

VaughnCollege

of aeronautics and technology



Undergraduate Catalog 2011–2012

86-01 23rd Avenue, Flushing, NY 11369
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Vaughn College
of Aeronautics and Technology
Undergraduate Catalog 2011–2012

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, extension 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 non-discrimination 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

BRIEF HISTORY

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 91 and 92.

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. Plans are also under way to include a new library, additional degree programs and other improvements to the campus. This vision calls 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 95 percent of our graduates are employed or continue their education within one year of graduation.

VISION AND MISSION

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, engineer

ing 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; and
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.

CAMPUS LOCATION

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 liaison 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

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 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 conference and Web-based classes.

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 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 videoconferencing or on campus, with no minimum or maximum number of credits in any one category (while following the degree requirements).

FLIGHT SIMULATOR CENTER

Vaughn's \$1-million flight simulator center includes a Frasca 241 and 142, two Redbirds and one CRJ-200 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 circling approaches. These simulators can be reconfigured to represent most of the airplanes in a training fleet. The advanced instructor's 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 PA-34 and Baron B-58.

An additional simulator, a new Frasca 241, envelops students in 220 degrees of Tru-Vision flight. This flight training device can be configured to represent a single-engine Cessna 172. 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-200 cockpit. A fully enclosed flight deck and 220-degree wraparound visuals immerse a pilot in the training environment.

HANGAR COMPLEX

The hangar complex provides a realistic aviation setting for students to perform hands-on maintenance on a variety of aircraft. The present fleet comprises two 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 and corrosion control laboratories that are specifically designed to offer hands-on courses in aircraft composite structures and non-destructive testing procedures.

INFORMATION TECHNOLOGY SERVICES

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. The portal provides customizable information, a daily campus calendar, as well as news and information.

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

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 Communication Commission (FCC) commercial license examination, the FAA Air Traffic-Collegiate Training Initiative (AT-CTI) screening exam, as well as many computer company certification tests can be taken at the center.

TEST CENTER HOURS:

Mondays, Wednesdays and Fridays,
9 a.m. to 5 p.m.

LIBRARY

Vaughn's library offers extensive general, technical, resource and periodical material totaling more than 85,000 volumes. The real and virtual resources include books, periodicals, DVDs and research databases.

There are more than 180 periodical titles in the library's collection. The video collection is comprised of subject videos to support the College's curriculum, general interest videos and movies. The library houses more than 4,000 videos and DVDs.

Research Databases and Information Literacy
There are research databases available that contain more than 22,000 full-text periodicals and newspapers. In addition, the library has an e-book collection of more than 54,000 full-text online books. All faculty, staff and students can access these databases by registering at the site. To register, you must first have a Vaughn e-mail account.

An information literacy module is embedded in the library site. This module is part of the information literacy course (ILT101) offered by Vaughn College and is a requirement for all students enrolled in any associate in applied science or bachelor of science degree. All students, faculty and staff members can access the module to assess their skills in informational literacy.

Ten personal computers are available for student use in the reference area, and two general-use computer labs are also available for student use.

The library, which occupies more than 4,500 square feet, offers seating for 100 students and has an attached computer lab with 20 computer stations and four virtual flight simulator stations.

LIBRARY HOURS:

Mondays and Tuesdays
7:30 a.m. to 11 p.m.

Wednesdays and Thursdays
7:30 a.m. to 9 p.m.

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

Saturdays
8 a.m. to 5 p.m.

Sundays
12 p.m. to 5 p.m.

TEACHING AND LEARNING CENTER

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 Advisement Center (SAC), the Writing Center and Language Lab.

For detailed information on these programs and other resources, please see page 28.

ENROLLMENT SERVICES

ADMISSIONS

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

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

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, SAT or TOEFL exams.

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 SAT1 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 over a 500 score 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 year-long progress.

Freshman Applicants

Students who have completed or expect to complete a high school diploma, GED or the equivalent of a U.S. 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 United States, can apply for either the fall, spring or summer semester, upon completion of secondary school.

Applicants for Re-Entry

Vaughn College students who have not been in attendance for one semester or more are required to apply for re-entry if they have not been maintaining matriculation. Students applying for readmission are expected to state their reasons for leaving the College and why they desire 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 re-entry 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 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.

THE APPLICATION PROCESS

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 non-refundable fee, payable to Vaughn College, in the form of a personal bank check or money order, is required of each applicant. This fee may be waived with an official fee waiver from

your school's college or transfer advisor. Cash, check or credit card payments may be made in person.

TRANSCRIPTS

High School Transcripts

A record of all work completed at the time of application is required. This report should include certified records of any national examinations required for completion of secondary education (e.g., CXC, GCE "O" and "A" level, IB, French Baccalaureat, 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 3 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 are 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 must 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.

Standardized Tests

Official results of the Scholastic Assessment Test (SAT1 reasoning exam) or the American College Test (ACT) are required for students applying to all bachelor degree programs. Upon consent of the director of admissions, the Test of English as a Foreign Language (TOEFL) exam may be substituted for an SAT1 or ACT exam for students to whom English is not a native language. 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

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

International applicants should visit the international student section of Vaughn's Web page, www.vaughn.edu to read and download the latest information and forms. The International Student Guide should be the first document you review.

Applicants who have completed their secondary education in other countries are requested to submit certified 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).
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 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. 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. Minimum score of 560 on the paper exam, 220 on the computerized exam or 83 on the Internet-based exam is required.

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
College Board SAT Program
P.O. Box 025505, Miami, FL 33402

For TOEFL @www.ets.org
Educational Testing Service
P.O. Box 6151, Princeton, NJ 08541

For the ACT @www.act.org
American College Testing Program
P.O. Box 168, Iowa City, IA 52243

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 that there is adequate financial support (\$30,000 per annum; for flight students, \$39,500 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
Phone: 1.866.6VAUGHN
Fax: 1.718.779.2231
E-mail: admitme@vaughn.edu
Website: <http://www.vaughn.edu>

FINANCES FOR INTERNATIONAL STUDENTS

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 non-refundable tuition deposit of \$400 U.S. to reserve a place among the entering class. Once the affidavit of support and other proof of financial ability has 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.

VETERAN APPLICANTS

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

While Vaughn does not make any pre-admission 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 senior vice president and the assistant vice president of human resources and college services.

FINANCIAL AID INFORMATION

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.

THE 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 as 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 866.6.VAUGHN, ext. 100.

CONSOLIDATION LOANS

Consolidation loans combine several student or parent loans into one bigger loan from a single lender, 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 private consolidation loans for private education loans as well.

A separate page provides a comparison chart of

consolidation loan discounts.

Most Federal Directlenders are no longer offering consolidation loans. Students can still consolidate their loans with the US Department of Education's Federal Direct Loan Consolidation program at loanconsolidation.ed.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 non-citizen
- 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

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: \$304 to \$5,550, 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: \$75 to \$1,000

FEDERAL WORK STUDY (FWS)

Federal Work-Study (FWS) provides part-time jobs to undergraduate and graduate students with financial need, allowing them to earn money to help pay 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 direct otherwise) and at least on a monthly basis. Wages for the program must equal at least 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

This loan is 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 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. To learn more about the Direct Parent PLUS loan, students and parents can log on to www.dl.ed.gov.

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

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

SATISFACTORY PROGRESS STANDARD FOR TITLE IV FEDERAL STUDENT ASSISTANCE

To maintain eligibility for federal student financial assistance, you must make satisfactory progress toward the completion of a degree. The requirements for federal assistance are different from those for New York state assistance.

You must maintain the required cumulative grade point average of 2.0.

In order to make satisfactory progress toward the completion of a degree, an undergraduate student must accumulate credits toward the degree according to the following standards:

Satisfactory Progress Standard for Title IV Federal Student Aid:

Award year	Credits attempted	Minimum number of credits achieved
First	12-29	19
Second	30-59	39
Third	60-89	59
Fourth	90-119	79
Fifth	120-149	99
Sixth	150-180	120

If you fail to meet either the satisfactory progress or provisional standards, you will lose eligibility for federal financial assistance and have the right to appeal. A successful appeal will result in the granting of a waiver and a one-year probation period, during which you will be expected to improve your record.

Failure to maintain program pursuit and academic progress will result in suspension of Title IV aid (Pell, Stafford loans, SEOG, FWS) eligibility.

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 Free Application for Federal Student Aid (FAFSA) and TAP application forms that will be mailed to them after they have filed the FAFSA.

Award range: \$360 to \$4,950

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 below.

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.com/content.nsf/SFC/O/grants_scholarships_and_awards_quick_reference

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

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 2010-11 for non-remedial 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

without state aid

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

- 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 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 is used to assist new and continuing students. Awards are granted to students who are matriculating on a full-time basis 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
3. Maintain a cumulative grade point average of no less than 2.0

Awards range: \$475 to \$2,200

BOOK VOUCHERS

Book vouchers are designed to help students who need access to financial aid funds to purchase

Associate Program

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

- Making up the deficiency while attending,

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 can not 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 established 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 (i.e., 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 Jean Rivera, the College's veterans affairs liaison and assistant manager of student accounts at 1.866.6VAUGHN, ext. 150. Her e-mail address is jean.rivera@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 evidence 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 2011-12 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.

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 Veteran Affairs. Visit www.gi-bill.va.gov to learn more about this bill.

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.

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 B and a combined SAT1 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 "B" and combined SAT1 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. 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 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 B
- Score at least a cumulative 1000 on the SAT I 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, they will be applied to the Gold Wings award. College fees, 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 sci-

ence 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 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 2011-2012 will be \$1,000.

JOSEPH GRILLI MEMORIAL SCHOLARSHIP

In memory of Joseph Grilli, the late associate professor of 37 years, this scholarship is awarded to an incoming student who plans to pursue a bachelor's degree at the College.

The application process will begin on or about February 15 of each year. Students will be asked to complete a one-page letter of interest and a written recommendation from a faculty member or guidance counselor. One student will be awarded the scholarship for the following academic year.

Eligibility is based on academic excellence and demonstration of exemplary citizenship. The number and dollar amount of this award is determined by the level and availability of funding.

ROBERT AND IRENE ZINCONE 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 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 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 average of not less than 85 percent; has performed service to the high school community and demonstrates financial need.

VAUGHN AWARDS FOR CONTINUING STUDENTS

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 comprised 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

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 non-taxable 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

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

A non-refundable 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

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. Full-time tuition is charged to students taking 12 to 18 credits/units. A per credit/unit charge is applied to students taking 11 or less credits. Exact charges for 2011-2012 are listed on page 21.

ROOM AND BOARD

For the 2011-2012 academic year, per-semester cost for a room in Vaughn's residence hall is \$4,950 for a single in a two-person suite; \$4,300 for a double in a four-person suite; \$3,780 for a room in a triple suite; or \$3,650 for a room in a quadruple suite. A \$250 housing deposit is required. Most residents live in either a two-person or four-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 student. Each room is also equipped with a phone, cable TV hookup and computer port.

Meal plan options include: \$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

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.

The housing deposit will be held by the College as a damage deposit and will not be credited to your housing bill. 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 non-refundable application fee of \$40 is required with the application for admission. A re-entry fee of \$40 is due by all students re-entering the College after withdrawal (more than one semester of absence) and is non-refundable.

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. Registration forms to maintain matriculation 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 in order to maintain matriculation.

IMMUNIZATION FEE

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

CERTIFICATION FEES

AA02 Certificate Preparation—General \$300
AA02 Certificate Preparation—Airframe \$300
AA02 Certificate Preparation—Compliance fee \$100
PP02 Certificate Preparation—Powerplant \$300
PP02 Certificate Preparation—Compliance fee \$50
AVT250FCC License Review—\$925
AVT250FCC License Review—\$60

These fees cover the costs of written, oral and practical examinations.

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.

SEMESTER FEE

A non-refundable semester fee of \$200 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, orientation, immunization, identification cards and other student services. It does not cover the following course:

DP409 — Degree Project: all non-maintenance

programs will receive a three-credit charge.

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

CD101— Career Development

DP409 — 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 FEE

A fee of \$1,000 is required for course FLT221, which covers 10 hours of individual simulator use and instruction at \$100 per hour. A fee of \$500 for FLT360 is required to cover five hours of individual simulator use and instruction at \$100 per hour. A fee of \$675 is required for each course of FLT110 and FLT120 to cover the lab section of the FAA written exam preparation and a test, as well as five hours of individual simulator use and instruction at \$100 per hour.

