical properties of testing and evaluation. The course involves both destructive and nondestructive testing. The object is

to test, analyze and understand the important mechanical properties in engineering design. The lab project involves teamwork activities from project development, analysis, testing and report presentation. Prerequisites: EGR235 or MEE235; corequisites: EGR220 or MEE220

**EGR235 – MATERIAL SCIENCE  
AND COMPOSITES – 3 credits**

This course covers atomic structure, metallurgy, plastic and ceramic materials. Material characteristics related to mechanical properties are emphasized. Composite materials and their application are investigated. Prerequisites: MAT115, PHY120

**EGR260 – AERODYNAMICS I – 3 credits**

This course introduces the basic principles of gas flow, the properties of air and their relationships to the standard (earth's) atmosphere, thermodynamic relationships, momentum equations, mach number and Reynold's numbers. This course also discusses fundamental aircraft theory, and the elements of lift and drag. Prerequisites: EGR210, PHY220

**EGR340 – COMPUTATIONAL METHODS  
IN ENGINEERING – 3 credits**

Topics covered are numerical analysis, finite difference approximation, matrix inversion methods, and implicit and explicit procedures. The course will feature analytical and numerical solutions to the differential equation of a physical problem, roots determination and application to the engineering systems, estimating first and higher derivatives using Taylor series expansion together with finite-difference techniques, finite-difference numerical solution to the governing equation of an engineering system, numerical integration and solution to the systems of linear algebraic equations with application to the engineering problems. The course will utilize MATLAB. Prerequisites: EGR220, MAT220

**EGR345 – FLUID MECHANICS – 3 credits**

The principles of fluid mechanics will be applied to various fluid systems. Topics covered include the flow of fluids in pipes, dimensional analysis, energy loss and addition, laminar and turbulent viscous flows, and friction and area change losses in piping systems. The course also includes computer applications. Prerequisites: EGR210, MAT220

**EGR350 – MECHANICAL VIBRATIONS – 3 credits**

This course is the study of free and forced vibrations of single- and multiple-degree of freedom systems with



and without damping, vibration isolation and absorbers, resonance phenomenon, introduction to the vibration of continuous systems, and mechanical and electrical models of vibrating systems. Prerequisites: EGR215, EGR225, MAT445

### **EGR355 – RELIABILITY METHODS IN STRUCTURAL MECHANICS – 3 credits**

The purpose of this course is to introduce the concepts of the theory of structural reliability and the reliability-based design formats. The tools needed in the course are probability, statistics and basic mechanics (statics, dynamics and strength of materials). Students are expected to have working knowledge of differential and integral calculus as well as basic mechanics. Upon completion of this course, students will be expected to be able to perform statistical load analysis and strength analysis, as well as to solve structural reliability problems, including design and safety checking under quasistatic loads. Prerequisites: EGR225, MAT220; *spring offering only*

### **EGR360 – AERODYNAMICS II – 3 credits**

This course is a continuation of EGR260 Aerodynamics I and includes basic compressible flow theory. The subject matter includes inviscid compressible flow, shock and expansion waves, one-dimensional flow theory, wing theory, principles of stability and control, and aircraft propulsion. Prerequisite: EGR260

### **EGR365 – ELEMENTS OF MACHINE DESIGN AND KINEMATICS – 3 credits**

This introductory course utilizes the principles of statics, dynamics and strength of materials in the design of machine elements such as gears, shafts, bearings, springs, clutches and brakes. Topics covered include fatigue, theory of failure, dynamic loading conditions, fasteners, and the kinematic motion and control of machine parts and linkages by use of graphical, analytical and computer methods. Prerequisite: EGR215, EGR225; *fall offering only*

### **EGR370 – FINITE ELEMENT ANALYSIS – 3 credits**

This course deals with finite element modeling and analysis of engineering systems and analytical solution based on strain energy method. Topics covered include calculus of variation, derivation of Euler equations for the bar, heat transfer and beam-type problems. In this introductory course, students will learn about one-dimensional finite element modeling and analysis of rod, truss and heat transfer-type problems. Students will also learn to apply calculus of variation in developing finite element formulation for the beam-type problems. This course will feature the use of MATLAB in modeling and solving engineering problems. Prerequisite: EGR340

### **EGR375 – THERMO-FLUID LABORATORY – 1 credit**

The thermo-fluid laboratory is composed of hydrostatics bench, free and forced convection unit and wind tunnel. Through this lab, students have the opportunity to conduct experiments related to lift, liquid densities, pressure in still liquids and gases, hydrostatic pressure, Boyle-Marriott's law, surface tensions of liquids, flows in liquids and gases and free and forced heat convection coefficients measurement. This laboratory course will complement lecture classes such as fluid mechanics, aerodynamics and heat transfer. Prerequisite: EGR210 or MEE210, EGR345 or MEE345

### **EGR380 – ENGINEERING PROJECT MANAGEMENT – 3 credits**

This course deals with the process of managing, allocating and timing resources to achieve a given goal in an efficient and expedient manner. Exposure to real-world problems through case studies and other tools used to motivate personnel and to track progress of projects will be discussed. In addition to the book materials, Microsoft Project will be utilized for class exercises. Topics include: Work Breakdown Structure (WBS), Gantt Charts, Critical Path Method and Critical Chain Project Management (CCPM). Prerequisite: MAT220 or MAT225

### **EGR410 – THERMODYNAMICS II – 3 credits**

Fundamental process of cycle energy analysis of ideal and real systems, thermodynamics of fluid flow, properties and processes of gas and vapor mixtures, thermodynamics of reactive systems, modern gas and vapor power cycles and refrigeration cycles are covered. Prerequisite: EGR210; *fall offering only*

### **EGR440 – HEAT TRANSFER – 3 credits**

This course discusses the principles of heat transfer. Included is a discussion of conduction, convection, radiation and heat exchangers. Computer applications are also covered. Prerequisites: EGR210, MAT220

### **EGR450 – AIRCRAFT CONFIGURATION DESIGN – 2 credits**

Given a specification for a small, two-engine turboprop-type airplane, the student develops its overall configuration. Characteristics include fuselage, propulsion system, wing and high-lift devices, tail surfaces, landing gear arrangements, and weight and balance limitations. This is then adapted to a specified mission profile, all in conformance with the appropriate regulatory airworthiness and operational criteria. Lectures are supplemented with laboratory work. Prerequisite: EGR260

### **EGR455 – AIRCRAFT STRUCTURAL ANALYSIS – 3 credits**

In this course, an attempt is made to emphasize basic structural theory related to the aircraft design. Heavy emphasis is placed on the application of the elementary principles of mechanics to the analysis of aircraft structures. This course will cover topics on shear and bending stresses, spanwise air-load distribution, external load on the airplane, joints and fittings, design of members in tension, bending and torsion, design of webs in shear and deflections of structures. Prerequisites: EGR225, EGR340

### **EGR460 – ENGINEERING ECONOMICS – 3 credits**

Economic aspects of engineering design, construction and operation are covered. Selection among several alternatives, including annual cost, present worth and rate of return, are some of the methods of analysis discussed. Economic life and replacement are covered. Prerequisite: MAT220 or MAT225

### **EGR470 – QUALITY CONTROL – 3 credits**

A basic course in industrial inspection methods, the use of gauges, electronic and optical comparators, statistical analysis of mass produced items and the use of control charts to detect changes in process. Other topics covered are the setting of control limits and lot sizes for sampling, sampling by variables and attributes, percent prediction of probable defects in a monitored process, production control and production reliability. Prerequisite: MAT356

### **EGR489 – PATRAN-NASTRAN ANALYSIS – 3 credits**

This course is presented as an introductory course for new PATRAN users. This course deals with finite element modeling and analysis of engineering systems. Students will master the basic skills required to use PATRAN-NASTRAN in mechanical engineering application. The course emphasizes practical skills development through comprehensive, hands-on laboratory sessions. Students will become familiar with and learn to build analysis models using PATRAN with one-dimensional (rod, truss, beam and frame), two-dimensional (tension plate) and three-dimensional (solid objects) finite element modeling and analysis of engineering systems and components. Prerequisites: CDE117, EGR225 or MEE220

### **ELE220 – ELECTRONIC CIRCUITS – 3 credits**

This course covers basic electronic devices and circuits. Topics include diodes, rectifiers, filters and regulators. Basic transistor theory, biasing, gain and power amplifiers. Both bipolar and field effect transistors will also be analyzed. Introduction to basic logic gate circuits will be included. Prerequisite: ELE117

### **ELE230 – DIGITAL SYSTEMS DESIGN – 3 credits**

This course covers number systems, Boolean algebra, logic circuits, gates and combinational circuits. Flip-flops, sequential circuits, counters, shift registers, memory interfacing and introduction to microprocessors. Prerequisite, ELE117

### **ELE326 – MICROPROCESSORS – 3 credits**

This course is the study of microprocessors and micro-computer systems. Topics include: microprocessor architecture, memory and memory interfacing input/output systems, interrupt processing, microprocessor communications and microprocessor peripherals, and interfacing and embedded C programming. Two hours of lecture will be supplemented by a three-hour lab per week. Prerequisite: ELE230 and CSC316

### **ELE350 – CONTROL SYSTEMS – 3 credits**

This course provides a foundation in continuous-time linear control system analysis and design. Topics will include modeling dynamic systems, system transfer functions, transient response and frequency response, stability, control system design methods in both time and frequency domains. Prerequisites: MAT325, MEE340

### **ELE450 – DATA ACQUISITION AND APPLIED CONTROL SYSTEM DESIGN**

#### **– 3 credits**

This course covers electronic instrumentation based on IEEE 499 standard for General Purpose Interface Bus for the purpose of data acquisition and presentation. LabView and other software tools will be used to implement the control panel and functions of electronic instruments. Applied control designs using the measurements for real processes will be studied. This is a required course for the mechatronics engineering program. Prerequisites: ELE326, ELE350

### **ELE462 – ADVANCED DIGITAL DESIGN**

#### **– 3 credits**

This course deals with the design implementation and testing of digital systems using field programmable gate arrays (FPGAs). Topics include combinational logic technologies; multilevel logic synthesis, sequential logic design; basic computer architectures; design

### **ELE117 – DC/AC CIRCUITS – 3 credits**

This course covers DC and AC sinusoidal circuit analysis, including resistive, capacitive and inductive circuit elements, independent sources, and the ideal transformer, using Thevenin and Norton theorems. Two-hour lectures are supplemented by a three-hour lab per week. Prerequisite: MAT125



fundamentals and techniques using FPGAs; timing and hazards in digital logic; finite state machine optimization and state assignment, VHDL. This is an elective course for the mechatronic engineering program.  
Prerequisites: ELE230, ELE326

**ENG108 – BASIC SKILLS IN READING AND WRITING – 3 equivalent hours**  
See Basic Skills Courses, page 131

**ENG109 – INTRODUCTION TO COLLEGE WRITING – 3 equivalent hours**  
See Basic Skills Courses, page 131

**ENG110 – ENGLISH I – 3 credits**  
As the first college-level writing course, this class prepares students to write the full essay required in college coursework. Through the analysis of primarily non-fiction essays students learn how to consider audience, voice and purpose across the curriculum. Prerequisite: ENG109 or placement by academic advisor.

**ENG120 – ENGLISH II – 3 credits**  
This course, as a continuation of ENG110, furthers close reading and analysis of texts through the study of culturally diverse works of literature including poetry, drama and the short story. Students will review how to document sources in the Modern Language Association (MLA) style. Prerequisite: ENG110

**ENG210 – WORLD LITERATURE – 3 credits**  
This comprehensive survey course integrates the literary classics of the world, from ancient Greece through the contemporary period, with their historical and cultural backgrounds, including examination of major literary figures and their works. Prerequisite: ENG120

**ENG220 – AMERICAN LITERATURE – 3 credits**  
This course deals with the historical background and development of American writing and the relation of this heritage to a selection of 19th- and 20th-century authors. Formal papers are required of the student.  
Prerequisite: ENG120

**ENG240 – TECHNICAL WRITING – 3 credits**  
This course provides practice in the techniques of gathering, organizing and presenting information in the appropriate technical and business formats.  
Prerequisite: ENG120

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**ENG290 – PUBLIC SPEAKING – 3 credits**  
This course gives the student an opportunity to design, organize and practice several aspects of public speaking. It covers methods for informing, arguing and persuading, while it emphasizes self-presentation, focused on the needs of the audience and the use of illustrative materials.  
Prerequisite: ENG110

**FLT110 – GENERAL AERONAUTICS – 4 credits**

Subjects include theory of flight, environmental effects, basic aircraft and powerplant systems, weight and balance, operating data, basic navigation, basic meteorology, air traffic control principles, aviation safety and federal aviation regulations. Upon successful completion of this course, the student will have gained the aeronautical knowledge and experience necessary to apply for a Federal Aviation Administration (FAA) Private Pilot written examination. A grade of C or better is required to complete this course. The FAA Private Pilot written exam must be successfully passed to complete this course, unless this course is taken as an elective. Students taking the course to fulfill the AT-CTI requirements must complete the FAA written and laboratory experiences. As part of the laboratory experience, students are required to take five hours of simulator training and additional training to prepare for the FAA written exam as needed. Class II FAA medical certificate and financial counseling is required for students in the aircraft operations program.

FLT110 and its lab component has been required since spring 2013 for students in the AT-CTI program.

An exam, simulator and seminar lab fee are required.

**FLT111 – GENERAL AERONAUTICS FLIGHT REVIEW – 1 credit**

The flight review course will include the review and evaluation of students' flight operations during general flight training. Explanation and discussion of specific tasks, procedures and maneuvers, in which pilot competency must be obtained and demonstrated as per FAA regulations and Vaughn College standards, will be conducted on an individual basis. All students' flight activity will be evaluated following both the current published FAA practical test standards for the Private Pilot Certificate and FITS (FAA-Industry Training Standards). The student will have gained the experience, aeronautical and safety knowledge to complete the Private Pilot maneuvers necessary for the FAA flight test. Prerequisite: FLT110, Passed (and current) FAA Private Pilot Knowledge exam, Class III FAA Medical (Class I recommended) and FAA Student Pilot certificate; corequisite: Private Pilot flight training at an FAA- and Vaughn College- approved flight school and completion of a simulator flight review.

A simulator lab fee is required.

**FLT120 – INTERMEDIATE AERONAUTICS – 4 credits**

This course covers instrument pilot operations required to safely and accurately operate an airplane under Instrument Flight Rules (IFR) within the National Airspace System. It includes a study of the operation of airplane flight instruments and navigation equipment, meteorology,

Federal Aviation Regulations pertinent to instrument flight, air traffic control procedures, flight physiology and instrument approach procedures. The course also includes preparation for the Federal Aviation Administration (FAA) instrument rating written examination. It is recommended that students also complete the FAA instrument instructor knowledge examination. A grade of “C” or better is required to complete this course. The FAA instrument rating written exam must be successfully passed to complete this course, unless this course is taken as an elective. In addition, as part of a laboratory experience, students are required to take five hours of simulator training and additional training to prepare for the FAA written exam as needed. Prerequisites: FLT110, FAA Private Pilot written An exam, simulator and seminar lab fee are required.

### **FLT 121 – INTERMEDIATE AERONAUTICS FLIGHT REVIEW – 1 credit**

The instrument flight course will focus on the students’ knowledge related to the actions and tasks in the instrument phases of flight training. The instructor will aid the students in advancing their flight knowledge and skills by sole reference to aircraft instrument systems and operations in the National Airspace System of electronic navigation. Students will learn how to execute, understand and demonstrate the theories and concepts of the maneuver at hand. Students will become familiar with accident causes and prevention in the IFR environment. All students’ flight activity will be evaluated according to the current published FAA practical test standards for the Instrument Pilot Rating, FITS (FAA-Industry Training Standards) and Vaughn College standards. Prerequisites: FLT 120, FLT 111, Passed (and current) FAA Instrument Knowledge Exam, Class III FAA Medical (Class I recommended), FAA Private Pilot-Airplane Certificate; corequisite: Instrument Flight training at an FAA- and Vaughn College- approved flight school and completion of a simulator flight review.

A simulator lab fee is required.

### **FLT221 – INTERMEDIATE AERONAUTICS SIMULATOR – 2 credits**

The intermediate aeronautics lab concentrates on operations of an airplane under Instrument Flight Rules (IFR). Students will utilize their IFR flying skills in the College’s flight simulator (10 hours). Prerequisites: FLT120, FAA instrument written exam; simulator fee is required.

weather reports and weather hazards are studied, preparing students for flight applications. The laboratory portion ensures that the use of Aviation Digital Data Service (ADDS) is completely integrated in flight plan preparation by using weather maps and forecasts. This course, and ATC200 and lab, can be taken as a basic science elective. Students in the AT-CTI program must take a different section of the weather course, ATC220 and Lab, ATC Weather.

### **FLT240 – ADVANCED AIRCRAFT SYSTEMS (FLIGHT) – 3 credits**

This course discusses the theory and operation of aircraft systems. Topics include heating ventilation and air conditioning, oxygen and pressurization, fire detection, anti-icing and deicing, pilot static system, instruments and fuel system. There is also a comprehensive study of engine operations, performance and systems, required maintenance records and manufacturers’ service information. Prerequisite: FLT110

### **FLT241 – AVIATION SAFETY – 3 credits**

This course will introduce students to concepts of aviation safety as well as practical methods of maintaining safety. Students will gain factual and conceptual knowledge to conduct current and future aviation operations in a professional and safe manner. The role of safety programs in management is also discussed.

### **FLT330 – ADVANCED AERONAUTICS – 3 credits**

This course covers federal regulations and operations pertaining to the duties of a commercial pilot. Principles of advanced flight maneuvers and procedures required to meet Federal Aviation Administration (FAA) standards are included. Preparation for FAA commercial pilot written exam is included. A grade of “C” or better is required to pass this course. The FAA commercial pilot written exam must be successfully passed within 30 days of the end of classes to complete this course, unless this course is taken as an elective. Prerequisites: FLT120, FAA instrument written exam

### **FLT331 – ADVANCED AERONAUTICS FLIGHT REVIEW – 1 credit**

The commercial pilot flight lab will focus on those pilot operations required of a commercial pilot, including advanced flight maneuvers and techniques used to develop precision flying skills and instrument flight proficiency, cross-country flight (IFR and VFR), resource management (single- and multi-pilot), accident causes and prevention, safety management systems

### **FLT230 – AVIATION WEATHER – 3 credits**

Multiple phases of meteorology are examined and applied by students. Principles of meteorology, familiarization with preflight weather briefings, enroute

awareness and pilot continuing education. All students' flight activity will be evaluated following the current published practical test standards for the FAA Commercial Pilot Certificate, FITS (FAA-Industry Training Standards) and Vaughn College standards. Prerequisites: FLT 330, FLT 121, Passed (and current) FAA Commercial Pilot Knowledge exam, Class II FAA Medical (Class I recommended), FAA Private Pilot Certificate with Instrument-Airplane rating; corequisite: Commercial flight training at an FAA- and Vaughn-approved flight school and completion of a simulator flight review.

A simulator fee is required.

#### **FLT345 – HUMAN FACTORS – 3 credits**

Students will be introduced to basic human factor issues for pilots. This course explores applications of understanding of human behavior and physiology to the design, evaluation, operation and maintenance of aviation systems in order to improve efficiency and safety. In addition, each student will conduct a human factors research project.

#### **FLT360 – MULTI-ENGINE OPERATIONS – 3 credits**

This course will focus on multi-engine operations, including relevant terminology, aerodynamics, systems, performance, engine out and instrument operations required to pass the Federal Aviation Administration's (FAA) multi-engine rating. Emphasis on pilot techniques and scenarios in emergencies using crew resource management will be used. Simulator sessions will reinforce emergency single-engine procedures in the Instrumental Flight Rules (IFR) environment. A grade of "C" or better is required to pass this class, unless it is taken as an elective. All students' flight activity will be evaluated according to the current published FAA practical test standards (five hours in simulator). Prerequisites: FLT330, FAA commercial written exam.