BY-PASS EXAMINATION FEE

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

GRADUATION FEE

A graduation fee of \$80 is required when registering for “GRADF” in the final semester.

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 of each semester. At that time, students must make payment, in full, using one or a combination of the following methods: check, money order, credit card, federal or state financial aid, Vaughn College scholarship or grant, private grant, or a third-party payment.

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 2011-2012 FEE SCHEDULE

Activity	Fee
Academic-audit	\$600 per course
ATI-audit	\$435 per course
Application	\$40 per application
By-pass exam	\$75 per credit
FCC License Review-AVT250	\$925
FCC License Exam Fee-AVT250	\$60 per first exam
Certificate (AA02–Airframe)	\$300 per certificate
Certificate (AA02–General)	\$300 per certificate
Certificate (PP02 Powerplant)	\$300 per certificate
FAA Compliance Fee	\$50 per exam
ATC License Review-ATC300	\$500
Graduation fee	\$80 per student
Housing Deposit	\$250 fall/spring; \$100 summer
Immunization	\$10 per shot
ID fee	\$5 per card
Meal puck fee	\$10 per puck
Laboratory	\$50 per lab
Late payment	\$50 per incident
Late registration	\$50
Returned check fee	\$25 per incident
Maintenance of matriculation	\$50 per semester
Program adjustment (add, drop, change of curriculum, etc.)	\$10 per transaction
Change of Curriculum	\$10 per transaction
Re-entry	\$40 per application
Semester fee (LaGuardia)	\$200 per semester
Simulator fee	\$100 (per hour-simulator usage)
Transcript	\$5 per transcript
Tuition deposit	\$100 per student
International tuition deposit	\$400 per student
Overload-academic-over 18 credits	\$540 per credit
Distance learning undergraduate	\$540 per credit
Distance learning graduate	\$679.50 per credit
<u>Locker Rental</u>	\$15 for two semesters (fall & spring) \$10 for one semester (fall & spring) \$5 for both summer sessions
<u>Tuition</u>	
Full-time Academic Admitted Prior to 09/05	\$7,500 (12-18 credits) flat rate per semester
Part-time Academic Admitted Prior to 09/05	\$540 per credit
Full-time Academic Admitted After 08/05	\$9,000 (12-18 credits) flat rate per semester
Part-time Academic Admitted After 08/05	\$600 per credit
Full-time Aviation Training Institute (ATI) Students	\$6,950 per semester
Part-time ATI Students	\$435 per credit

HOUSING CHARGES

Residence Hall Room Rates

Single	\$4,950 per semester
Double	\$4,300 per semester
Triple room	\$3,780 per semester
Quadruple room	\$3,650 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

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

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 24. Refund checks are mailed directly to the student's home by the student accounts department. Students who have made a partial payment on their bills will have their tuition liability calculated according to the schedule on page 24. 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

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 e-mailing a copy to Beatriz Cruz at 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 pre-registered 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 anytime 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 (excessive absences, stopped attending by mid-term, or other). An appropriate Title IV refund calculation will be performed based on last day of attendance.

FX—Withdrawal due to administrative reasons (excessive absences after midterm). Academic penalty will be computed into the grade point average as a grade of "F." Title IV refund will be calculated if the withdrawal is 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
36th day and after	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 23.

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 or 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)
- De-registration for the semester
- Surrender of your account to a collection agency (affects your credit rating)

Before de-registration, students affected are notified by first-class mail and given 10 business days to take corrective action. Once de-registration 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

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

FINANCIAL ARREARS POLICY

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 bachelor 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 HEGIS code numbers. Enrollment in other than registered or otherwise approved programs may jeopardize a student's eligibility for certain student aid awards.

Master of Science Degree Curricula –
• Airport Management 0510

Bachelor of Science Degree Curricula – Engineering
• Mechatronic Engineering 0910

Aeronautical Technology
• Aircraft Operations 0925
• Aviation Maintenance 0925

Mechanical Engineering Technology
• Aeronautical 0925
• Computer-Aided Design 0925

Electronic Engineering Technology
• Avionics 0925
• General 0925

Electronic Technology
• Optical Communications 0925

Management
• General Management 0506
• Airline Management 0506
• Airport Management 0506
• Aviation Maintenance Management 0506

Associate in Applied Science Degree Curricula –
Aeronautical Engineering Technology
• Aeronautical Engineering Technology 5302

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

Associate in Applied Science Degree Curricula – Aviation Management
• Airport Management 5099

Associate in Applied Science Degree Curricula – Electronic Engineering Technology
• Avionics 5302

Associate in Occupational Studies Degree Curricula
• Airframe and Powerplant 5302

Airframe and Powerplant Certificate Program 5302

ACCREDITATION

Vaughn College of Aeronautics and Technology is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 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 ABET, <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 was granted accreditation for its associate of applied science and bachelor of science management degree programs through the International Assembly for Collegiate Business Education (IACBE).

APPROVALS

1. This institution is authorized under federal law to enroll non-immigrant 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

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
- The American Society for Engineering Education
- Aviation Technical Education Council
- The 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
- New York Aviation Management Association
- Professional Aviation Maintenance Association
- Society of Automotive Engineers
- The National Safety Council
- University Aviation Association
- Women in Aviation International

ACADEMIC DEFINITIONS

The following are academic definitions used by Vaughn:

- An associate of applied science, 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

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

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

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 programs.

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

Faculty members are the first and most important advisors in academic matters and should be consulted frequently both in and out of the classroom. Consultation hours are scheduled by faculty and professional advisors.

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

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

CREDIT FOR PRE-CALCULUS MAT 115

At times 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 1 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

The office of academic support services has a number of support units available to students. These units consist of the Academic Resource Center (ARC), the Freshman Year Experience (FYE), writing center and language lab, the Higher Education Opportunity Program (HEOP), the assessment center, as well as the Student Advisement Center (SAC), the Upward Bound Program (for high school students) and Aviation Outreach (for middle school, high school and college students).

Student Advisement Center (SAC)

The Student Advisement Center (SAC) 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 SAC is designed to provide students with practical solutions, from the point of admission to graduation, in achieving academic success and maintaining matriculation.

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-to-one basis at a mutually convenient time. 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. 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.

Audio-Visual 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 "Admission Procedures" on page 5.

WORKSHOPS

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 and time management.

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 students' 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.

ATI 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. Students will supplement classroom work through a higher level of analysis by exploring actual laboratory components.

FLT110 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 Workshops

FLT120 workshops focus on instrument flying and instrument flight rules (IFR). Discussions are held about 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 also 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

The Supplemental Instructions Program is an interactive tutorial program, designed to offer students the opportunity of real-time assistance. A supplemental instructor is on staff concurrently when students have class, providing guidance during class time. 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 SI instructors are also a part of the Teaching and Learning Center, which further provides tutoring assistance outside the classroom.

FRESHMAN YEAR EXPERIENCE

The Freshman Year Experience is designed to provide a quality learning environment, 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 are also encouraged to learn the requirements for their academic programs and take responsibility for ensuring a smooth matriculation. 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 Freshman Year Experience. Successful upper-class students assist in the Freshman Seminar 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 pre-college residential program offered during the summer. It introduces qualified pre-freshmen to fundamental math, science, English, technical and aviation-related concepts. Upon successful completion, students can earn up to eight college credits to prepare them for college-level courses, enhance their pathway to degree completion and satisfy curriculum requirements.

Upward Bound Program

The TRiO Upward Bound (UB) Program is a federally funded 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 tu-

toring, 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 post-secondary 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)

Part of academic support services, the Science and Technology Entry Program (STEP) is a New York state-funded program dedicated to preparing historically underrepresented and economically disadvantaged students for entry into college. STEP aims to increase the number of prepared students that 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.

Summer Awareness Institute

STEP provides a six-week Summer Aviation Awareness program that introduces eligible high school students to the worlds of aviation and college through seminars and hands-on laboratory experiences.

The Bridge Program

Through STEP, Vaughn College, in affiliation with Aviation High School, offers advanced placement (AP) courses in science and mathematics, enabling students to earn college credits. The program includes extensive student counseling and support for the transition from high school to college.

ATTENDANCE POLICY

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 their attendance status and appropriately advised thereafter by the student academic support services department.

ACADEMIC STANDARDS, CATEGORIES AND PROCEDURES

- **Good academic standing:** Students earning a 2.0 grade point average (GPA) or better and making progress toward their degree.
- **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 assistant 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 assistant vice president of academic support services or a representative. The student **MUST** arrange weekly meetings with an advisor to resolve any academic issues. At this point, the student will be limited to part-time credits.
- **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 of 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 re-entered 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 re-enroll 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 non-matriculated status for academic deficiencies.

ACADEMIC PERFORMANCE

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

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

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

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 re-take the course at Vaughn College. (See also "Taking Courses at Another College or University," page 44.)

BY-PASS EXAMINATIONS

Vaughn offers applicants and students the opportunity to take by-pass examinations on the basis of equivalent studies completed at accredited secondary and/or post-secondary institutions. By-pass 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 by-pass 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.

By-pass 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 “By-pass Examination Fee, page 20). A student may by-pass a number of courses, but may attempt to by-pass any given course only once. Federal Aviation Administration regulations may limit the availability of by-pass exams in certain areas. By-pass examinations may adversely impact financial aid, and students receiving aid should confer with a financial aid counselor before taking the by-pass examination.

ACADEMIC HONESTY

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

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 senior vice president in writing. The senior 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.

DEFINITION OF ACADEMIC CREDITS AND CERTIFICATION UNITS

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 non-traditional 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 assistant 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 LaserGrade 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 his/her degree program, the student's final grade in the course will count toward the student's cumulative grade point average.

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 (make-up 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 paper work 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) Seminars

If a student fails his/her Federal Aviation Administration screenings, he/she has one semester to re-take the exam. After one semester, the student will have to re-register for the course(s).

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

There are only two grades issued for AA02/PP02: P – Passing or F – Failing. 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. Outstanding tuition balance
2. Outstanding library dues
3. Failing pre-/co-requisite courses
4. Unable to fulfill make-up hours requirements, if applicable

Students have up to two semesters to satisfy the failing pre-/co-requisite requirements. If students exceed this limit, they will have to repeat AA02/PP02. 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 31.

DEGREE PROJECT

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 non-certification 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

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.

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 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 course work available in a regularly offered course and may not duplicate course work for which a student has been previously received credit. Exceptions must be approved by the senior vice president.

GRADUATION REQUIREMENTS

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 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 director of financial aid within 15 working days from when the completed application is received.

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

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 upon 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 2, but subsequently did not graduate in his/her initial program because he/she did not successfully complete all academic requirements, will have their 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 42) 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

In other areas of specialization, students may earn a single degree with a dual major within the same department. Dual majors will be awarded in the following areas for bachelor’s 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

Students must:

1. File a “Degree 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. Register for “GRADF” on their registration form. There is a \$80 graduation fee.
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

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 35.)

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 the 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 2011 – 2012 *

Corrected November 8, 2011

* All dates are subject to change. Check the website: www.vaughn.edu

FALL SEMESTER 2011

New Student Registration
Continuing Student Early Registration
Continuing Student Regular Registration
Labor Day Holiday
Classes Begin
Late Registration Begins (*late fee will be imposed*)
Tuition Payment Due
Program Adjustment Period (*add/drop/change*)
Last Day to Register
Columbus Day Holiday
Last Day to Withdraw without Academic Penalty
Veterans Day Holiday
Early Spring Registration Begins
Monday Schedule
Thanksgiving Recess
Classes Resume
Classes End
Exam Period
Spring/Summer 2011 Grade Change Deadline
Winter Recess

Mon., March 21 through Sat., September 17, 2011
Mon., March 21 through Fri., May 6
Mon., May 9 through Fri., September 2
Mon., September 5
Tues., September 6, 8 a.m.
Tues., September 6
Tues., September 6
Tues., September 6 through Sat., September 17
Sat., September 17
Mon., October 10
Tues., October 25
Fri., November 11
Mon., November 14
Tues., November 15
Wed., November 23 through Sun., November 27
Mon., November 28, 8 a.m.
Thurs., December 15
Fri., December 16 through Fri., December 23
Fri., December 23
Fri., December 24 through Mon., January 16, 2012

SPRING SEMESTER 2012

New Student Registration
Continuing Student Early Registration
Continuing Student Regular Registration
Dr. Martin Luther King, Jr. Day Holiday
Classes Begin
Late Registration Begins (*late fee will be imposed*)
Tuition Payment Due
Program Adjustment Period (*add/drop/change*)
Last Day to Register
Presidents' Day
Early Summer and Fall 2010 Registration Begins
Last Day to Withdraw without Academic Penalty
Spring Recess
Classes Resume
Classes End
Exam Period
Honors Convocation
Fall 2011 Grade Change Deadline
Commencement

Mon., Nov. 14, 2011 through Mon., Jan. 30, 2012
Mon., Nov. 14, 2011 through Fri., Dec. 23, 2011
Tues., January 3, 2012 through Sat., January 14, 2012
Mon., January 16
Tues., January 17, 8 a.m.
Tues., January 17
Tues., January 17
Tues., January 17 to Sat., Jan. 28
Mon., January 30
Mon., February 20
Mon., March 12
Tues., March 13
Mon., March 19 through Sun., March 25
Mon., March 26, 8 a.m.
Tues., May 1
Wed., May 2 through Tues., May 8
Thurs., May 10
Tues., May 10
Sat., May 19

ACADEMIC SESSION I SUMMER 2012

Continuing Student Early Registration
Continuing Student Regular Registration
Classes Begin
Late Registration Begins (*late fee will be imposed*)
Tuition Payment Due
Last Day to Register
Memorial Day Holiday
Last Day to Withdraw
Classes End
Vaughn Closed

Mon., March 12 through Fri., May 4, 2012
Mon., May 7 through Fri., May 18
Mon., May 21, 8 a.m.
Mon., May 21
Mon., May 21
Wed., May 23
Mon., May 28
Fri., June 8
Fri., June 29
Mon., July 2 through Sun., July 8

ACADEMIC SESSION II SUMMER 2012

Continuing Student Early Registration
Classes Begin
Late Registration Begins (*late fee will be imposed*)
Tuition Payment Due
Last Day to Register
Last Day to Withdraw
Classes End

Mon., March 11 through Fri., June 29, 2012
Mon., July 9, 8 a.m.
Mon., July 9
Mon., July 9
Wed., July 11
Tues., July 31
Fri., August 17

AVIATION TRAINING INSTITUTE CALENDAR 2011 – 2012*

* All dates are subject to change. Check the website: www.vaughn.edu

FALL SEMESTER 2011

New Student Registration	Mon., March 21 through Tues., September 13, 2011
Continuing Student Early Registration	Mon., March 21 through Fri., May 6
Continuing Student Regular Registration	Mon., May 9 through Fri., September 2
Labor Day Holiday	Mon., September 5
Late Registration Begins (<i>late fee will be imposed</i>)	Tues., September 6
Classes Begin	Tues., September 6, 8 a.m.
Tuition Payment Due	Tues., September 6
Program Adjustment Period (<i>add/drop/change</i>)	Tues., September 6 through Tues., September 13
Last Day to Register	Tues., September 13
Last Day to File for May 2011 Graduation	Fri., October 7
Columbus Day Holiday	Mon., October 10
Last Day to Withdraw without Academic Penalty	Tues., October 25
Veterans Day Holiday	Fri., November 11
Early Spring 2011 Registration Begins	Mon., November 14
Monday Schedule	Tues., November 15
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 Fri., December 23
Winter Recess	Fri., December 24 through Fri., January 6, 2012

SPRING SEMESTER 2012

New Student Registration	Mon., November 14, 2011 through Tues., January 17, 2012
Continuing Student Early Registration 2011	Mon., November 14, 2011 through Fri., Dec. 23,
Continuing Student Registration	Tues., January 3, 2012 through Sat., January 7
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 to Tues., January 17
Last Day to Register	Sat., January 14
Dr. Martin Luther King, Jr. Day Holiday	Mon., January 16
Presidents' Day	Mon., February 20
Last Day to Withdraw without Academic Penalty	Tues., March 6
Early Summer and Fall 2012 Registration Begins	Mon., March 12
Spring Recess	Mon., March 19 through Sun., March 25
Classes Resume	Mon., March 26, 8 a.m.
Classes End	Tues., May 1
Exam Period	Wed., May 2 through Mon., May 7
ATI Makeup Classes	Tues., May 8 through Fri., May 11
Honors Convocation	Thurs., May 10
Commencement	Sat., May 19

ATI SESSION I SUMMER 2012

Continuing Student Early Registration	Mon. March 12 through Fri., May 4, 2012
Continuing Student Regular Registration	Mon., May 7 through Fri., May 11
Classes Begin	Mon., May 14, 8 a.m.
Late Registration Begins (<i>late fee will be imposed</i>)	Mon., May 14
Tuition Payment Due	Mon., May 14
Last Day to Register	Tues., May 15
Memorial Day Holiday	Mon., May 28
Last Day to Withdraw	Fri., June 1
Classes End	Fri., June 29
Vaughn Closed	Mon., July 2 through Sun., July 8

ATI SESSION II SUMMER 2011

Continuing Student Early Registration	Mon., March 12 through Fri., June 29, 2012
Classes Begin	Mon., July 9, 8 a.m.
Late Registration Begins (<i>late fee will be imposed</i>)	Mon., July 9
Tuition Payment Due	Mon., July 9
Last Day to Register	Tues., July 10
Last Day to Withdraw	Tues., July 31

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	W	Official Withdrawal attended
I	Incomplete—Not Computed in Index			WX	Withdrawal due to administrative reasons
NA	Registered but never attended			FX	Withdrawal due to excessive absences
Codes					
AL	Credit by Airframe Certificate				
APCR	Advanced Placement Credit				
APL	Credit by Airframe and Powerplant Certificate				
CE	Credit by Examination				
CL	Credit by Other License or Certificate				
PL	Credit by Powerplant Certificate				
H	Life Experience				
FCC	Credit by FCC License				
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/AP02 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		$36.5 \div 13$ = 2.80 GPA

STUDENT RECORDS AND REGISTRATION

STANDARDS OF ACHIEVEMENT

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

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

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

Classes meet Monday through Saturday. Classes are offered on Saturdays between 8 a.m. and 5:50 p.m.

There are scheduled breaks and observed holidays during each semester. Consult the academic and Aviation Training Institute calendars (pages 38 and 39, 128 and 128.)

ABSENCES AND LATENESS

ACADEMIC COURSES

Regular attendance is essential for satisfactory academic performance. Students are also advised that additional attendance requirements may be 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. Absences up to 10 percent of the contact hours in each subject, either lecture or lab, must be made up. Absences in excess of 10 percent of the contact hours will result in a final grade of "FX" (failure due to excessive absence). All absences in FAA-approved courses must be made up.

CONTINUOUS DEGREE PROGRESSION

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, most recent catalog.

CHANGE OF CURRICULUM

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

International students must seek approval by the international student advisor. 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

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 faculty or staff advisor. Additional approval might be necessary in cases where:

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;
2. Late registrants need additional approval from the instructor teaching the course or the department chair to determine eligibility;
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 regis-

tration 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 advisor (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 23.)

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 pre-registers, 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.

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.
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 pro-rated (refer to page 24, “Tuition Refund Schedule”).

*Refer to page 40, under “Grading System” to determine which grade is applicable: NA, WX, or FX, or page 23, “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 re-entry 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 24 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

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 form with a \$40 fee to the registrar's office for consideration. (See page 43 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

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

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

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 38 and 128) and the Aviation Training Institute calendars (pages 39 and 129).

FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT

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 a person 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 inter-

est 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 listing, e-mail 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

About 90 percent of Vaughn College students who are eligible to return for a particular semester do so. The retention rate for first-year students is 92 percent.

CERTIFICATE PROGRAMS

CERTIFICATION REQUIREMENTS

Maintenance Certificate

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 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.

cation Preparation—powerplant course. Students receiving 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 the semester, seminar and examination fees. Refer to “Certification Fees” on page 21.

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.

FCC License

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

Students enrolled in the aircraft operations degree program 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 signoff to take the FAA written examinations for the appropriate FAA certificate or rating sought.

46 Special Students

Students who have the FAA airman authorization rating/certificate can enroll in AA02 Certification Preparation—airframe course and/or PP02 Certifi-

ONLINE MANAGEMENT CERTIFICATE PROGRAMS

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

AIRLINE MANAGEMENT CERTIFICATE PROGRAM

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.

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.

middle- and upper-management positions. They enable busy, career-minded people to further their education and knowledge anywhere, at anytime, to fit into a busy, professional life.

AIRPORT MANAGEMENT CERTIFICATE PROGRAM

Three-course sequence – 9 credits

APM241 – Airport Administration – 3 credits

This course focuses on developing the skills and understanding of managing a commercial airport of any size. The content of the course is aimed at the practical application of airport manager skills. Relations with tenants, public officials and patrons will be emphasized.

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 associate and baccalaureate degree 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. In general, the core should instill in students critical-thinking skills, values appropriate to an educated person, the ability to communicate, and it should provide context for advanced learning.

Arts and Sciences Core Curriculum for Bachelor Degree Students

Seminars	2
FYE101 Freshman Year Experience	1
CD101 Career Development Seminar	0
ILT101 Information Literacy	1

Liberal Arts Core 21

ENG110 English I	3
ENG120 English II	3
ENG210 World Literature	3
ENG220 American Literature	3
ENG290 Public Speaking	3
HIS141 Global Civilization	3
POL254 American Government	3

Math and Sciences Core 16

MAT115 Pre-calculus	4
MAT120 Calculus I	4
PHY120 College Physics I	4
PHY220 College Physics II	4

Total 39

Core Curriculum for Associate Degree Students

Seminars	2
FYE101 Freshman Year Experience	1
CD101 Career Development Seminar	0
ILT101 Information Literacy	1

Liberal Arts Core 9

ENG110 English I	3
ENG120 English II	3
HIS141 Global Civilization	3

Math and Sciences Core 12

MAT115 Pre-calculus	4
MAT120 Calculus I	4
PHY120 College Physics I	4

Total 23

Some associate degree programs, but not all, may require a liberal arts or math/science elective.

LEARNING OUTCOMES

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 their students.

GENERAL LEARNING OUTCOMES

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

Graduates will have the ability to:

- a) Conduct experiments and analyze and interpret the data.
- b) Use computer applications necessary to a given problem.
- c) Have learned the need for professional and ethical responsibility.
- d) Apply knowledge of mathematics and science to a wide variety of problems.
- e) Communicate effectively through oral presentations, writing and graphic communications.
- f) Use computational tools to develop and analyze data.
- g) Have a commitment to lifelong learning and continuous improvement.

STUDENT LEARNING OUTCOMES IN THE ARTS AND SCIENCES FOR ASSOCIATE STUDENTS

Graduates will have the ability to:

- a) Conduct experiments and analyze and interpret the data.
- b) Use computer applications necessary to industrial needs.
- c) Have learned the need for professional and ethical responsibility.
- d) Apply knowledge of mathematics and science to a wide variety of industrial problems.
- e) Communicate effectively through oral presentations, writing and graphic communications.
- f) Use computational tools to develop and analyze data.
- g) Have a commitment to lifelong learning and continuous improvement.

AERONAUTICAL ENGINEERING TECHNOLOGY ASSOCIATE IN APPLIED SCIENCE (AAS) DEGREE

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 towards 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 Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, Maryland 21202-4012, telephone 410.347.7700.

PROGRAM OBJECTIVES

1. Graduates will possess a strong foundation and knowledge in mathematics, basic science and fundamentals of aeronautical engineering technology.
2. Graduates will be proficient in analytical skills and modern tools used in the aeronautical engineering technology fields.
3. Graduates will have mastery in communication and teamwork skills to work within and leading multidisciplinary teams.
4. Graduates will conduct themselves in a socially responsible manner and adapt to local and global changes with the understanding of the need for continuous improvement and lifelong learning.

PROGRAM OUTCOMES

- a) Graduates of the aeronautical engineering technology will learn to apply knowledge of mathematics, science and engineering technology principles to analysis and design.
- b) Graduates will learn to design and conduct experiments and to analyze and interpret data through the use of computer applications current to industry.
- c) Graduates, through group projects and oral presentations, will gain the broad education necessary to function in a multidisciplinary team.
- d) Graduates will learn to identify, formulate and solve problems related to engineering systems.
- e) Graduates will understand professional and ethical responsibility as they apply to engineering analysis and design.
- f) Graduates will be able to communicate effectively through oral presentations, writing and graphic communication.
- g) Graduates, through group projects and presentations, will gain the broad education necessary to understand the impact of engineering solutions in a global and societal context.
- h) Graduates will recognize the need for professional currency in their chosen profession and the need for lifelong learning.
- i) Graduates will have knowledge of contemporary issues both local and global and the impact of technology on society.
- j) Graduates will learn to use the experimental, analytical, statistical and computational tools to evaluate problems related to engineering design.
- k) The aeronautical engineering graduates will demonstrate a commitment to quality, timeliness and continuous improvement.