A simulator lab fee is required.

#### **FLT361 – MULTI-ENGINE OPERATIONS FLIGHT REVIEW – 1 credit**

The multi-engine operations flight lab will focus on those pilot operations required of a multi-engine rated pilot in both VFR and IFR flight. The student will have gained the academic and aeronautical knowledge, experience and understanding of aircraft systems, performance, abnormal and emergency procedures, resource management (single- and multi-pilot), aerodynamics and accident causes/prevention as applied to multi-engine aircraft operation. All students' flight activity will be evaluated following the current published practical test standards for the applicable FAA Airplane Multi-Engine Rating, FITS (FAA-Industry Training Standards) and Vaughn College standards. Prerequisites:

FLT 360, FLT 121, Class III FAA Medical (Class I recommended), FAA Private Pilot certificate with Instrument-Airplane rating; corequisite: Multiengine flight training at an FAA- and Vaughn- approved flight school and three (3) simulator hours at Vaughn College  
A simulator lab fee is required.

#### **FLT383 – ACCIDENT INVESTIGATION – 3 credits**

This course provides an overview of the process of aviation accident investigation. Possible causes, including human factors, mechanical, environmental and security issues, will be discussed. An overview of procedures followed by the National Transportation Safety Board and other government and industry organizations will be provided. A historical perspective, including government policies regarding aviation safety, will be presented.

#### **FLT384 – MANAGEMENT OF AVIATION ENVIRONMENTAL ISSUES – 3 credits**

This course introduces students to methods of managing environmental effects of aviation. It presents an overview of environmental issues tackled by airlines, airports and the Federal Aviation Administration (FAA). Course topics include: pertinent aviation and environmental laws; studies necessitated by the National Environmental Policy Act; noise and air pollution impacts; water pollution and deicing chemicals. Uses case studies to describe environmental studies of major airspace and airport expansions.

#### **FLT441 – FLIGHT DISPATCH I – 3 credits**

This course is a comprehensive study of federal regulations applicable to the field of aircraft dispatch. It also covers topics such as air traffic control procedures, airport planning and communications. Students are required to present a paper on federal regulations as they apply to flight dispatchers.

#### **FLT442 – FLIGHT DISPATCH II – 3 credits**

This course is a comprehensive study of aviation weather as applied to aircraft dispatch. Students are required to present a paper on aviation weather as applied to flight dispatchers.

#### **FLT443 – FLIGHT DISPATCH III – 3 credits**

This course is a comprehensive study of aircraft performance and aerodynamics as applied to aircraft.

#### **FLT444 – FLIGHT DISPATCH IV – 3 credits**

This course is a comprehensive study of aircraft navigation and practical dispatching as applied to aircraft dispatch. Students are required to present a paper on aircraft navigation and practical dispatching as applied to flight dispatchers.

### **FLT447 – CREW RESOURCE MANAGEMENT – 3 credits**

This course will cover communications theories and systems, an overview of group dynamics, including leadership development, team-building principles and crew interactions. Discussion will also include how to use all resources available to the individual and crew pilot. Practical demonstrations in the flight simulator will be conducted (about five demonstration hours in simulator).

### **FLT456 – AIR TRAFFIC CONTROL AND CONTROL TOWER OPERATION – 3 credits**

This course provides an extension to those who have completed the Air Traffic Control-Collegiate Training Initiative (AT-CTI) program and who wish to advance toward a Federal Aviation Administration Control Tower Operator's (CTO) certificate. Topics include navigation, Federal Aviation regulations, emergencies, search and rescue, instrument departures and terminal arrival routes, pilot's environment and air traffic control communications. Thorough knowledge of meteorology is required. Prerequisites: successful completion of AT-CTI courses with a grade "B" or higher, including ATC200, ATC220 and ATC240.

### **FLT470 – CERTIFIED FLIGHT INSTRUCTOR AERODYNAMICS – 3 credits**

This course will prepare students to take the Federal Aviation Administration (FAA) Certified Flight Instructor (CFI) exam. Topics include special training procedures such as stall and spin awareness, performance and aerodynamics. Syllabus and lesson plans will be developed for flight maneuvers and aerodynamic theories in accordance with FAA teachings. A grade of "C" or better is required to complete this course, unless it is taken as an elective. The relevant FAA-CFI written exam must be successfully passed to complete this course. Additional training for the FAA written exam is given as part of a laboratory experience. Prerequisites: FLT330, FAA commercial written exam; lab fee required.

### **FLT471 – FUNDAMENTALS OF TEACHING AERONAUTICS – 3 credits**

This course will discuss lesson plans and syllabus layouts for flight instruction in accordance with the Federal Aviation Administration (FAA). The learning process, teaching techniques and organizational skills will also prepare students to pass the FAA written exam. A grade of "C" or better is required to complete this course, unless it is taken as an elective. The relevant FAA-Certified Flight Instructor written exam must be successfully passed to complete this course. Additional training for the FAA written exam is given as part of a laboratory experience. Prerequisites: FLT330, FAA commercial written exam; lab fee required.

### **FLT472 – CERTIFIED FLIGHT INSTRUCTOR FLIGHT REVIEW – 1 credit**

The Certified Flight Instructor Flight Review lab will focus on those flight and classroom operations required of a CFI. The student will have gained the practical understanding of the responsibility, skills and proficiency required to successfully flight instruct in airplanes (single-engine, multi-engine and/or instrument, as appropriate). The student will be able to provide ground instruction appropriate to the flight training being given. The need for continuing education for the CFI will be emphasized. All students' teaching and flight activity will be evaluated following the current published practical test standards for the applicable FAA Airplane/Instrument CFI test guide, FITS (FAA-Industry Training Standards) and Vaughn College standards. Prerequisites: FLT470, FLT471, Class II FAA Medical (Class I recommended), FAA Commercial Pilot certificate; corequisite: CFI Airplane, Multiengine, Instrument-Airplane flight training at an FAA- and Vaughn- approved flight school and three simulator hours at Vaughn College.

A simulator lab fee is required.

### **FLT480 – TURBOPROP TECHNIQUES AND PROCEDURES – 3 credits**

This course will cover operational procedures used by airline crews with extensive preparation of flight profiles, crew resource management (callouts, memory items and emergency procedures) to specific aircraft standards. Emphasis will be placed on normal and emergency flight procedures in the Instrument Flight Rules (IFR) environment. An in-depth study of IFR charts and approach plates, aircraft performance and operational considerations will be discussed. Prerequisites: FLT330, FLT360, FAA commercial written exam

### **FLT481 – AIRLINE TRANSPORT PILOT AERONAUTICS – 3 credits**

Certified commercial and instrument-rated pilots will revise and extend their training for the multi-engine land class rating. Ground instruction will add detailed instrument-oriented training to airline transport pilot proficiency standards. Emphasis is placed on precision altitude flying techniques, operations and procedures. Integration of applicable emergency procedures during all phases of instrument flight will be provided. Prerequisites: FLT330, FLT360, FAA commercial written exam

### **FLT482 – FLIGHT DISPATCH – 3 credits**

This course provides an introduction to flight planning and practical dispatching. Topics will include Federal Air Regulations, international regulations, flight planning criteria, aircraft performance limitations, weather, navigation and communications.

### **FRE160 – FRENCH I – 3 credits**



This introductory course emphasizes conversation, writing and reading skills, and provides a foundation in French grammar, pronunciation and vocabulary. This course may not be taken by French-speaking students.

### **FRE261 – FRENCH II – 3 credits**

This course is a continuation of FRE160 French I. It will develop additional conversation, writing and reading skills, and will aid in furthering the study of French grammar, pronunciation and vocabulary. This course may not be taken by French-speaking students. Prerequisite: FRE160

### **FYE101 – FRESHMAN YEAR EXPERIENCE – 1 credit**

As part of the Freshman Year Experience, FYE101 is designed to provide a quality learning environment empowering students to be successful both academically and developmentally while making the transition into college. Informative topics include academic policies, College rules and regulations, as well as the registration and advisement processes. FYE serves as a link to the institution's different departments and exposes students to key personnel on campus. FYE instructors encourage new students to take full advantage of what Vaughn has to offer by developing an appreciation for the value of a higher education in a technologically evolving and culturally diverse world.

### **FYI101 – FIRST YEAR INITIATIVES – 3 credits**

This course is designed to assist students in becoming more effective in the college setting. Throughout the course, first year students will adjust to the college environment by engaging collaboratively with the college community and developing a sense of belonging. Discussions entail experiences unique to first year students and academic expectations. These include transitional stages that students may undergo; coping strategies that can help students manage various phases of their college life. First year students will also develop skills to increase leadership and civic engagement. In addition to learning Vaughn's academic policies, students will learn how technology is used as an educational resource. Students will enhance their research abilities while understanding how technology affects their education and career. Students will utilize in-class instruction while integrating with online resources.

### **HIS141 – GLOBAL CIVILIZATION – 3 credits**

This course offers an analysis of the origins and development of the societies of the contemporary world. The course traces the growth of modern national states, the role of technology, the emergence of capitalism and democracy, the rise of socialist and third-world nations, and the cultural features of modern civilization. Prerequisite: ENG110

### **HIS250 – HISTORY OF AVIATION – 3 credits**

This course is a survey of the development of the aviation industry viewed from a historical perspective. Topics covered will range from the early days of flight to the present. At the conclusion of this course the student will have a comprehensive knowledge of the air transportation/aviation industry and will understand its significant social, military, literary, political, diplomatic and economic impact upon the United States and the world. Prerequisite: ENG110

### **HIS252 – SURVEY OF AMERICAN HISTORY – 3 credits**

A survey of American history that is an attempt to explain and understand the major forces, events and personalities responsible for molding the United States. The westward movement, domestic political movements, such as progressivism, and the rise to the urban-industrial megalopolis are emphasized. Prerequisite: HIS141; corequisite: POL254

### **HUM250 – WESTERN MUSIC AND ART HISTORY – AN INTRODUCTION – 3 credits**

This course uses examples from mechanics, history, construction, show business, nature and sports to help students follow the development of European and North American music and art from the Middle Ages (1050) through the beginning of the 21st century. The course includes an introductory study of the elements of music, music notation and composition, and the evolution of visual art through the study of influential visual artists such as Michelangelo, Goya and Pollack. Recordings, photos and videos are used in addition to the text.