AAS Aeronautical Engineering Technology

		Lecture Credits	Lab Credits
Seminars			
FYE101	Freshman Year Experience	1	0
ILT101	Information Literacy	1	0
CD101	Career Development Seminar	0	0
	Total Credits	2	0
Liberal Arts Courses			
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
	Total Credits	15	0
Math and Sciences Courses			
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
	Total Credits	17	2
Aeronautical Engineering Courses			
CDE117	Engineering Graphics with Computer-aided Design/Solid Edge	2	0
CDE117 Lab	Engineering Graphics Lab	0	1
CDE385	Introduction CATIA I	2	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
	Total Credits	26	5
Total Lecture and Lab Credits		65	

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 program 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

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

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 towards 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
Seminars			
FYE101	Freshman Year Experience	1	0
ILT101	Information Literacy	1	0
CD101	Career Development Seminar	0	0
	Total Credits	2	0
Liberal Arts Courses			
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
	Total Credits	15	0
Math and Sciences Courses			
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
	Total Credits	17	2
Animation and Digital Technologies Courses			
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
	Total Credits	23	10

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 & Character Design
DSG264	Audio Editing for Video & Multimedia
DSG269	Advanced Maya Modeling & Animation
DSG270	Character Animation for Video Games
DSG272	ZBrush Digital Sculpting

Total Lecture and Lab Credits

69

ELECTRONIC ENGINEERING TECHNOLOGY — AVIONICS ASSOCIATE IN APPLIED SCIENCE (AAS) DEGREE

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.

In addition, this program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, Maryland 21202-4012, telephone 410.347.7700.

PROGRAM OBJECTIVES

- 1) To provide students with a strong foundation in mathematics, basic sciences, social sciences and the fundamentals of electronics engineering technology as well as with practical knowledge.
- 2) To prepare students appropriately with the analysis, testing and troubleshooting techniques and skills of the electronics components, circuits and systems.
- 3) To prepare students to work independently and cooperatively in teams.
- 4) To prepare students with the ability to communicate effectively in writing and orally to groups and individually.
- 5) To prepare students with the ability to recog-

nize the need for and possess the ability to pursue lifelong learning.

- 6) To provide the necessary foundation and skills to prepare graduates for entry-level employment in the field of avionics and electronics industries.
- 7) To provide students with the educational background that affords them an opportunity to continue to pursue a baccalaureate-level engineering technology program in avionics.
- 8) To provide an atmosphere that cultivates the spirit of professionalism, honesty, ethics and respect for diversity among the students to serve the industrial community and society at their utmost.
- 9) To instill the culture of commitment to quality and continuous improvement.
- 10) To prepare the students for the Federal Communications Commission (FCC) General Radio Telephone License examination whenever needed.

PROGRAM OUTCOMES

The program outcomes for the AAS in electronics engineering technology-avionics concentration are as follows:

- a) Graduates of the aeronautical engineering technology will learn to apply the knowledge of mathematics, science and engineering technology to analyze and solve avionics problems.
- b) Graduates will learn to design and conduct experiments and to analyze and interpret data through the use of computer applications current to industry.
- c) Graduates, through group projects and oral presentations, will gain the broad education necessary to function in a multidisciplinary team.
- d) Graduates will learn to identify, formulate and solve problems related to engineering systems.
- e) Graduates will understand professional and ethical responsibility as they apply to engineering analysis and design.
- f) Graduates will be able to communicate effectively through oral presentations, writing and graphic communication.
- g) Graduates, through group projects and presentations, will gain the broad education necessary

- to understand the impact of engineering solutions in a global and societal context.
- h) Graduates will recognize the need for professional currency in their chosen profession and the need for lifelong learning.
- i) Graduates will have knowledge of contemporary issues, both local and global, and the impact of technology on society.
- j) Graduates will learn to use the experimental, analytical, statistical and computational tools to evaluate problems related to engineering design.
- k) The electronic engineering graduates will demonstrate a commitment to quality, timeliness and continuous improvement.

AAS ELECTRONIC ENGINEERING TECHNOLOGY - AVIONICS

		Lecture Credits	Lab Credits
Seminars			
FYE101	Freshman Year Experience	1	0
ILT101	Information Literacy	1	0
CD101	Career Development Seminar	0	0
	Total Credits	2	0
Liberal Arts and Sciences Courses			
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
	Total Credits	15	0
Math and Sciences Courses			
MAT115	Pre-calculus	4	0
MAT120	Calculus I	4	0
PHY120	College Physics I	3	1
PHY220	College Physics II	3	1
	Total Credits	14	2
Electronic Engineering Technology Courses			
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	2	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
	Total Credits	22	12

Total Lecture and Lab Credits

65

ELECTRONIC ENGINEERING TECHNOLOGY — AVIONICS CONCENTRATION BACHELOR OF SCIENCE (BS) DEGREE

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 DP409 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) Radio and Telephone License examination. Graduates must pass a qualifying exam for the FCC license to graduate.

In addition, this program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, Maryland 21202-4012, telephone 410.347.7700.

engineering technology.

- 2) To prepare students with computational skills, analytical skills and troubleshooting techniques required for positions of technical responsibility in a modern multidisciplinary system environment that emphasizes problem solving.
- 3) To provide in-depth knowledge of principles and operations of electronics systems through hands-on experimentation, with an understanding of rapid advancement in modern technology and importance of lifelong learning.
- 4) To provide students with the proficiency in sophisticated avionics systems used for communication, navigation, surveillance and flight control in modern aircraft wherever such proficiency is needed.
- 5) To assist students in developing communication skills.
- 6) To provide students with the in-depth application of theory and physical sciences to advanced systems found in today's modern electronics engineering systems.
- 7) To provide students with the knowledge of systems engineering process, including reliability, maintainability and integrated logistics support.
- 8) To provide students with educational background that affords students many career opportunities in the field of engineering, technology, general electronics system, avionics systems construction and product design.
- 9) To provide students with the educational background which affords them the opportunity to pursue graduate studies in the field of engineering technology, engineering or any related disciplines.
- 10) To provide an atmosphere that cultivates the spirit of professionalism, honesty, ethics and respect for diversity among the students to serve the industrial community and society at their utmost.
- 11) To instill the culture of commitment to quality and continuous improvement.
- 12) To prepare the students for the Federal Communications Commission (FCC) General Radio Telephone License examination.

- 1) To provide students with a strong foundation in mathematics, basic sciences, social sciences and the fundamentals of electronics

PROGRAM OUTCOMES

The program outcomes for the BS in electronics engineering technology-avionics concentration are as follows.

- a) Graduates will be able to apply the knowledge of mathematics, science and engineering technology to analyze and solve avionics problems.
- b) Graduates will demonstrate an appropriate mastery of current knowledge, techniques, skills and modern tools used in the avionics industry.
- c) Graduates will conduct, analyze and interpret experiments and apply experimental results to improve avionics systems and components.
- d) Graduates will be able to apply creativity in the design of avionics systems, components and processes.
- e) Graduates will be able to identify, analyze and solve technical problems in avionics.
- f) Graduates will be able to function on multidisciplinary teams.
- g) Graduates will be able to communicate effectively engineering ideas and results both orally and in writing.
- h) Graduates will be able to understand professional, ethical and social responsibilities.
- i) Graduates will be able to recognize the need for and possess the ability to pursue lifelong learning.
- j) Graduates will have a respect for diversity and knowledge of contemporary, professional, societal and global issues.
- k) Graduates will be able to demonstrate a commitment to quality, timeliness and continuous improvement.

BS ELECTRONIC ENGINEERING TECHNOLOGY — AVIONICS CURRICULUM

		Lecture Credits	Lab Credits
Seminars			
FYE101	Freshman Year Experience	1	0
ILT101	Information Literacy	1	0
CD101	Career Development Seminar	0	0
	Total Credits	2	0
Liberal Arts Courses			
ECO255	Economics	3	0
ENG110	English I	3	0
ENG120	English II	3	0
ENG220	American Literature	3	0
ENG240	Technical Writing	3	0
ENG290	Public Speaking	3	0
HIS141	Global Civilization	3	0
HUM255	Technology and Culture	3	0
HUM472	Practical Ethics	3	0
POL254	American Government	3	0
	Total Credits	30	0
Math and Sciences Courses			
MAT115	Pre-calculus	4	0
MAT120	Calculus I	4	0
MAT220	Calculus II	3	0
MAT356	Probability and Physics	3	0
MAT445	Differential Equations	3	0
PHY120	College Physics I	3	1
PHY220	College Physics II	3	1
PHY220	Math/Science Elective	3	0
	Total Credits	26	2
Electronic Engineering Technology Courses			
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
Electronic Engineering Technology Courses			
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	Long-Range Navigation Systems	2	0
AVT351 Lab	Long-Range 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
DP409	Degree Project	3	0
CDE117	Engineering Graphics with Computer-aided Design/Solid Edge	2	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 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
	Total Credits	50	18

Total Lecture and Lab Credits**128**

ELECTRONIC ENGINEERING TECHNOLOGY — GENERAL ELECTRONICS BACHELOR OF SCIENCE (BS) DEGREE

The 21st century will extend the era of electronics. The majority of all products, systems and services are increasingly involved with the electronic aspect.

This ever-growing demand for application of electronics needs more educated individuals to conceive, design, develop and produce new answers to modern technical problems. The BS program in electronic engineering technology is designed to cater to the needs of electronics professionals with varying roles from technician to technologist in the various electronics and related industries.

This program contains a wide range of technology courses from the basic to advanced level, combined with liberal arts and basic science courses, technical electives and advanced courses in applied mathematics.

Graduates are employed in such diverse positions as electronic technicians, technical sales representatives and technical writers.

In addition, this program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, Maryland 21202-4012, telephone 410.347.7700.

PROGRAM OBJECTIVES

Program educational objectives for the BS in electronic engineering technology were developed to satisfy program outcomes that describe what students are expected to know and be able to do by the time of graduation. These program educational objectives intend to produce graduates who will:

- 1) Possess a strong foundation and knowledge in mathematics, basic science, social sciences and fundamentals of electronics engineering technology.
- 2) Demonstrate proficiency in analytical skills and modern tools with application to real-world electronic engineering technology problems.
- 3) Engage in professional development and lifelong learning by participating in professional societies, internship programs and presenting and publishing papers at technical conferences.
- 4) Demonstrate mastery in communication and teamwork skills to work within and lead multidisciplinary teams.

- 5) Perform effectively and conduct themselves ethically in a multicultural global society.

PROGRAM OUTCOMES

The program outcomes have been established to assess students' learning outcomes in the BS in electronic engineering technology program.

- a) Graduates will demonstrate an appropriate mastery of the knowledge, techniques, skills and modern tools used in the electronics engineering industry.
- b) Graduates will be able to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
- c) Graduates will be able to conduct, analyze and interpret experiments and apply experimental results to improve electronics systems and components.
- d) Graduates will be able to apply creativity in the design of electronics systems, components and processes.
- e) Graduates will be able to function on multidisciplinary teams.
- f) Graduates will be able to identify, analyze and solve technical problems.
- g) Graduates will be able to communicate effectively engineering technology ideas and results both orally and in writing.
- h) Graduates will recognize the need for and possess the ability to pursue lifelong learning.
- i) Graduates will understand professional, ethical and social responsibilities.
- j) Graduates will have a respect for diversity and knowledge of contemporary, professional, societal and global issues.
- k) Graduates will demonstrate a commitment to quality, timeliness and continuous improvement.

A process with a detailed timetable for collecting data, evaluating results and introducing an action plan for improvement has been developed based on the student learning outcomes assessment and curriculum continuous improvement to assess and measure the effectiveness of program objectives in achieving and delivering program outcomes.