### **HUM251 – INTERNATIONAL STUDIES: A GLOBAL PERSPECTIVE – 3 credits**

This course is an exploration of cultural universals and differences around the world, with an overview of world geography, family life, economics, politics and religion. Prerequisite: ENG110

### **HUM255 – TECHNOLOGY AND CULTURE – 3 credits**

This course examines US technology from a historical perspective. Beginning with the colonial period, it covers the early years of the U.S. and its rise as a major technological power in the late 1800s, the development of mass production and the assembly line in the early 20th century, the technological consequences—military and civilian—of both World Wars, and ends with late 20th-century and early 21st-century technological developments such as atomic power, biotechnology and computerization. Within the historical framework, this course assesses the social, economic and political ramifications of technological advances. Prerequisite: ENG110

**HUM256 – INTRODUCTION TO CRITICAL THINKING – 3 credits**

This course is designed to introduce students to logic and critical-thinking theory. Course topics include issues such as: reasoning, clarity, bias, evidence, assumptions, implications and accuracy. Students will be asked to apply critical-thinking and reasoning patterns to a variety of problems and situations.

**HUM472 – PRACTICAL ETHICS – 3 credits**

This course involves a study of the application of ethical and moral systems to family life, peer groups and, in particular, to professional careers in industry, the community and on various governmental levels—including international relationships. Students will prepare papers dealing with theory and practice. Prerequisite: ENG110

**INT401 – INTERNSHIP****– 3 credits**

Students participating in an internship program must obtain approval and meet all the requirements for the internship as outlined by the sponsoring company and/or the College's career services office. Students may conduct a research project in lieu of an internship. Students must complete written and oral assignments as part of the course requirements. This internship may count as a aviation or technical elective course. Students who have already satisfied course requirements can participate in internships for additional credit.

**MAT108 – FUNDAMENTALS OF ALGEBRA****– 3 equivalent hours**

See Basic Skills Courses, page 131.

**MAT109 – FUNDAMENTALS OF PRE-CALCULUS****– 3 equivalent hours**

See Basic Skills Courses, page 131

**MAT115 – PRE-CALCULUS – 4 credits**

This course covers polynomial, rational, logarithmic, exponential and trigonometric functions, including elementary operations with Vectors. Topics for each type of function will include finding roots, graphing and modeling using applications from physics and engineering. This course prepares students for upper-level mathematics and science courses.

Prerequisites: MAT109, high school equivalent or standardized placement test.

differentiation will be included. The course will end with an introduction to integration. Prerequisite MAT 115.

**MAT125 - CALCULUS I FOR ENGINEERS****– 3 credits**

This course analyzes limits and continuity. The derivative and applications to related rates, maxima, minima and curve sketching. An introduction to the definite integral and area computations will be covered as well. A grade of "C" or higher is required before proceeding to MAT225. Prerequisite: permission of the department chair

**MAT210 – INTRODUCTION TO STATISTICS – 3 credits**

This is a one-semester course designed for management students, but can be taken as an elective by other students wanting a basic knowledge of statistics. Topics include: data analysis, control charts, linear regression, correlation and hypothesis testing. Students will also use either EXCEL or SPSS to analyze data. Prerequisite: MAT115.

**MAT220 – CALCULUS II – 3 credits**

MAT 220 is a continuation of MAT 120. This second calculus course will cover topics in integration, including techniques of integration, applications to areas and volumes. Parametric equations will be introduced. Prerequisite MAT 120.

**MAT225 – CALCULUS II FOR ENGINEERS****– 3 credits**

MAT225 is a continuation of MAT125. Topics covered will include techniques of integration, improper integrals, infinite series, applications to physics and engineering. Prerequisite: MAT125 or MAT120 with permission of department chair.

**MAT325 – DIFFERENTIAL EQUATIONS FOR ENGINEERS – 3 credits**

This course will cover techniques used to solve ordinary differential equations. Topics will include solving first and second order homogeneous and nonhomogeneous differential equations with constant coefficients using separation of variables, finding eigenvalues, Laplace Transforms and Fourier series. The course will include applications to science and engineering and end with an introduction to partial differential equations. Prerequisite MAT 225.

**MAT330 – CALCULUS III FOR ENGINEERS****– 3 credits**

MAT330 is a continuation of MAT225. Topics will include parametric equations, polar coordinates,

**MAT120 – CALCULUS I – 4 credits**

Students in this first calculus course will begin with the study of limits and continuity. It will continue with a study of techniques to differentiate algebraic, transcendental and rational functions. Applications of



operations with vectors, partial derivatives and multiple integrals. Applications to engineering and physics will be included. Prerequisite: MAT225 or MAT220 with permission from department chair.

### **MAT356 – PROBABILITY AND STATISTICS – 3 credits**

This course is an introduction to probability and statistics. Topics include elementary probability, descriptive statistics, elementary distributions such as the binominal distribution, hypergeometric distribution, normal and geometric distributions. Sampling theory and statistical testing will also be covered. Prerequisite: MAT220 or MAT225.

### **MAT445 – DIFFERENTIAL EQUATIONS – 3 credits**

This course is a study of the differential equations and the techniques used to solve them. The importance of the relationship of differential equations to physics and dynamical systems will be emphasized. Prerequisite: MAT220 or MAT225

### **MCE101 – INTRODUCTION TO ROBOTICS – 4 credits**

This is an introductory course on robotics. Students are expected to build and program simple robots by utilizing the VEX robotic platform hardware as a prototype, and using them to conduct experiments demonstrating physics and mechanical properties. Topics covered include robotic chassis and drive chain construction, wireless control and robotics system design, basic robotic programming and robot dynamics, sensors, robotic arms and end effectors as well as fundamentals of industrial robotic arms.

### **MCE310 – FUNDAMENTALS OF MECHATRONIC ENGINEERING – 2 credits**

This course will cover the fundamental concepts of mechatronic engineering with emphasis on PLC programming. Topics include introduction to programmable logic controllers (PLCs), input/output modules, programming languages – Ladder, Function Block Diagram (FBD), Instruction Lists (IL) and Structured Text (ST), implementation of gate, timer and counter in PLCs, simple process control using PLCs. Prerequisites: ELE230

### **MCE401 – PRE CAPSTONE PROJECT – 1 credit**

This course prepares senior mechatronic engineering students for their capstone degree project. In this course, students begin working on their capstone degree project by studying the engineering design process and learning about professional topics related to the engineering industry. Topics in the engineering design process include customer needs identification, project concept generation and selection, engineering specifications,

costs and project planning. Professional topics include communication, teamwork, ethics, safety, sustainability, globalization and engineering economics. Students work in a team to develop a project topic, specifications and a project plan, perform background research necessary to fully understand the project and the problem solving approach. Students are evaluated on their proposal report and presentation skills, as well as their ability to function as a team. Prerequisites and Corequisites: Seven semester standing, ELE326, ELE350, MEE365, EGR380.

### **MCE409 – MECHATRONIC PROGRAM DEGREE PROJECT – 3 credits**

This project is a capstone for students enrolled in the mechatronic engineering program. The project should demonstrate applications of the knowledge and technical skills gained through the curriculum. Students are required to submit a synopsis of the project at the beginning of the semester that must be approved by the degree project faculty advisers. At the end of the semester, students must submit a complete project report and present a seminar. Prerequisites: Final year status, ELE326, ELE350, EGR380, MEE365, MCE401

### **MCE410 – MECHATRONICS I – 2 credits**

This course will provide an in-depth understanding of industrial applications of control theory and programmable logic controllers. Topics include operating principles of sensors and motion transducers, electric and pneumatic, and hydraulic actuators, manufacturing process, sequence control design and implementation with application to industrial automation. Prerequisite: MCE310

### **MCE420 – MECHATRONICS II – 2 credits**

This course will cover design of robotic systems. Topics include sensor selection and motion, electromechanical actuator selection and specification, hardware implementation and testing, control system design, modeling and simulation of the mechatronic system, software implementation through programming a microcontroller, system performance and reliability analysis. Prerequisites ELE350

### **MEE115 – ENGINEERING MECHANICS I – 3 credits**

This course covers the concepts necessary to apply the laws of mechanics to rigid body equilibrium. Topics include vectors, equilibrium of particles and rigid bodies. The study will concentrate on equivalent systems and how they apply to frames, trusses and beams. This course will also cover topics on centroids, moment of inertia and friction. Prerequisites: MAT125, PHY125

**MEE210 – THERMODYNAMICS – 3 credits**

This course discusses the fundamentals of thermodynamics, which include system concepts, state of equilibrium, processes' properties, zeroth, first, second laws of thermodynamics, flow and non-flow processes. Carnot cycle and efficiencies of reversible conversions, irreversibility, entropy concepts, ideal gases and mixtures involving ideal gases are also covered. Prerequisites: MAT225, PHY225

**MEE215 – ENGINEERING MECHANICS II – 3 credits**

Course content includes rectilinear, curvilinear and dynamic motion, kinetics of rigid bodies, plane motion of rigid bodies and an introduction to mechanical vibration. This course will cover topics on linear motion, projectile motion, conservation of energy, impact and momentum, free and forced vibration of a single degree freedom system. Prerequisites: MAT225, MEE115, PHY225

**MEE220 – MECHANICS OF MATERIALS – 4 credits**

This course covers the concepts of stress, strain, stress-strain diagrams, elasticity, thermal stress, torsion, beam and frame analysis and design. This course will also cover topics on transformation of stress and strain, principal stresses, beam deflection analysis, statically indeterminate beam analysis, strain energy and Castigliano's theorems. Prerequisites: MAT225 and MEE115

**MEE235 – MATERIAL SCIENCE AND FAILURE ANALYSIS – 3 credits**

This course deals with materials classification and their characteristic properties, atomic structure, the concept of the unit cell of a crystalline solid and study of the phase diagram. Material characteristics related to mechanical properties are emphasized. Material failures and failure due to stress concentration, fatigue and impact are discussed. Brief study of composite material and criteria for material selection based on maximization of strength with respect to both minimum mass and minimum cost will be studied. Prerequisites: MAT125, PHY125

**MEE340 – COMPUTATIONAL METHODS IN ENGINEERING – 3 credits**

Topics covered are numerical analysis, finite difference approximation, matrix inversion methods and implicit and explicit procedures. This course will feature analytical and numerical solutions to the differential equation of a physical problem, roots determination and application to the engineering systems problems, estimating first and higher derivatives, using the Taylor series expansion. These solutions, together

with finite difference techniques, finite difference numerical solution to the governing equation of an engineering system, numerical integration, and solution to the systems of linear algebraic equations, will be applied with application to the engineering problems. This course will feature the utilization of MATLAB. Prerequisites: MAT225, MEE220

**MEE345 – FLUID MECHANICS – 3 credits**

The concepts and principles of fluid mechanics will be applied to various fluid systems. Topics covered include the properties of the velocity field, thermodynamics properties of fluids, integral relations for a control volume as applied to the conservation of mass, linear and angular momentum. Prerequisite: MEE210

**MEE355 – RELIABILITY METHOD IN STRUCTURAL MECHANICS – 3 credits**

In this course, students will be introduced to the concepts of the theory of structural reliability and the reliability-based design formulas. The tools needed in this course are probability, statistics and basic mechanics courses. Upon completion of this course, students will be expected to perform structural load and strength analysis, as well as to solve structural reliability problems, including design and safety checking under quasi-static loads. Prerequisites: MAT225, MEE220

**MEE365 – ELEMENTS OF MACHINE DESIGN AND VIBRATION ANALYSIS – 4 credits**

This introductory course in machine design utilizes the principles of statics, dynamics and strength of materials in design of machine parts, such as shafts, keys, couplings, gears, springs, and bolts that work safely, reliably and well. Topics covered include principal stresses, theory of failure, fatigue, dynamic loading, free and forced vibration of undamped and damped systems, and design of isolators. Prerequisites: MAT325, MEE215, MEE220

**MEE370 – FINITE ELEMENT ANALYSIS – 3 credits**

This course deals with finite element modeling and analysis of engineering systems and analytical solution based on strain energy method. Topics covered include calculus of variation, derivation of Euler equations for the bar, heat transfer and beam-type problems. In this introductory course, students will be introduced to the one-dimensional finite element modeling and analysis of rod, truss and heat transfer-type problems. Students will also learn to apply calculus of variation in developing finite element formulation for the beam-type problems. This course will feature the utilization of MATLAB in modeling and solving engineering problems. Prerequisites: MEE220, MEE340

**MEE440 – HEAT TRANSFER – 3 credits**

The principles of heat transfer for analysis as applied to heat conduction, heat convection, heat radiation and heat exchangers are studied. Topics covered include one- and two-dimensional heat transfer analysis, conduction heat transfer by finite difference technique, radiation heat transfer, unsteady-state heat transfer, convection heat transfer and heat exchangers. Prerequisites: MEE210, MAT325

**MET409 – MECHANICAL ENGINEERING TECHNOLOGY DEGREE PROJECT – 3 credits**

This project is a capstone for students enrolled in mechatronic engineering technology program. The project should demonstrate applications of the knowledge and technical skills gained through the curriculum. Students are required to submit a synopsis of the project at the beginning of the semester that must be approved by the degree project faculty advisers. At the end of the semester, students must submit a complete project report and present a seminar. Prerequisites: Final semester status, EGR350, EGR365, EGR380, EGR440

**MGT110 – MANAGEMENT I****– 3 credits**

This course introduces theories of effective management through the use of practical situations. Coursework develops skills necessary for supervision, such as effective use of labor and motivation techniques.

**MGT115 – MANAGEMENT II – 3 credits**

This course follows MGT110 with additional basic concepts of the art and science of Management. It is designed to integrate the accepted theories of this body of knowledge with real world applications that will provide students with basic knowledge and skills needed for managing others and for transacting effectively with those to whom they report. Building on the first part of an introduction to management, the course begins with a discussion of managerial leadership and motivation, and then proceeds to cover the various aspects of control systems. The course concludes with a brief overview of entrepreneurship and small business operations. Lecture and class assignments given in the course are intended to help students understand the needs of modern public and private organizations, including emerging national and international trends.

**MGT120 – PRINCIPLES OF ACCOUNTING****– 3 credits**

This course includes an examination of primary accounting principles, techniques and tools required for understanding accounting. Topics include the accounting cycle, receivables and payables, journals, reports, measurements and interpretation. Prerequisite: MAT115

**MGT210 – ORGANIZATIONAL BEHAVIOR****– 3 credits**

An examination of human behavior theories and practices as they apply to individuals in the workplace. Topics include motivation, morale, leadership effectiveness, interpersonal dynamics and communication. Prerequisite: MGT110

**MGT220 – CORPORATE ACCOUNTING****– 3 credits**

This builds upon the MGT120 Principles of Accounting course. The topics covered include analysis of bad debts, partnerships, financial instruments and the disposition of assets. Prerequisite: MGT120; *spring offering only*

**MGT230 – FINANCIAL MANAGEMENT****– 3 credits**

Topics covered include financial statements, the environment and institutions. Students learn about the time value of money, interest rates, discounting and compounding. Other issues addressed are financial assets and their valuation, financial decision making over the long and short terms, and international financial markets. Prerequisites: MAT120, MGT120

**MGT240 – PRINCIPLES OF MICROECONOMICS****– 3 credits**

This course provides the student with an understanding of the fundamentals of microeconomics. Topics include cost behavior, perfect competition, monopoly, imperfect competition and oligopoly. Prerequisites: ENG110, MAT115; *spring offering only*

**MGT250 – ENTREPRENEURSHIP: HOW TO START A BUSINESS – 3 credits**

This course provides students with comprehensive, practical knowledge and management skills to help them launch a new business venture. Students will work in teams to research, write and present plans for starting a new business. The coursework and class discussions will serve to enable this effort.

**MGT360 – BUSINESS COMMUNICATIONS****– 3 credits**

This course analyzes elements in the communication process with business and management applications, including safety management systems. Emphasis is placed on a variety of communication methods including letters, reports, memoranda, oral presentations, and technology.

**MGT365 – PUBLIC RELATIONS – 3 credits**

This course provides the student with an understanding of the means by which reciprocal goodwill between a person, firm or institution and the public can be achieved.

Elements of community service, public safety, advertising and marketing are incorporated in this course, as well as an overview of successful public relations campaigns past and present. Prerequisite: MGT110; *fall offering only*

### **MGT371 – MARKETING MANAGEMENT – 3 credits**

This course introduces the student to national and international strategies of marketing, touching on sales, advertising, marketing research and the potential of various media. Prerequisite: MGT110; *spring offering only*

### **MGT372 – MARKETING MANAGEMENT AND PUBLIC RELATIONS – 3 credits**

This course introduces the student to national and international strategies of marketing, touching on sales, advertising, marketing research. This course provides the student with an understanding of the means by which reciprocal goodwill between a person, firm or institution and the public can be achieved. Elements of community service, public safety, advertising and marketing are incorporated in this course. Prerequisite: MGT110

### **MGT385 – INTRODUCTION TO AVIATION INSURANCE – 3 credits**

This elective course introduces the basic principles of insurance and risk management with a special application to the aviation industry. An in-depth review of the aviation insurance industry in the United States and abroad, including the various underwriting companies and insurance brokerage specialists is provided. Subject matter will include underwriting, selection and rating for single-engine aircraft, Business and Pleasure Flying; Corporate Fleets Part 91; Airlines PT 121; Airports; Fixed Based Operators (FBOs) and product liability/component manufacturers. The class will also discuss loss and risk mitigation from an aviation perspective, including loss ratio analysis.

### **MGT403 – INTERNSHIP DEGREE MANAGEMENT PROJECT – 3 credits**

Students in the BS programs in airport, airline and general management apply their classroom learning to management internship for credit by participating in an internship in a business related to their major. In addition to the internship, students are required to complete written assignments and an oral presentation in consultation with a faculty adviser. A research project may be conducted in lieu of an internship with the approval of the faculty adviser.

### **MGT470 – INDUSTRY AND LABOR RELATIONS – 3 credits**

This course outlines the behavioral aspects of the management and collective bargaining agency interface. Emphasis is on arbitration, mediation, conciliation and fact finding. A computer simulation exercise is included in this course. Prerequisite: MGT110

A computer simulation fee is required.

### **MGT471 – MARKETING STRATEGIES – 3 credits**

National and international strategies of marketing, particularly, the potential of various media will be examined. Practical examples of how to create and use marketing strategies are explained. How to conduct market research, find a target audience and assess effectiveness of marketing strategies will be demonstrated in the course. Prerequisite: MGT372 or MGT371.

### **MGT472 – PUBLIC RELATIONS STRATEGIES – 3 credits**

This course builds upon concepts discussed in MGT372 and provides the student with an in-depth understanding of communications systems between a person, firm or institution and the public. Practical applications of public relations strategies and examples of how they are used in today's world will be examined. An overview of successful public relations campaigns, past and present, will be studied. Prerequisite: MGT372 or MG365.

### **MGT480 – CAPSTONE: STRATEGIC MANAGEMENT – 3 credits**

Students in bachelor of science programs in airport management take this course in their final semester. The capstone course includes computer-based simulations to integrate ideas from different functional areas of management. Individually and in teams, students learn to address situations and issues that can arise in a business. In addition, a comprehensive research report and oral presentation are required.