BS ELECTRONIC ENGINEERING TECHNOLOGY — GENERAL ELECTRONICS CURRICULUM

		Lecture Credits	Lab Credits
Seminars			
FYE101	Freshman Year Experience	1	0
ILT101	Information Literacy	1	0
CD101	Career Development Seminar	0	0
	Total Credits	2	0
Liberal Arts Courses			
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
	Total Credits	30	0
Math and Sciences Courses			
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
PHY335	College Physics III/Optics	3	0
	Math/Science Electives	6	0
	Total Credits	29	2
Electronic Engineering Technology Courses			
CDE117	Engineering Graphics with Computer-aided Design/Solid Edge	2	0
CDE117 Lab	Engineering Graphics Lab	0	1
CDE385	CATIA Fundamentals	2	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
DP409	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
EET240	Pulse Circuits	2	0
EET240 Lab	Pulse Circuits Lab	0	1
EET326	Microprocessors	2	0
EET326 Lab	Microprocessors Lab	0	1

BS ELECTRONIC ENGINEERING TECHNOLOGY — GENERAL ELECTRONICS CURRICULUM

		Lecture Credits	Lab Credits
Electronic Engineering Technology Courses			
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
OPC445	Principles of Communications Networks	3	0
	Technical Elective	2	1
	Total Credits	47	15

Total Lecture and Lab Credits	125
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MECHANICAL ENGINEERING TECHNOLOGY — AERONAUTICAL OR COMPUTER-AIDED DESIGN BACHELOR OF SCIENCE (BS) DEGREE

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, and 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 Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, Maryland 21202-4012, telephone 410.347.7700.

PROGRAM OBJECTIVES

- 1) Graduates will possess a strong foundation and knowledge in mathematics, basic science and the fundamentals of aeronautical and mechanical engineering technology.
- 2) Graduates will be proficient in analytical skills and modern tools used in the aeronautical and mechanical engineering technology fields.
- 3) Graduates will develop mechanical engineering technology components and systems utilizing

experimental and analytical tools.

- 4) Graduates will have mastery in communication and teamwork skills to work within and leading multidisciplinary teams.
- 5) Graduates will conduct themselves in a socially responsible manner and adapt to local and global changes with the understanding of the need for continuous improvement and lifelong learning.

PROGRAM OUTCOMES

The mechanical engineering technology program learning outcomes are defined as follows:

- a) Graduates of mechanical engineering technology will learn to apply knowledge of mathematics, science and engineering technology principles to analysis and design.
- b) Graduates will learn to design and conduct experiments and to analyze and interpret data with the use of computer applications current to industry.
- c) Graduates, through group projects and oral presentations, will gain the broad education necessary to function on a multidisciplinary team.
- d) Graduates will learn to identify, formulate and solve problems related to engineering systems.
- e) Graduates will understand professional and ethical responsibility as they apply to engineering analysis and design.
- f) Graduates will be able to communicate effectively through oral presentation, writing and graphic communication.
- g) Graduates will gain the broad education necessary to understand the impact of engineering solutions in a global and societal context through group projects and presentations.
- h) Graduates will recognize the need for professional currency in their chosen profession and the need for lifelong learning.
- i) Graduates will have knowledge of contemporary issues, both local and global, and the impact of technology on society.
- j) Graduates will learn to use the experimental, analytical, statistical and computational tools to evaluate problems related to engineering design.
- k) Graduates will demonstrate a commitment to quality, timeliness and continuous improvement.

**MECHANICAL ENGINEERING TECHNOLOGY — (BS)
AERONAUTICAL OR COMPUTER-AIDED DESIGN CURRICULUM**

		Lecture Credits	Lab Credits
Seminars			
FYE101	Freshman Year Experience	1	0
ILT101	Information Literacy	1	0
CD101	Career Development Seminar	0	0
	Total Credits	2	0
Arts and Science Courses			
ENG110	English I	3	0
ENG120	English II	3	0
ENG220	American Literature	3	0
ENG240	Technical Writing	3	0
ENG290	Public Speaking	3	0
HIS141	Global Civilization	3	0
HUM255	Technology and Culture	3	0
POL254	American Government	3	0
	Liberal Arts Elective	3	0
	Total Credits	27	0
Math and Sciences Courses			
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
	Total Credits	20	2
Mechanical Engineering Technology Courses			
CDE117	Engineering Graphics with Computer-aided Design/Solid Edge	2	0
CDE117 Lab	Engineering Graphics Lab	0	1
CDE385	Intro to CATIA	2	0
CDE385 Lab	Intro to CATIA Lab	0	1
CDE480	Solid Edge II	1	0
CDE480 Lab	Solid Edge 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
EGR375	Thermo-Fluid Laboratory	0	1
EGR440	Heat Transfer	3	0
EGR460	Engineering Economics	3	0
EGR489	Patran Nastran Structural Analysis	2	0
EGR489	Patran Nastran Structural Analysis Lab	0	1

MECHANICAL ENGINEERING TECHNOLOGY — (BS) AERONAUTICAL OR COMPUTER-AIDED DESIGN CURRICULUM

ELE117	AC/DC Circuits	2	1
DP230	Mechanical Testing and Evaluation Lab	0	1
DP409	Degree Project	3	0
Total Credits		55	8
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
Total credits		13	1
		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
Total Credits		7	4

* 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	
CDE490	Composite Manufacturing Process	
EGR380	Engineering Project Management	
EGR450	Aircraft Configuration Design	
Total Credits Aeronautical Option		128

CAD Option Technical Elective (choose two)

CDE375	Computer Graphics and Digital Technology for Engineers	
CDE488	CATIA Finite Element Analysis Structural Analysis	
CDE490	Composite Manufacturing Process	
EGR380	Engineering Project Management	
Total Credits CAD Option		125

ENGINEERING — MECHATRONICS BACHELOR OF SCIENCE (BS) DEGREE

The bachelor of science in engineering focuses on mechatronics, which is the study of the synergistic use of mechanical, electrical and computer engineering. Mechatronics 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 they are ready for immediate employment in industry or graduate study.

PROGRAM OBJECTIVES

Program educational objectives for the BS in mechatronics engineering were developed to satisfy program outcomes that describe what students are expected to know and be able to do by the time of graduation. These program educational objectives intend to produce graduates who:

- 1) Possess a strong foundation and knowledge in mathematics, basic science and fundamentals of engineering.
- 2) Demonstrate proficiency in analytical skills and modern tools with application to real-world engineering problems.
- 3) Engage in professional development and lifelong learning by participating in technical conferences.
- 4) Demonstrate mastery in communication and teamwork skills to work within and lead multidisciplinary teams.
- 5) Perform effectively and conduct themselves ethically in a multicultural, global society.

STUDENT LEARNING OUTCOMES

The BS in mechatronic 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.

- 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 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 processes.
- d) Graduates will demonstrate an ability to function on multidisciplinary teams.
- e) Graduates will demonstrate an ability to identify, formulate and solve mechatronics engineering problems.
- f) Graduates will demonstrate an understanding of professional and ethical responsibility.
- g) Graduates will demonstrate an ability to communicate effectively 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 and continuous improvement and an ability to engage in lifelong 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.

ENGINEERING — (BS) MECHATRONICS CURRICULUM

		Lecture Credits	Lab Credits
Seminars			
FYE101	Freshman Year Experience	1	0
ILT101	Information Literacy	1	0
CD101	Career Development Seminar	0	0
	Total Credits	2	0
Liberal Arts Courses			
ENG110	English I	3	0
ENG120	English II	3	0
ENG220	American Literature	3	0
ENG240	Technical Writing	3	0
ENG290	Public Speaking	3	0
HIS141	Global Civilization	3	0
POL254	American Government	3	0
	Total Credits	21	0
Math and Sciences Courses			
CHE230	Chemistry	3	0
CSC215	MATLAB	3	0
CSC316	C++ Java Programming	3	0
MAT125	Calculus I for Engineers	3	0
MAT225	Calculus II for Engineers	3	0
MAT325	Engineering Mathematics	3	0
MAT356	Probability and Statistics	3	0
PHY125	Engineering Physics	3	1
PHY225	Physics II for Engineers	3	1
PHY335	College Physics III	3	0
	Math Elective	3	0
	Total Credits	33	2
Mechatronic Engineering Courses			
CDE117	Engineering Graphics with Computer-aided Design/Solid Edge	2	1
CDE385	Introduction to CATIA I	2	1
DP409	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

ENGINEERING — (BS) MECHATRONICS CURRICULUM

	Lecture Credits	Lab Credits
MEE235 Material Science and Failure Analysis	3	0
MEE340 (or EGR340) Computational Methods in Engineering	3	0
MEE345 Fluid Mechanics	3	0
MEE355 Reliability Method in Structural Mechanics	3	0
MEE365 Elements of Machine Design and Vibration Analysis	4	0
MEE370 (or EGR370) Finite Element Analysis	3	0
Technical Elective	2	1
Total Credits	63	15

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.

CDE386	CATIA for Wiring and Harnessing	2	1
EGR489	Patran-Nastran FEA Structural Analysis	2	1

ENGINEERING AND TECHNOLOGY DEPARTMENT ADVISORY COUNCIL

THOMAS BAIRD
Rockwell Collins

RAJDEEP SINGH
Sikorsky Aircraft

DR. ABDEL BELKHARRAZ
LaGuardia Community College

JOSE ULLOA
RCM Technologies

DR. HENDRICK DELCHAM
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Sikorsky Aircraft

JOHN PAVON '02
Pavon Manufacturing Group

DIOGENES RAMOS
Federal Aviation Administration (FAA)

OLIVER SCHEEL
U.S. Didactic

AIRCRAFT OPERATIONS ASSOCIATE IN APPLIED SCIENCE (AAS) DEGREE

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. 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 practical flight training.

The technical content of this program is based on standards required by the FAA. Fully qualified faculty will carry out flight simulator training, pilot ground school and flight laboratories, for which college credit is granted.

It should be noted that college credit will not be given for flight training hours. In order to advance through the program, students must obtain a minimum of a "C" in FLT110, FLT120, FLT221 and FLT330. A signoff 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. They will require the passing of specific FAA written exams prior to the start of the course. There will be no exceptions.

- a) Apply the knowledge, skills, and techniques of the aviation operations program to analyze and solve issues related to the aviation environment.
- b) Function individually and collaboratively in teams.
- c) Understand professional, ethical and social responsibilities.
- d) Understand mathematical and scientific concepts in problem solving.
- e) Communicate effectively both orally and in writing.
- f) Understand and incorporate new technologies as well as recurring training requirements as they strive for continuous improvement.
- g) Acquire a working knowledge of the national airspace system.
- h) Gain skill sets required to further academic pursuits.

PROGRAM OBJECTIVES

Graduates will:

Have the foundation necessary to pursue a bachelor's degree in aircraft operations. In addition, they will acquire the skills to obtain entry-level positions in the aircraft operations field.

STUDENT LEARNING OUTCOMES

The aircraft operations program learning outcomes are as follows. Graduates will be able to:

AIRCRAFT OPERATIONS (AAS) CURRICULUM

		Lecture Credits	Lab Credits
Seminars			
FYE101	Freshman Year Experience	1	0
ILT101	Information Literacy	1	0
CD101	Career Development Seminar	0	0
	Total Credits	2	0
Arts and Sciences Courses			
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
	Total Credits	15	0
Math and Sciences Courses			
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
	Total Credits	17	2
Aircraft Operations Courses			
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
	Total Credits	28	0
*Or ATC 220 Aviation Weather for ATC-CTI program			
Total Lecture and Lab Credits			64

AIRCRAFT OPERATIONS BACHELOR OF SCIENCE (BS) DEGREE

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 program.

The professional pilot's career is further advanced for those in the BS program as it also 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.

A Class II medical certificate is required for all flight instructors. 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.

It should be noted that college credit will not be given for flight training hours. 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 the "sign-off." 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.

PROGRAM OBJECTIVES

Graduates will:

- 1) Have completed the necessary coursework to pursue a master's degree in aeronautical studies. In addition, they will acquire the skills to obtain entry to mid-level positions in the aircraft operations field.

STUDENT LEARNING OUTCOMES

The aircraft operations program learning outcomes are as follows. Graduates will be able to:

- a) Apply the knowledge, skills and techniques of an enhanced aviation operations program to analyze and solve issues related to the aviation environment.
- b) Function individually and collaboratively in teams.
- c) Apply knowledge of mathematics, science and engineering skills in problem solving.
- d) Incorporate professional, ethical and social responsibilities.
- e) Communicate effectively both orally and in writing.
- f) Understand and incorporate new technologies as well as recurring training requirements as they strive for continuous improvement.
- g) Acquire a working knowledge of the national airspace system.