A computer simulation fee is required.

### **MGT481 – ADVANCED AIRPORT MANAGEMENT – 3 credits**

Students in airport management programs study advanced airport management topics. Included in this course is preparation for the American Association of Airport Executives' (AAAE) Certified Member C.M. professional exam. In addition, the course provides an overview of materials learned throughout the airport management program and integrates ideas from different functional areas of airport management. Exam fees and membership in AAAE are not included. Prerequisites: APM241, APM485



**PHY120 – PHYSICS I – 3 credits lecture, 1 credit lab**

A first physics course for freshmen in both the bachelor and associate programs. This course is an introduction to classical mechanics and covers statics, kinematics, Newton's three laws of motion, vectors and rotational motion, including Newton's law of gravitation and conservation laws. Laboratory experiments enhance lecture topics. Prerequisite: MAT 109 or equivalent, corequisite: PHY120L and MAT 115

**PHY125 – ENGINEERING PHYSICS****– 4 credits**

A calculus-based physics course. Topics include vectors, kinematics, particle dynamics, friction, work, energy, power, momentum, dynamics and statics of rigid bodies, oscillations, gravitation and fluids. A grade of "C" or higher is required before progressing to PHY220. Prerequisite: permission of the department chair; corequisite: MAT125 Calculus I for Engineers

**PHY220 – COLLEGE PHYSICS II – 3 credits lecture, 1 credit lab**

A continuation of PHY120, topics include the laws of thermodynamics, harmonic motion, fluid motion, wave motion and electromagnetism. Laboratory experiments enhance lecture topics. Prerequisite: PHY120, co-requisite PHY 220L

**PHY225 – PHYSICS II FOR ENGINEERS****– 4 credits**

This second semester calculus based physics course is a continuation of PHY 125. The course will begin with a study of the first and second laws of thermodynamics. Students will continue with a survey of topics from electricity and magnetism including electric fields, electric potential, magnetic fields and finally the connection between the two fields using Maxwell's equations. Prerequisite PHY 125

**PHY330 – COLLEGE PHYSICS III – 3 credits**

A historical introduction to the physics of the 20th century. Topics include the discovery of radioactivity, development of quantum theory, introduction to special relativity and kinetic theory. Prerequisite: PHY220

**PHY335 – PHYSICS III FOR ENGINEERS: MODERN PHYSICS – 3 credits**

This third physics course will be a continuation of PHY 225, and will cover topics in physics from 1900 to 1945. Topics will include, special relativity, quantization of energy, photoelectric effect, models of the atom and Bohr's postulates. Important experiments will be discussed. Students may take this in place of PHY 330. Prerequisite PHY 220 or PHY 225.

**PHY350 – ASTRONOMY – 3 credits**

This course is an introduction to astronomy, including satellite motion, space exploration, the solar

system, planets, moons, comets and meteors, the sun, and the birth and death of stars and galaxies.

**POL254 – AMERICAN GOVERNMENT****– 3 credits**

An analysis of the processes of the American form of government under the Constitution will be undertaken. The course also covers the nature and structure of government, its characteristics and functions, and the intimate relationship of government to other interests. Prerequisite: ENG110

**PSY150 – GENERAL PSYCHOLOGY****– 3 credits**

This course acquaints the student with such movements as behaviorism, mechanism, experimentalism and psychoanalysis. They are surveyed with particular emphasis on behavioral problems. Prerequisite: ENG110

**SPA160 – SPANISH I – 3 credits**

This introductory course emphasizes conversation, writing and reading skills, and provides a foundation in Spanish grammar, pronunciation and vocabulary. This course may not be taken by Spanish-speaking students.

**SPA261 – SPANISH II – 3 credits**

This course is a continuation of SPA160 Spanish I. It will develop additional conversation, writing and reading skills, and will aid in furthering the study of Spanish grammar, pronunciation and vocabulary. This course may not be taken by Spanish-speaking students. Prerequisite: SPA160

**UAS200 – INTRODUCTION TO UNMANNED AERIAL SYSTEMS: APPLICATIONS AND REGULATIONS – 3 credits**

The course introduces developments in the field of unmanned aerospace vehicles for military, meteorological and cartographic purposes, among others. Alternate sources of electrical power for Unmanned Aerospace Systems (UAS), potential applications in other industrial areas and modifications by aerial responses to a ground monitoring station are examined. Basic training in the operation of small UAS will be provided.

**UAV210 – BUSINESS OPERATIONS FOR DRONES**

What are the business advantages to UAS? This course provides discussion pertaining to the advantages of UAS versus manned aircraft in the areas of scalability, acquisition costs, operating costs, technology applications and business market segment penetration. This course also provides the fundamental aspects of business operations such as marketing, organizational structure and production operations decisions such as make or buy. The overall objective of the course is to

prepare the students with a flight/technical background to enter the UAS operations field with fundamental business training and thinking.

### **UAV220 – DRONE LAWS – 3 credits**

The introduction of UAS into the national civil airspace system presents numerous commercial and humanitarian opportunities. There are also risks inherent to the introduction of what is likely to become a widespread and accessible use of UAS by the general public. The laws, regulations and policies that are in place today and those proposed for the future and that will best promote the benefits of UAS while offering reasonable protections are discussed. Drone Laws will explore the history of UAS regulation, the laws and regulations currently in place and FAA's notice of proposed rulemaking for small UAS. The course will also touch on other legal issues involving drones, such as privacy and property rights. Students will become knowledgeable in the existing legal framework and the proposed regulations.

### **UAV230 – STRATEGIC IMPLICATIONS OF UAS – 3 credits**

The introduction of the UAS into the civilian market on a global scale will have a major impact on all of the civilian market segments. This course is designed as a survey course that explores the strategic implications of UAS on the civilian aviation sector. UAS have the potential to fundamentally change the civilian aviation sector's mission. How that change could occur is explored through guided discussions and creative research.

### **UAV300 – DRONE ENGINEERING DESIGN PRINCIPLES – 3 credits**

This course provides comprehensive engineering principles considered in developing UAS, particularly quadcopter UAS. This includes basic power calculation for thrust motion and directional control, overview of latest on-board sensors description and functionality such as IMU's and GPS sensors, providing basic training using commercially available programming platforms and tools to develop autonomous flight. The course also introduces design strategies to provide efficient maintenance process and to improve the vehicle operation reliability.

### **UAV350 – DRONE OPERATIONS AND MAINTENANCE – 3 credits**

This course builds upon the introductory concepts and applications discussed in AAM210 Introduction to Unmanned Aircraft Systems. The course is divided into three distinct phases covering the requirements necessary for the design, operations, and maintenance

of UAS systems as a whole. The course specifically covers UAS airframe configurations, payload types, communications, ground based command and control systems, and launch and recovery systems. In addition, instruction covering the full lifecycle operational requirements will be provided with special emphasis placed on maintenance requirements and systems sustainability. At the conclusion of this course, the student will have an understanding of the entire lifecycle of a UAS product from preliminary design to development and manufacturing to operating trials and certification.

## **ELECTIVES**

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Electives offered each semester are selected by the department chairs and announced prior to registration. Students should inquire with the Student Advisement Center (SAC), registrar's office and/or their department chairs.

Liberal arts, management and aviation electives must be selected from upper division courses, except for ATC220, which counts as a math/science elective. Consult your adviser or chair of the arts and sciences department. Management or airport management courses (codes MGT, APM and ATM) may not be used as liberal arts electives.

Students in the associate in applied science programs (with the exception of the maintenance program) must select at least one liberal arts and one technical elective.

Some of the Air Traffic-Collegiate Training Initiative (AT-CTI) courses may be taken as electives (see ATC200, ATC220, ATC240 and ATC300 course descriptions for more information).

Students enrolled in the associate in applied science and bachelor of science degree programs in electronic engineering technology in avionics must select a technical elective from one of the following avionics courses: AVT457 Fiber Optics, AVT458 Radar Altimeters or AVT459 Area Navigation Systems and ATC200 Air Traffic Control I.

## **BASIC SKILLS COURSES**

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The Division of Special Studies offers an array of basic skills courses to aid students in their educational pursuit of studies at Vaughn College. Each student enrolled at the College is required to take a standardized placement test. If a student's placement test scores indicate that additional preparation in the areas of mathematics and/or English is required to ensure academic success at the College, that student will be required to take courses in the Division of Special Studies. A combination of 12 credit hours and equivalent hours is the maximum credit load a student who is enrolled in this division will be allowed to take.



**ENG108 – BASIC SKILLS IN READING AND WRITING – 3 credits and required lab hour**

Reading and writing naturally have a connection—developing skills in one area will naturally enhance skills in the other. Basic Skills in Reading and Writing is a fundamental course designed to help refine students' basic reading comprehension and basic writing skills. Students are taught to become effective readers and thinkers by developing literal and more advanced levels of reading comprehension, as well as by establishing clear, logical thinking. Students are also given a strong foundation for writing and will study grammar usage, including correct sentence structure and punctuation.

**ENG109 – INTRODUCTION TO COLLEGE WRITING – 3 credits and required lab hour**

This course is designed to introduce students to writing as a process and to develop their critical reading abilities. Students will learn to think critically by analyzing diverse readings, and will practice various phases of the writing process by composing paragraphs. In addition, students are introduced to writing the research paper. Prerequisite: ENG108 or Accuplacer placement

**MAT108 – FUNDAMENTALS OF ALGEBRA – 3 equivalent hours and required lab hour**

The purpose of this course is to refine students' understanding and competency in fundamental topics from arithmetic and algebra. This course is designed to prepare students for MAT109 (Fundamentals of Pre-Calculus). Students should have background knowledge of basic computational and arithmetic skills. Some of the topics from the course include mathematical computations using arithmetic, operations with polynomials, graphs of linear functions and operations with algebraic expressions.

**MAT109 – FUNDAMENTALS OF PRE-CALCULUS – 3 equivalent hours and required lab hour**

This course is designed to refine students' understanding of topics from algebra and to prepare them for Pre-Calculus and college-level mathematics courses. Students should have background knowledge of some of the mathematical topics, including operations with polynomials, graphs of linear functions and operations with algebraic expressions. Some of the topics from the course include operations with algebraic fractions, systems of linear equations, quadratic functions and their graphs.

### CERTIFICATION UNITS

All certification units will be offered in the fall, spring and summer semesters unless noted.

#### **AA02 – CERTIFICATE PREPARATION**

##### **–AIRFRAME – 0 certification unit**

This course is a comprehensive review of airframe subjects as preparation for the written Federal Aviation Administration (FAA) Airframe Examination. Students not requiring FAA Airframe or Powerplant certifications will substitute DP404 Project Seminar and DP405 Degree Project. Prerequisite: All airframe subjects completed satisfactorily or retake of AA02 is required.

#### **AC32 – AIRCRAFT STRUCTURES I**

##### **–5 certification units**

Modern manufacturing, service and repair techniques used in aircraft structure are studied. Laboratory work includes layout, forming, bending and fastening of sheet metal structures. Prerequisites: GD01, GM21

#### **AC41 – AIRCRAFT STRUCTURES II**

##### **–3 certification units**

Wood, fabric and composite repair techniques used in the aircraft industry are studied. Various types of welding processes are also performed. Experiments in the laboratory complement classwork. Prerequisite: GM21

#### **AD01– AIRCRAFT DISPATCH CERTIFICATION**

##### **–3 certification units**

This course is a comprehensive study of federal regulations applicable to the field of aircraft dispatch. It also covers topics such as air traffic control procedures, airport planning and communications, aviation weather, aircraft performance, aerodynamics, aircraft navigation and practice dispatching as applied to aircraft dispatch. Performing one of aviation's most important roles, aircraft dispatchers share with pilots the ultimate responsibility for a flight's commencement and completion. Initial training consists of a minimum of 217 hours of full-time study over six to ten weeks. An aviation background is helpful but not a requirement for initial training.

#### **AE20 – AIRCRAFT AND ENGINE ELECTRICAL SYSTEMS**

##### **–4.5 certification units**

Course topics include AC and DC generation, distribution and control circuits and systems characteristics, construction, servicing and repair as applied to airframe installations. Laboratory experiments supplement classroom work. Prerequisite: GE10

#### **AH31 – HYDRAULICS AND PNEUMATICS I – 3 certification units**

Hydraulic and pneumatic systems as applied to aircraft are studied. Components and operating systems such as flap control, windshield wipers and pneumatics are

analyzed. Bernoulli's theorem, viscosity and laminar flow are discussed in the class and investigated in the laboratory.

#### **AH40 – AIRCRAFT LANDING GEAR SYSTEMS – 3 certification units**

A detailed study is made of aircraft landing systems, shock absorption devices, brake systems and braking devices. Laboratory projects and demonstrations complement classwork. Prerequisite: AH31

#### **AL32 – AIRCRAFT RIGGING AND ALIGNMENT – 2 certification units**

This course provides the student with an understanding of the effects of aircraft rigging and alignment. Topics include aircraft nomenclature and assembly procedures, fixed-wing and rotary-wing theory of flight, primary and secondary flight controls, flight control systems, aircraft stability, aircraft alignment and inspections procedures. Laboratory projects supplement classroom work.

#### **AS41 – AIRCRAFT SYSTEMS**

##### **– 5 certification units**

A study is made of the principles of operation of various aircraft systems, such as fire detection, flight warning, air conditioning, pressurization, heating, deicing and fueling. Lab experience includes systems tracing, inspection, service and testing.

#### **AS42 – AIRCRAFT AVIONICS SYSTEMS**

##### **– 4.5 certification units**

This is an introductory avionics course for the maintenance technician. Emphasis is placed on understanding basic systems, operations, schematics and troubleshooting. Topics range from instruments, communication and navigation to autopilot, flight directors and radar.

#### **GD01 – INTRODUCTION TO AIRCRAFT GRAPHICS – 2 certification units**

An introductory course in comprehending and interpreting aircraft drawings, it includes drawing skills, methods, symbology, and types of drawings and schematics to prepare the technician for maintenance and modification applications.

#### **GE10 – BASIC DC/AC ELECTRICITY**

##### **–5.5 certification units**

An introduction to the concepts of current, voltage, resistance and power. Coordinated lecture and laboratory sessions provide the theory and practical experience in the analysis of circuits, use of electrical instruments and construction and maintenance of components, all typical of aircraft electrical systems.

#### **GL31 – AIRCRAFT WEIGHT AND BALANCE – 1 certification unit**

A detailed study is made of aircraft weight and balance. Topics include aircraft empty weight, alterations on the center of gravity, adverse loading,

corrections for overweight loading, corrections for out-of-center of gravity range loading, weight shifting and aircraft loading charts. Laboratory projects supplement classroom work. An introduction to the concepts of current, voltage, resistance and power. Coordinated lecture and laboratory sessions provide the theory and practical experience in the analysis of circuits, use of electrical instruments and construction and maintenance of components, all typical of aircraft electrical systems.

#### **GM21 – AIRCRAFT MATERIALS AND PROCESSES – 4.5 certification units**

The characteristics and properties of ferrous, nonferrous and composite materials are studied. Emphasis is placed on aircraft hardware, fittings, destructive testing, hand-tool use and familiarization. Heat treating, measurement techniques, corrosion and related technologies are investigated. Corequisite: GD01

#### **GO41 – AIRCRAFT OPERATIONS AND PUBLICATIONS – 3 certification units**

A detailed study is made of various maintenance publications, maintenance forms and records, and related Federal Air Regulations (FARs). Topics include the introduction to several nondestructive inspection procedures, along with corrosion detection, inspection and cleaning, as well as restoring protective finishes. Ground operations and services are covered. The airworthiness directive log (AD log) computerized maintenance program will be explored. Prerequisites: AH31, GM21

#### **GP01 – INTRODUCTION TO AIRCRAFT PHYSICS – 3 certification units**

An integrated physics and mathematics course designed as a foundation for the aviation-related physics needs of the aircraft technician. Laws of physics in mechanics, fluids, atmospherics, aerodynamics and thermodynamics as related to aviation are stressed, along with mathematical work to support the theory.

#### **PC52 – AIRCRAFT IGNITION SYSTEMS – 3 certification units**

Generation, distribution and control of engine ignition are studied. System, component and part operation, troubleshooting, servicing and repair are included. Laboratory experiments complement classwork. Prerequisites: AE20; GE10

#### **PE30 – POWERPLANT ELECTRICAL SYSTEMS – 2.5 certification units**

Engine electrical system components—AC and DC generators—and engine electrical system operations are studied. Aircraft powerplant electrical generation and operations, including troubleshooting, are also studied. Engine electrical system solenoid and motor-operated valves are examined. Lab projects supplement classwork. Prerequisites: AE20, GE10

#### **PO60 – AIRCRAFT MAINTENANCE OPERATIONS – 5 certification units**

A detailed study is made of the proper methods of operating, testing and evaluating the performance of the aircraft reciprocating powerplant 100-hour annual inspection, and flight line safety and operations. Included are computerized aircraft recording, record keeping, analysis of supporting systems, such as fire protection, engine instrumentation, turbocharging, system maintenance and troubleshooting, cockpit orientation and run-up of aircraft. Laboratory experience complements the classwork. Prerequisites or corequisites: PC52, PP53, PS51

#### **PP02 – CERTIFICATE PREPARATION POWERPLANT – 0 certification unit**

A comprehensive examination of powerplant subjects prior to the written Federal Aviation Administration (FAA) Powerplant Examination. Students not requiring FAA certification will substitute DP404 Project Seminar and DP405 Degree Project. Prerequisites: all powerplant subjects completed satisfactorily, airframe certificate or must take AA02 and PP02 in the same semester. Failure of any PP02 prerequisite will require retake of PP02.

#### **PP53 – POWERPLANT THEORY AND MAINTENANCE – 5 certification units**

A detailed study is made of reciprocating engines and their accessories. The theory of internal combustion engines is applied to specific powerplants, operational techniques are explored, and maintenance and overhaul techniques are analyzed. Lab experience includes inspection, repair and overhaul of the powerplant.

#### **PP61 – TURBINE ENGINE MAINTENANCE – 6 certification units**

This course is a study of high-performance gas turbine engines and how their accessories are made. Operational maintenance and overhaul techniques are analyzed. Students are introduced to procedures and run-up modern turbojet and turboprop engines.

#### **PS51 – POWERPLANT SYSTEMS I – 4 certification units**

A study is made of lubricants, lubrication systems and the operating principles of various powerplant systems, such as cooling and exhaust. The theory and operation of propellers are covered. Laboratory experience complements classroom work.

#### **PS60 – POWERPLANT SYSTEMS II – 3 certification units**

A study of fuel metering systems, such as float, pressure and fuel injection systems, is discussed. Fuel system operation is explored. Component inspection and repair are also included. Laboratory experience complements classroom work.

## ACADEMIC CALENDAR 2016 – 2017\*

\* All dates are subject to change. Check the website: [www.vaughn.edu](http://www.vaughn.edu).