AIRCRAFT OPERATIONS (BS) CURRICULUM

		Lecture Credits	Lab Credits
Seminars			
FYE101	Freshman Year Experience	1	0
ILT101	Information Literacy	1	0
CD101	Career Development Seminar	0	0
	Total Credits	2	0
Liberal Arts Courses			
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
POL254	American Government	3	0
	Liberal Arts Electives	9	0
	Total Credits	33	0
Math and Sciences Courses			
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
	Math/Science Electives	6	0
	Total Credits	23	2
Aircraft Operations Courses			
ECO255	Principles of Economics	3	0
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	3	0
FLT241	Aviation Safety	3	0
FLT330	Advanced Aeronautics	3	0
FLT360	Multi-Engine Aero Ground	2	1
FLT470	Certified Flight Instructor Aeronautics	3	0
FLT471	Certified Flight Instructor Fundamentals of Teaching	3	0
	Flight Electives	6	0
	Management Elective	6	0
	Technical Electives/Internship	18	0
	Total Credits	63	1

*Or ATC220 Aviation Weather for Students in the AT-CTI program

Total Lecture and Lab Credits

124

AVIATION MAINTENANCE ASSOCIATE IN APPLIED SCIENCE (AAS) DEGREE

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 (ATC-CTI). See page 79 for details.

- d) Understand and incorporate new technologies as well as recurring training requirements as they strive for continuous improvement.
- e) Understand mathematical and scientific concepts in problem solving.
- f) Communicate effectively both orally and in writing.
- g) Acquire skills required to demonstrate a working knowledge of FAA requirements.
- h) Gain skill sets required to further academic pursuits.

PROGRAM OBJECTIVES

Graduates will have:

- 1) Completed the necessary coursework to pursue a bachelor of science degree in aeronautical studies. In addition, they will acquire the skills to obtain entry-level positions in aviation maintenance and related fields.

STUDENT LEARNING OUTCOMES

The aviation maintenance program learning outcomes are as follows. Graduates will be able to:

- a) Apply the knowledge, skills, and techniques of the aviation maintenance program to analyze and solve issues specifically in the maintenance environment.
- b) Function individually and collaboratively in teams.
- c) Understand professional, ethical and social responsibilities.

AVIATION MAINTENANCE (AAS) CURRICULUM

		Lecture Credits	Lab Credits
Seminars			
FYE101	Freshman Year Experience	1	0
ILT101	Information Literacy	1	0
CD101	Career Development Seminar	0	0
	Total Credits	2	0
Liberal Arts Courses			
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
	Total Credits	18	0
Math and Sciences Courses			
MAT115	Pre-calculus	4	0
MAT120	Calculus I	4	0
PHY120	Physics I	3	1
PHY220	Physics II	3	1
	Total Credits	14	2
Technical Elective		3	0
Airframe and Powerpoint Certificates		30	0
Total Lecture and Lab Credits		69	

AVIATION MAINTENANCE BACHELOR OF SCIENCE (BS) DEGREE

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, abilities sought by managers of 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 advanced aircraft systems and avionics technology; 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 (ATC-CTI). See page 79 for details.

PROGRAM OBJECTIVES

Graduates will:

Have completed the necessary coursework to pursue a master's degree in aeronautical studies. In addition, they will acquire the skills to obtain entry to mid-level positions in aviation maintenance and related fields.

STUDENT LEARNING OUTCOMES

The aviation maintenance program learning outcomes are as follows. Graduates will be able to:

- a) Apply the knowledge, skills and techniques of an enhanced aviation maintenance program to analyze and solve issues, specifically in the maintenance environment.
- b) Function individually and collaboratively in teams.
- c) Incorporate ethical and social responsibilities.
- d) Communicate effectively both orally and in writing.
- e) Understand mathematical and scientific concepts in problem solving.
- f) Have knowledge of aviation systems and approaches and the integration of these technologies.
- g) Understand and incorporate new technologies and recurring training requirements following a continuous-improvement approach.
- h) Acquire skills required to demonstrate a working knowledge of FAA requirements.

- a) Apply the knowledge, skills and techniques of

AVIATION MAINTENANCE (BS) CURRICULUM

		Lecture Credits	Lab Credits
Seminars			
FYE101	Freshman Year Experience	1	0
ILT101	Information Literacy	1	0
CD101	Career Development Seminar	0	0
	Total Credits	2	0
Liberal Arts Courses			
CSC111	Computer Science I - Visual Basic	3	0
ECO255	Principles of Economics	3	0
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
HUM255	Technology and Culture	3	0
POL254	American Government	3	0
	Total Credits	33	0
Math and Sciences Courses			
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
PHY335	Physics III	3	0
	Total Credits	20	2
Aviation Maintenance Courses			
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	Rotorcraft 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
	2 Math/Science Electives	6	0
	Technical Elective	3	0
DP407	Degree Project	0	0
	Total Credits	36	4
Airframe and Powerplant Certificates		30	0
Total Lecture and Lab Credits		127	

AVIATION MAINTENANCE MANAGEMENT BACHELOR OF SCIENCE (BS) DEGREE

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; 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 also eligible to participate in the Air Traffic Control Collegiate Training Initiative (ATC-CTI). See page 79 for details.

PROGRAM OBJECTIVES

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

The aviation maintenance management program learning outcomes are as follows. Graduates will be able to:

- a) Apply the knowledge, skills and techniques of an enhanced aviation maintenance program to analyze and solve issues specifically in the maintenance environment.
- b) Function individually and collaboratively in teams.
- c) Incorporate ethical and social responsibilities.
- d) Communicate effectively both orally and in writing.
- e) Understand mathematical and scientific concepts in problem solving.
- f) Have knowledge of systems and the integration of these technologies.
- g) Understand and incorporate new technologies as well as recurring training requirements as they strive for continuous improvement.
- h) Acquire skills required to demonstrate a working knowledge of Federal Aviation Administration requirements.

AVIATION MAINTENANCE MANAGEMENT (BS) CURRICULUM

		Lecture Credits	Lab Credits
Seminars			
FYE101	Freshman Year Experience	1	0
ILT101	Information Literacy	1	0
CD101	Career Development Seminar	0	0
	Total Credits	2	0
Liberal Arts Courses			
CSC111	Computer Science I - Visual Basic	3	0
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	French I or Spanish I	3	0
FRE161/SPA161	French II or Spanish II	3	0
HIS141	Global Civilization	3	0
HUM251	International Studies	3	0
POL254	American Government	3	0
	Total Credits	36	0
Math and Sciences Courses			
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
	Total Credits	17	2
Aviation Maintenance Management Courses			
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
	Total Credits	36	0
Airframe and Powerpoint Component		30	0
78	Total Lecture and Lab Credits	123	

AIR TRAFFIC CONTROL-COLLEGIATE TRAINING INITIATIVE

The Air Traffic Control-Collegiate Training Initiative (AT-CTI) is a partnership between the Federal Aviation Administration (FAA) and Vaughn College designed to provide the academic preparation for students interested in air traffic control careers.

As of 2011, the College is one of 36 institutions in the country selected by the FAA to participate in this program. The FAA established CTI schools as one of its requirements for a career in air traffic control.

We recommend that prospective students do not attempt to enter a degree program unless completion of the program can be attained by the age of 29, as you must be employed by the FAA by the age of 31.

The AT-CTI 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. Students in the following programs are eligible to participate and will complete a series of four courses:

- AAS in Aircraft Operations
- BS in Aircraft Operations
- 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 (avionics option)
- BS in Electronic Engineering Technology (avionics option)

AT-CTI students will be required to take an FAA authorized pre-employment (aptitude) exam. Recently, the FAA implemented a new exam called the Air Traffic Selection and Training test (AT-SAT). It evaluates the skill sets identified as contributing to successful air traffic control careers and includes applied mathematics, geometric visualization, memory, basic air traffic control skills and pattern recognition. All students must pass this aptitude exam to be employed as controllers, and each student receives two opportunities to pass. It is a timed exam administered by the FAA. Vaughn College has no control over the date, time or location of the exam, nor over its results.

To be recommended to the FAA for hiring,

Vaughn College requires students to complete all degree requirements, including three air traffic control courses with a grade of “C” or better in each class, and pass a comprehensive screening exam during their last semester. Students entering Vaughn after September 2008 are required to attend a 40-hour capstone course after graduating. Students are responsible for:

- Informing the aviation department chair when they have graduated so that their names can be considered for recommendation to the FAA.
- Ensuring that all graduation requirements are complete.
- Filling out necessary forms (see chair), including a confidential student information form, GPA waiver form, a citizenship form and a recommendation consent form.

We suggest that you sign up for the FAA’s (AT-SAT) test as soon as you are eligible. Once the registration deadline has passed, Vaughn has no ability to assist students with signing up for this test. Note that the FAA has a strict set of criteria for eligibility for hiring. To qualify, ATC-CTI program graduates must meet all legal and regulatory requirements to be hired, including, but not limited to, the following:

- Be recommended by Vaughn College.
- Achieve a qualifying score on the current FAA testing procedures.
- Meet entry-level air traffic control specialist (ATCS) medical standards.
- Pass a pre-employment drug test.
- Pass the background investigation for security and suitability.
- Have US citizenship.
- Be less than 31 years of age prior to initial appointment.
- Complete coursework, including all AT-CTI-specific courses.
- Be able to read, write, and understand the English language and speak it rapidly without accent or impediment of speech.
- Successfully complete the FAA interview process.

For more details, visit the section on our website at www.vaughn.edu/aviation_degrees.

AIRCRAFT DISPATCHER LICENSE TRAINING PROGRAM

Vaughn College offers a 12-credit comprehensive program for Federal Aviation Administration (FAA) Aircraft Dispatcher License Training.

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, the student will be permitted to earn 12 Vaughn College credits toward a bachelor's degree in general management, airport management or aircraft operations. Students can earn six credits toward a bachelor's degree in airline management after satisfactory completion of the dispatch courses and 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 license 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) or contact Dominic Proscia, executive director of training, at domenic.proscia@vaughn.edu or 718.429.6600 ext. 139.

AIRPORT MANAGEMENT CONCENTRATION ASSOCIATE IN APPLIED SCIENCE (AAS) DEGREE

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.

- d) Function individually and on multidisciplinary teams.
- e) Communicate effectively orally and in writing.

PROGRAM OBJECTIVES

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 AAS in airport management program's learning outcomes are as follows. Graduates will be able to:

- a) Apply verbal and quantitative skills to address managerial issues.
- b) Demonstrate knowledge of basic principles of different functional areas of management.
- c) Demonstrate an appropriate mastery of current knowledge, issues and tools used in the airport industry.

AAS Airport Management Curriculum

		Lecture Credits	Lab Credits
Seminars			
FYE101	Freshman Year Experience	1	0
ILT101	Information Literacy	1	0
CD101	Career Development Seminar	0	0
	Total Credits	2	0
Arts and Sciences Courses			
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
HIS141	Global Civilization	3	0
POL254	American Government	3	0
	Total Credits	21	0
Math and Sciences Courses			
MAT115	Pre-calculus	4	0
MAT120	Calculus I	4	0
PHY120	Physics I	3	1
	Total Credits	11	1
Management and Aviation Courses			
AER101	Introduction to Aeronautics	3	0
APM241	Airport Administration	3	0
APM485	Airport Management	3	0
ATC200	Basic Air Traffic Control I	2	1
ATM452	Air Transport Regulations	3	0
FLT241	Aviation Safety	3	0
MGT110	Introduction to Management	3	0
MGT120	Principles of Accounting	3	0
MGT230	Financial Management	3	0
MGT470	Industry and Labor Relations	3	0
	Total Credits	29	1
Total Lecture and Lab Credits			65

AIRPORT MANAGEMENT BACHELOR OF SCIENCE (BS) DEGREE

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 first-hand the areas of airport planning, control of ground vehicles, communication systems, airport security, fire and rescue services and airport maintenance.

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 non-native speakers; therefore, no by-pass examinations will be allowed. 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 three 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.

This degree can be tailored to accommodate the requirements of the Air Traffic Control-Collegiate Training Initiative. For additional information, see page 79.

PROGRAM OBJECTIVES

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

The BS in airport management program's learning outcomes are as follows. Graduates will be able to:

- a) Apply verbal and quantitative skills to address managerial issues.
- b) Demonstrate knowledge of basic principles of different functional areas of management.
- c) Demonstrate an appropriate mastery of current knowledge, issues and tools used in the airport industry.
- d) Function individually and on multidisciplinary teams.
- e) Communicate effectively orally and in writing.
- f) Understand professional, ethical and social responsibilities.
- g) Recognize the need for and possess the ability to pursue lifelong learning.
- h) Have a respect for diversity and knowledge of contemporary professional, societal and global issues.
- i) Demonstrate a commitment to quality, timeliness and continuous improvement.

BS Airport Management Curriculum

		Lecture Credits	Lab Credits
Seminars			
FYE101	Freshman Year Experience	1	0
ILT101	Information Literacy	1	0
CD101	Career Development Seminar	0	0
	Total Credits	2	0
Liberal Arts Courses			
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
	Liberal Arts Elective	3	0
	Total Credits	36	0
Math and Sciences Courses			
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
	Math/Science Elective	3	0
	Total Credits	20	2
Additional Course			
CDE120	Engineering Graphics and Computer-aided Design	3	0
	Total Credits	3	0
Management and Aviation Courses			
AER101	Introduction to Aeronautics	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	1
ATC240	Basic Air Traffic Control II	2	1
ATM320	Aviation Law	3	0
ATM452	Air Transport Regulations	3	0
ECO255	Principles of Economics	3	0
FLT241	Aviation Safety	3	0
FLT384	Management of Environmental Issues	3	0
MGT110	Introduction to Management	3	0
MGT120	Principles of Accounting	3	0
MGT210	Organizational Behavior	3	0
MGT230	Financial Management	3	0
MGT360	Business Communications	3	0
MGT365	Public Relations	3	0
MGT371	Marketing Management	3	0
MGT403	Internship/Degree Project	3	0
MGT470	Industry and Labor Relations	3	0
	Management Elective	3	0
MGT480	Capstone Degree Project	3	0
	Total Credits	64	1

Total Lecture and Lab Credits

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AIRLINE MANAGEMENT BACHELOR OF SCIENCE (BS) DEGREE

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. Full-time students should be able to complete the requirements of the bachelor of science degree in four years.

Students interested in the Federal Aviation Administration's Air Traffic-Collegiate Training Initiative (AT-CTI) will need to take the two additional AT-CTI courses, ATC220 Weather; and ATC240 Air Traffic Control II; as well as the review course, ATC300 ATC Capstone Review to complete the requirements of that program. Aviation Weather can be used as a math/science elective. ATC300 must be completed after graduation.

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 non-native speakers; therefore, no by-pass examinations will be allowed. 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 three 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

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

The BS in airline management program's learning outcomes are as follows. Graduates will be able to:

- a) Apply verbal and quantitative skills to address managerial issues.
- b) Demonstrate knowledge of basic principles of different functional areas of management.
- c) Apply an appropriate mastery of issues and tools used in the airline industry.
- d) Function individually and on multidisciplinary teams.
- e) Communicate effectively orally and in writing.
- f) Understand professional, ethical and social responsibilities.
- g) Graduates will recognize the need for and possess the ability to pursue lifelong learning to the graduate level and beyond.
- h) Have a respect for diversity and knowledge of contemporary professional, societal and global issues.
- i) Demonstrate a commitment to quality, timeliness and continuous improvement.

BS Airline Management Curriculum

		Lecture Credits	Lab Credits
Seminars			
CD101	Career Development Seminar	0	0
FYE101	Freshman Year Experience	1	0
ILT101	Information Literacy	1	0
	Total Credits	2	0
Arts and Sciences Courses			
ECO255	Principles of Economics	3	0
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
	Total Credits	36	0
Math and Sciences Courses			
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
	Math/Science Elective	3	
	Total Credits	20	2
Management and Aviation Courses			
AER101	Introduction to Aeronautics	3	0
ALM135	Airline Operations	3	0
ALM240	Airline Economics and Finance	3	0
ALM362	Airline Management	3	0
ATC200	Basic Air Traffic Control I	2	1
ATM320	Aviation Law	3	0
ATM345	International Trade and Finance	3	0
ATM450	Air Transport and Cargo Management	3	0
ATM452	Air Transport Regulations	3	0
FLT241	Aviation Safety	3	0
FLT384	Management of Environmental Issues	3	0
MGT110	Introduction to Management	3	0
MGT120	Principles of Accounting	3	0
MGT210	Organizational Behavior	3	0
MGT220	Corporate Accounting	3	0
MGT230	Financial Management	3	0
MGT240	Managerial Economics	3	0
MGT360	Business Communications	3	0
MGT365	Public Relations	3	0
MGT403	Internship/Degree Project	3	0
MGT470	Industry and Labor Relations	3	0
MGT480	Capstone Degree Project	3	0
	Total Credits	65	1

Total Lecture and Lab Credits

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GENERAL MANAGEMENT BACHELOR OF SCIENCE (BS) DEGREE

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 advisor 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 advisors 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, 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

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 non-native speakers; therefore, no by-pass examinations will be allowed. 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

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

The BS in general management program's learning outcomes are as follows. Graduates will be able to:

- a) Apply verbal and quantitative skills to address managerial issues.
- b) Demonstrate knowledge of basic principles of different functional areas of management.
- c) Demonstrate an appropriate mastery of current knowledge, techniques and tools used in the industry of the major built around their open elective courses.
- d) Function individually and on multidisciplinary teams.
- e) Communicate effectively orally and in writing.
- f) Understand professional, ethical and social responsibilities.
- g) Recognize the need for and possess the ability to pursue lifelong learning.
- h) Have a respect for diversity and knowledge of contemporary professional, societal and global issues.
- i) Demonstrate a commitment to quality, timeliness and continuous improvement.

BS General Management Curriculum

		Lecture Credits	Lab Credits
Seminars			
FYE101	Freshman Year Experience	1	0
ILT101	Information Literacy	1	0
CD101	Career Development Seminar	0	0
	Total Credits	2	0
Arts and Sciences Courses			
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
	Total Credits	33	0
Math and Sciences Courses			
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
	Math/Science Elective	3	
	Total Credits	20	2
General Management Courses			
ECO255	Principles of Economics	3	0
MGT110	Introduction to Management	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
MGT365	Public Relations	3	0
MGT371	Marketing Management	3	0
MGT403	Internship/Degree Project	3	0
MGT470	Industry and Labor Relations	3	0
MGT480	Capstone Degree Project	3	0
	Total Credits	36	0
Open Electives		30	
Total Lecture and Lab Credits			123

MANAGEMENT DEPARTMENT ADVISORY COUNCIL

SUSAN M. BAER
Director of Aviation
The Port Authority of New York and New Jersey

THOMAS L. BOSCO
LaGuardia Airport

ALICE CHAN, ESQ.
Mendes & Mount, LLP

JOHN DEFELICE
JFK International Air Terminal LLC
Terminal 4, retired

WARREN KROEPPPEL
General Manager, LaGuardia Airport
The Port Authority of New York and New Jersey

STEVE MIKHLIN, '99
Marsh & McLennan

GREG PRINCIPATO
Airports Council International

CHUCK SELIGA
Stewart International Airport (retired)

ALFRED WERNER
MacArthur Airport

MATHEMATICS TEACHER PATHWAYS AT VAUGHN COLLEGE

Vaughn College has partnered with Metropolitan College of New York to create a Teacher Education Pathways Program. This program places eligible students on a fast track to a career as a New York City mathematics teacher.

Students enrolled in this program will first earn a bachelor of science in engineering or engineering technology at Vaughn's campus and then, after taking as few as three supplemental mathematics courses, go on to earn a master of science in math education from Metropolitan College. Most of the required courses are required Vaughn College courses. The required courses for students in the Teacher Pathways Program are:

Mathematics Pathways Course Listing

Subject Number	Subject Name	Credits
MAT 120	Calculus I	4
MAT150	Geometry	3
MAT 220	Calculus II	3
MAT356	Probability and Statistics	3
MAT 445	Differential Equations	3
MAT450	Multivariable Calculus	3
MAT452	Numerical Analysis	3
MAT455	Linear Algebra	3
MAT 458	Complex Variables	3
MAT450	Discrete Mathematics	3

Course Descriptions

MAT 120 – Calculus I – 4 credits

This first course in calculus is an introduction to differential calculus of algebraic, transcendental and rational functions. Topics include limits and differentiation with graphical applications. All topics will be covered from an algebraic, numerical and graphical point of view. Integration will be introduced at the end of the course. Applications to the physical and managerial sciences will be included.

MAT150 – Geometry – 3 credits

This course will provide a survey of the geometry necessary for college students. Included in this course will be a study of Euclidean geometry in both 2-D and 3-D as well as selected topics from transformation, coordinate, projective and non-Euclidean geometries. Use of the dynamic software packages such as Geometer's Sketchpad will be included.

MAT 220 – Calculus II – 3 credits

A continuation of MAT120, this course covers the study of differential and integral calculus of the elementary functions. The relationship between integral and differential calculus and numerical methods will also be discussed. Applications to the physical, biological and managerial sciences will be introduced. Multivariable calculus will also be introduced. If time permits, infinite series will also be covered.

MAT356 – Probability and Statistics – 3 credits

An introduction to probability and statistics. Topics include elementary probability, descriptive statistics, elementary distributions such as the binomial distribution, the hypergeometric distribution, the geometric distribution and the normal distribution. Sampling theory and statistical testing will also be covered.

MAT415 – Multivariable Calculus – 3 credits

A continuation of MAT 220, this course focuses on the study of curves and surfaces in three-dimensional space. Topics include spatial visualization, direction of space curves, orientation of surfaces. Tangent lines and planes, partial differentiation, multiple integrals the divergence theorem, and Green's theorem.

MAT 445 – Differential Equations – 3 credits

This course is a study of differential equations and the techniques used to solve them. Topics will include solution methods of first-order differential equations as well as higher-order equations. Emphasis will be placed on the many applications of differential equations that occur in both the physical and biological sciences.

MAT450 – Discrete Mathematics – 3 credits

Basics concepts of discrete mathematics: logic and set theory, proof techniques, relations, functions, combinations, recurrence relations, introduction to analysis of algorithms and graph theory.

MAT452 – Numerical Analysis – 3 credits

An introduction to the numerical techniques used to approximate the solutions to algebraic and differential equations. Numerical methods used to approximate solutions to definite integrals will also be covered. Students will complete projects using the programming language MATLAB.

MAT455 – Linear Algebra – 3 credits

This course will serve as an introduction to linear algebra. Among the topics covered will be systems of equations, matrices the rank and nullity of a matrix. Also covered will be vectors and vector spaces, linear dependence, orthogonality and the notion of a basis for a vector space. The second part of the course will introduce eigenvalues and eigenvectors and diagonalization problems. If time permits, the course will conclude with a discussion of the Jordan Canonical form.

MAT 458 – Complex Variable Functions – 3 credits

A first course in complex analysis, this course covers the complex number system as well as differentiation and integration of functions of a single complex variable. Topics include the Cauchy-Riemann conditions, analytic functions and their properties. Much attention will be given to the complex exponential and logarithmic functions as well as the complex trigonometric functions. Complex integration will also be introduced as well as Cauchy's theorem and some results related to Cauchy's theorem, as well as Taylor and Laurent Series expansions; and the calculus of residues and various applications.

AVIATION TRAINING INSTITUTE

The Aviation Training Institute, a division of Vaughn College of Aeronautics and Technology, is dedicated to excellence in aviation technical

education for 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
Total Units		52	26.5	78.5

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 chair.

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
SEMESTER I				
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
Semester total		16	6	22
SEMESTER II				
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
Semester total		12	7	19
SEMESTER III				
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
Semester total		11	7	18
SEMESTER IV				
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
Semester total		13	6.5	19.5
Total Units		52	26.5	78.5

STUDENTS' RIGHTS AND RESPONSIBILITIES

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

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

COUNSELING AND WELLNESS

Vaughn College Counseling Services offers short-term counseling to Vaughn students who may be experiencing personal, social or academic 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 centers provide a holistic approach to wellness education, promoting individual and community wellness through programs and outreach activities. We offer workshops, lectures and student leadership training throughout the semester. The center will also serve as a resource for students with disabilities.