### FALL SEMESTER 2016

Registration	Mon., December 21, 2015 through Wed., August 31, 2016
Classes Begin	Thurs., September 1, 8 a.m.
Late Registration Begins ( <i>late fee will be imposed</i> )	Thurs., September 1
Tuition Payment Due	Thurs., September 1
Program Adjustment Period ( <i>add/drop/change</i> )	Thurs., September 1 through Sat., September 17
Labor Day Holiday	Mon., September 5
Last Day to Register	Sat., September 17
Last Day to File for May 2017 Graduation	Fri., September 30
Columbus Day Holiday	Mon., October 10
Monday Schedule	Tues., October 11
Midterm Exam Period	Mon., October 17 through Sat., October 22
Last Day to Withdraw without Academic Penalty	Wed., October 26
Veterans Day Holiday	Fri., November 11
Thanksgiving Recess	Wed., November 23 through Sun., November 27
Classes Resume	Mon., November 28, 8 a.m.
Classes End	Thurs., December 15
Exam Period	Sat., December 17 through Fri., December 23
Early Summer and Fall 2017 Registration Begins	Mon., December 19
Spring/Summer 2016 Grade Change Deadline	Fri., December 23
Winter Recess	Sat., December 24 through Mon., January 16, 2017

### SPRING SEMESTER 2017

Registration	Mon., April 11, 2016 through Sat., January 14, 2017
Dr. Martin Luther King Jr. Day Holiday	Mon., January 16
Classes Begin	Tues., January 17, 8 a.m.
Late Registration Begins ( <i>late fee will be imposed</i> )	Tues., January 17
Tuition Payment Due	Tues., January 17
Program Adjustment Period ( <i>add/drop/change</i> )	Tues., January 17 through Mon., January 30
Last Day to Register	Mon., January 30
Presidents Day Holiday	Mon., February 20
Monday Schedule	Tues., February 21
Midterm Exam Period	Mon., February 27 through Sat., March 4
Last Day to Withdraw without Academic Penalty	Wed., March 8
Spring Recess	Mon., March 20 through Sun., March 26
Classes Resume	Mon., March 27, 8 a.m.
Last Day to File for September 2017 Graduation	Fri., March 31
Early Spring 2018 Registration Begins	Monday, April 10
Classes End	Tues., May 2
Exam Period	Wed., May 3 through Tues., May 9
Fall 2016 Grade Change Deadline	Tues., May 9
Honors Convocation	Wed., May 10
Commencement	Sat., May 20

### ACADEMIC SESSION I SUMMER 2017

Registration	Mon., December 19, 2016, through Fri., May 19, 2017
Classes Begin	Mon., May 22, 8 a.m.
Late Registration Begins ( <i>late fee will be imposed</i> )	Mon., May 22
Tuition Payment Due	Mon., May 22
Program Adjustment Period ( <i>add/drop/change</i> )	Mon., May 22 through Wed., May 24
Last Day to Register	Wed., May 24
Memorial Day Holiday	Mon., May 29
Last Day to Withdraw without Academic Penalty	Fri., June 9
Classes End	Fri., June 30
Last Day to File for December 2017 Graduation	Fri., June 30
Summer Recess	Mon., July 3 through Sun., July 9

### ACADEMIC SESSION II SUMMER 2017

Registration	Mon., December 19, 2016, through Fri., June 30, 2017
Classes Begin	Mon., July 10, 8 a.m.
Late Registration Begins ( <i>late fee will be imposed</i> )	Mon., July 10
Tuition Payment Due	Mon., July 10
Program Adjustment Period ( <i>add/drop/change</i> )	Mon., July 10 through Wed., July 12
Last Day to Register	Wed., July 12
Last Day to Withdraw without Academic Penalty	Fri., July 28
Classes End	Fri., August 18

## AVIATION TRAINING INSTITUTE CALENDAR 2016 – 2017\*

\* All dates are subject to change. Check the website: [www.vaughn.edu](http://www.vaughn.edu).

### FALL SEMESTER 2016

Registration	Mon., December 21, 2015, through Wed., August 31, 2016
Classes Begin	Thurs., September 1, 8 a.m.
Late Registration Begins ( <i>late fee will be imposed</i> )	Thurs., September 1
Tuition Payment Due	Thurs., September 1
Program Adjustment Period ( <i>add/drop/change</i> )	Thurs., September 1 through Sat., September 10
Labor Day Holiday	Mon., September 5
Last Day to Register	Sat., September 10
Last Day to File for May 2016 Graduation	Fri., September 30
Columbus Day Holiday	Mon., October 11
Monday Schedule	Tues., October 12
Last Day to Withdraw without Academic Penalty	Wed., October 26
Midterm Exam Period	Mon., October 17 through Sat., October 22
Early Spring Registration Begins	Mon., November 7
Veterans Day Holiday	Fri., November 11
Thanksgiving Recess	Wed., November 23 through Sun., November 27
Classes Resume	Mon., November 28, 8 a.m.
Classes End	Thurs., December 15
Exam Period	Fri., December 16 through Thurs., December 22
Spring/Summer 2016 Grade Change Deadline	Fri., December 23
Winter Recess	Sat., December 24, 2016, through Sun., January 8, 2017

### SPRING SEMESTER 2017

Registration	Mon., April 11, 2016 through Sat., January 7, 2017
Classes Begin	Mon., January 9, 8 a.m.
Late Registration Begins ( <i>late fee will be imposed</i> )	Mon., January 9
Tuition Payment Due	Mon., January 9
Program Adjustment Period ( <i>add/drop/change</i> )	Mon., January 9 through Sat., January 14
Last Day to Register	Sat., January 14
Dr. Martin Luther King Jr. Day Holiday	Mon., January 16
Presidents Day Holiday	Mon., February 20
Monday Schedule	Tues., February 21
Midterm Exam Period	Mon., February 27 through Sat., March 4
Early Summer and Fall 2017 Registration Begins	Mon., December 19, 2016
Early Spring 2018 Registration Begins	Mon., April 10, 2016
Last Day to Withdraw without Academic Penalty	Wed., March 1
Spring Recess	Mon., March 20 through Sun., March 26
Classes Resume	Mon., March 27, 8 a.m.
Last Day to File for September 2017 Graduation	Fri., March 31
Classes End	Tues., April 25
Exam Period	Wed., April 26 through Tues., May 2
Fall 2016 Grade Change Deadline	Tues., May 2
Honors Convocation	Wed., May 10
Commencement	Sat., May 20

### SESSION I SUMMER 2017

Registration	Mon., December 19, 2016 through Sat., May 13, 2017
Classes Begin	Mon., May 15, 8 a.m.
Late Registration Begins ( <i>late fee will be imposed</i> )	Mon., May 15
Tuition Payment Due	Mon., May 15
Program Adjustment Period ( <i>add/drop/change</i> )	Mon., May 15 through Tues., May 16
Last Day to Register	Tues., May 16
Memorial Day Holiday	Mon., May 29
Last Day to Withdraw without Academic Penalty	Wed., June 7
Classes End	Fri., June 30
Last Day to File for December 2017 Graduation	Fri., June 30
Summer Recess	Mon., July 3 through Sun., July 9

### SESSION II SUMMER 2017

Registration	Mon., December 19, 2016, through Fri., June 30, 2017
Classes Begin	Mon., July 10, 8 a.m.
Late Registration Begins ( <i>late fee will be imposed</i> )	Mon., July 10
Tuition Payment Due	Mon., July 10
Program Adjustment Period ( <i>add/drop/change</i> )	Mon., July 10 through Tues., July 11
Last Day to Register	Tues., July 11
Last Day to Withdraw without Academic Penalty	Wed., August 2
Classes End	Fri., August 25

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## DIRECTIONS TO THE VAUGHN COLLEGE CAMPUS

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### **By public transportation:**

Take the E or F train to Roosevelt Avenue—Jackson Heights (express stop) or the No. 7 train to 74th Street—Broadway (local stop), then take the Q33 LaGuardia Airport bus to the College at 87th Street or the Q48 Marine Air Terminal bus from Main Street, Flushing.

The M60 bus is a local service between Morningside Heights, Manhattan and LaGuardia Airport, Queens. The bus leaves from Broadway and West 106th Street, proceeds north on Broadway and then east on 125th Street. It crosses the Robert F. Kennedy (Triborough) Bridge into Queens and stops across the street from the College on 23rd Avenue at 87th Street.

Visit these helpful websites: [mta.info](http://mta.info) and [hopstop.com](http://hopstop.com)

### **By automobile:**

When using a GPS device, please enter Vaughn's address as:

8601 23rd Avenue  
East Elmhurst, NY 11369

#### ***From Brooklyn:***

Take the Brooklyn-Queens Expressway to LaGuardia Airport Exit 39. Take Astoria Boulevard East to 85th Street, then turn left one block and right onto 23rd Avenue. Proceed to 90th Street, and make a left turn into the College.

#### ***From Long Island:***

Via Grand Central Parkway westbound: Take LaGuardia Airport Exit 7—94th Street. Follow the long exit ramp, and make a left turn onto 94th Street. Proceed to top of the hill, which is 23rd Avenue. Make a right on 23rd Avenue to the College at 90th Street.

#### ***From Manhattan:***

Via Grand Central Parkway eastbound: Take LaGuardia Airport Exit 6—94th Street. Stay in the right lane, and make a right turn onto 94th Street. Proceed to the top of the hill, which is 23rd Avenue. Make a right on 23rd Avenue to the College at 90th Street.

#### ***From New Jersey and Points South:***

Head northeast on I-95 north (partial toll road) entering New York. Take Exit 1C-3 to merge onto I-87 South/Major Deegan Expressway toward Queens. Take the exit onto I-278 toward Queens/Triborough Bridge/Manhattan (partial toll road). Continue east on Grand Central Parkway (signs for Grand Central Parkway East/LaGuardia Airport). Take Exit 6 toward 94th Street. Merge onto Ditmars Boulevard. Turn right at 94th Street. Turn right at 23rd Avenue to the College at 90th Street.

#### ***From Upstate New York and Points North:***

Head south on I-87/New York State Thruway south (partial toll road). Take Exit 13S for Palisades Parkway south toward New Jersey. Merge onto Palisades Interstate Parkway south entering New Jersey. Take the exit toward the George Washington Bridge (partial toll road). Merge onto I-95 North/US-1 North entering New York. Take Exit 1C-3 to merge onto I-87 S/Major Deegan Expressway toward Queens. Take the exit onto I-278 toward Queens/Triborough Bridge/Manhattan (partial toll road). Continue east on Grand Central Parkway (signs for Grand Central Parkway East/LaGuardia Airport). Take Exit 6 toward 94th Street. Merge onto Ditmars Boulevard. Turn right at 94th Street. Turn right at 23rd Avenue to the College at 90th Street.

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