STUDENT ACTIVITIES AND RESIDENCE LIFE

The office of student services works with student government, student clubs and organizations and interested students who plan programs and activities for the student community on campus. The programs and activities presented to the students are an integral part of the educational and leadership development experiences at the College. Through an array of cultural, social, recreational and educational programs, students are provided with an important opportunity for enriching their college experience.

Vaughn promotes a large and varied program of co-curricular activities that offer students a means of supplementing their formal classroom education. Students who are interested in planning programs or becoming involved in activities should contact the office of student services.

STUDENT GOVERNMENT ASSOCIATION

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 co-curricular involvement through a number of clubs and organizations.

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

STUDENT CLUBS AND ORGANIZATIONS

Vaughn College supports a variety of student organizations. Activities are moderated by members of the faculty and staff. Students interested in joining should contact the office of student services.

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.

CHESS CLUB

This student-formed club was created to teach the Vaughn Community how to play chess and to give an arena for students to congregate and socialize. The Chess Club holds tournaments throughout the year for friendly competition that are open to students, staff and faculty.

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 relationships between students, faculty and peers. Circle K is part of the national Kiwanis organization, and Vaughn's chapter is closely supported by the La-Guardia Kiwanis Club.

DANCE CLUB

This club was established to combine each individual's musical culture to create a form of expression and entertainment through dance.

JAPANESE CULTURE CLUB

This club was created to show students how parts of the Japanese culture have influenced American society. Any student can join; students do not have to be of Japanese ethnicity.

PODCAST CLUB

This club was established by students who are interested in the digital media realm. The Podcast Club promotes communication between students, who can exchange ideas and interact with one another in a non-prejudicial environment.

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 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.

RUNWAY CLUB

This club is an organization designed for fashion enthusiasts who appreciate and follow the trends in fashion. The club holds numerous fundraisers that are geared to raise money for charities and club events. The club also hosts an annual fashion show.

PROFESSIONAL SOCIETIES

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 programs 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 of 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 the student an opportunity for membership in a professional society dedicated to the technical advancement of all forms of transportation.

THE SOCIETY OF WOMEN ENGINEERS

This society addresses the needs of women attending college and entering the career of aerospace. 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.

WOMEN IN AVIATION – INTERNATIONAL (WIA-I)

Vaughn 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

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, INTRAMURAL SPORTS AND FITNESS

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.

The intramural programs are determined by student interest. Any students who wish to participate should inquire in the student activities and leadership office.

The student fitness center, a health facility with weight training and cardiovascular equipment, has free weights, as well as Nautilus equipment, a StairMaster, treadmill and stationary bicycle.

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.

Vaughn College competes intercollegiately in men's basketball, men's soccer, women's tennis, women's basketball and men's and women's cross country. Men's teams compete in the Hudson Valley Men's Athletic Conference. Women compete in tennis as part of the Hudson Valley Women's Athletic Conference. In conference play, Vaughn competes against such colleges as Cooper Union, Webb Institute, the College of Mount Saint Vincent, Sarah Lawrence, Berkeley and Pratt Institute. Call or e-mail Jon Hochberg, director of athletics, recreation and student services, at 718.429.660 ext. 131 or jon.hochberg@vaughn.edu for tryouts and more information.

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.

HARASSMENT

Vaughn College does not discriminate on the basis of age, race, color, creed, religion, national origin, citizenship status, gender, sexual orientation, marital status, disability or status as a Vietnam or other veteran, or for any other category recognized by local, state or federal law.

In the programs, activities, and services offered, including but not limited to admissions, recognition of performance and achievement, which the College provides to students, staff, and applicants, it continually strives to maintain a nondiscriminatory environment. The College has appointed the vice president of student affairs at 718.429.6600 ext. 221 and the assistant vice president of human resources and college services at 718.429.6600 ext. 105 as officials responsible for coordinating efforts with regard to nondiscrimination, including Title IX (gender discrimination and sexual harassment) and Section 504 and the Americans with Disabilities Act (disability discrimination).

Vaughn is committed to promoting an environment for all students, faculty and staff that is fair, humane and respectful, and that recognizes and rewards students, faculty and staff performance on the basis of relevant considerations, such as ability and effort. The College expects that all of its members will treat each other fairly and equitably, and without regard to differences such as those described earlier. 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 Vaughn's operations.

While the College makes an effort to prevent discriminatory conduct, there may be instances when an individual or group will feel that they may have been subjected to discriminatory treatment. Any individual or group that feels there may have been discrimination is strongly encouraged to ask for guidance, or file a complaint. Vaughn will take steps to achieve a prompt and equitable resolution of any complaints. However, the College's effectiveness in handling instances of discrimination or harassment depends upon an individual raising concerns as early as possible.

Discrimination and harassment, particularly sexual harassment, can occur in many ways, either intentionally or by accident. It can involve conduct that is insensitive or derogatory, demeaning or threatening, and can affect one's education, performance, personal interactions and work. It is not tolerated at the College and is covered by Vaughn's

grievance procedure.

The College's policies on harassment and discrimination are fully defined in the student handbook, which is distributed to all students, and is available through the office of student affairs.

BIAS-RELATED CRIMES

New York state law requires that Vaughn College informs students about the Hate Crimes Prevention Act of 2000 (article 485) and how hate crimes, also known as bias-related crimes, can be prevented on campus. Copies of this policy and the New York law are available from the department of student affairs for all current and incoming students and employees, as well as to prospective students and employees upon request.

A bias-related crime, also known as a "hate crime," is a criminal offense committed against a person, property, or society that is motivated, in whole or part, by the offender's bias against a race, religion, disability, sexual orientation, or ethnicity/national origin. Bias-related offenses occur when persons are harassed, annoyed, threatened, alarmed or subjected to physical contact because of race, color, religion, national origin or sexual orientation.

Colleges and universities strive 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. As a result, students enter college with different experiences, backgrounds, and characteristics, and interact with one another, often for the first time, within the college environment. This can lead to discomfort, distrust and even hostility. This most commonly manifests itself in the form of name-calling, stereotyping, graffiti or other vandalism, or physical assault.

Penalties for bias-related crimes are serious and range from fines to imprisonment for lengthy periods, depending on the nature of the underlying criminal offense, the use of violence or previous convictions of the offender.

Hate/bias crime incidents that rise to a felony level are reported to the Division of Criminal Justice Services in Albany. When a person is convicted of a hate crime and the specific offense is a violent felony offense, the hate crime shall be deemed a violent felony offense.

When a person is convicted of a hate crime and the specified offense is a misdemeanor or a class C, D or E felony, the hate crime shall be deemed to be one category higher than the specified offense the defendant committed, or one category higher than the offense level applicable to the defendant's conviction for an attempt or conspiracy to commit a specified offense, whichever is applicable.

When a person is convicted of a hate crime and the specified offense is a class B felony:

- (a) the maximum term of the indeterminate sentence must be at least 6 years if the defendant is sentenced pursuant to section 70.00 of this chapter;
- (b) the term of the determinate sentence must be at least 8 years if the defendant is sentenced pursuant to section 7.01 of this chapter;
- (c) the term of the determinate sentence must be at least 12 years if the defendant is sentenced to section 70.04 of this chapter;
- (d) the maximum term of the indeterminate sentence must be at least four years if the defendant is sentenced pursuant to section 70.05 of this chapter; and
- (e) the maximum term of the indeterminate sentence or the term of the determinate sentence must be at least 10 years if the defendant is sentenced pursuant to section 70.06 of this chapter.

When a person is convicted of a hate crime and the specified offense is a class A-1 felony, the minimum period of the indeterminate sentence shall be not less than 20 years.

Non-felony hate/bias crime incidents may be adjudicated through the Campus Policies and Regulations Governing Conduct as outlined in the student handbook. Sanctions imposed by the College may include suspension and expulsion depending on the severity of the crime. The College retains the right to pursue discipline for felony and non-felony violations of the law per policies outlined in the student handbook.

All incidents of bias-related crime should be immediately reported to campus security and the assistant vice president of student affairs. The victim can bring a complaint either through the College judicial system or in criminal courts, or in both.

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

Counseling and personal support is available to victims of bias-related crimes through the office of student affairs. This service is confidential and free. The office of student affairs may also serve as a resource and referral agent to students in the event of a bias-related incident.

In this multicultural and multiethnic campus community, the College hopes that through educational programs we are able to help individuals understand and combat negative racial attitudes, religious discrimination and cultural 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 crimes are fully described in the student handbook, which is distributed to all students, and is available through the office of student affairs.

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 an indispensable component for 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, which are published in the student handbook and govern student behavior, policies and procedures 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.

HEALTH SERVICES

Vaughn College is committed to the whole person; providing health services and recreational opportunities is part of this commitment.

The College's fitness center is a health facility with weight training and cardiovascular equipment, including state-of-the-art Nautilus, free weights, StairMaster treadmill and exercise bicycles.

The fitness center is located on the lower level of the main building, near the cafeteria. Students who wish to utilize the fitness center must sign the Vaughn College Fitness Center Waiver and Release Agreement prior to use of the equipment. For more information, please contact the assistant director of student services.

Student Health Insurance

Vaughn is pleased to offer a student health insurance plan administered by United Healthcare Student Resources and underwritten by United Healthcare Life and Health Insurance Company. This plan is designed to provide the quality of health care coverage you need at a price suited to a student's budget.

Vaughn College would like for all eligible students to have health insurance coverage because inadequate or no coverage could cause a financial burden. If you have been enrolled under another policy, please check the policy to make sure you are still eligible for coverage. Given the recent changes in health care law and eligibility, students who have declared financial independence for financial aid may not be covered. 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.

For a full description of coverage, including costs, benefits, exclusions, any reductions and limitations, and the terms under which the coverage may remain in force, contact United Healthcare Student Resources at 1.800.767.0700, or visit it on the web at www.UHCSR.com.

STUDENT HANDBOOK

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

Our three-story residence hall provides accommodations for 200 students. Residents live in either a two-person or four-person suite with a semi-private bath. A limited number of three-person and four-person rooms are also available. 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 www.vaughn.edu/studentaffairs or contact the office of student affairs.

OFF-CAMPUS HOUSING

The office of student services offers assistance to students and applicants in finding off-campus housing upon request. For a list of local landlords with available rooms and apartments, please contact the assistant director of student services.

FOOD SERVICES

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

The dean of student development and campus life and the 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 advisor as soon as possible after his/her arrival. The designee is available in the Division of Student Affairs and Enrollment Management and is the essential source of information regarding immigration. The advisor should also be consulted for help with any special problems that international students may encounter.

LOCKER RENTAL

A limited number of lockers are available for rent from the office of student services. Students have the option to rent per semester or per academic year. Fees are \$10 per semester, \$15 for both the fall and spring semesters and \$5 for both summer sessions.

CRIME STATISTICS

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 vice president of student affairs. You can also visit the Office of Post-Secondary 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

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 OBJECTIVES AND ACADEMIC PROGRAMS

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:

Aircraft Service International Group
Alaska Airlines/Horizon Air
American Airlines
AFCO/AvPORTS
B. F. Goodrich
The Boeing Company
Bombardier Transportation
Cessna Citation
Chautauqua Airlines
CitationShares
Columbia Helicopter
Consolidated Edison
Continental Airlines
Copa Airlines
Covenant Security
Delta Air Lines
Emirates
Empire Aero
Federal Aviation Administration
General Dynamics
Gulfstream
International Business Machines (IBM)
jetBlue Airways
JFK International Arrivals Terminal
Keyspan
Lockheed Martin
Mesaba Airlines
Metropolitan Transportation Authority (MTA)
Northrop Grumman Corporation
Orion Power Systems
Panasonic Avionics
Panorama Flight Services
Pinnacle Airlines
The Port Authority of New York and New Jersey
Rockwell Collins
Southern Air
Southwest Airlines
Sikorsky Helicopters
United Airlines
United Technologies
USAirways

ONLINE CAREER SERVICES

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.vca.edu.

INTERNSHIPS AND COOPERATIVE EDUCATION

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 of available opportunities through the office of career services, faculty advisors 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 are some of the active internships and cooperatives:

- Air Canada
- American Airlines
- American Eagle
- The Boeing Company
- Delta Air Lines
- Enterprise Rent-A-Car
- Federal Aviation Administration (FAA)
- Federal Express
- Global Air Dispatch
- Hispanic Association of Colleges and Universities (HACU)
- INROADS
- jetBlue
- JFK International Arrivals Terminal
- Lockheed Martin
- Metropolitan Transportation Authority (MTA)
- National Aeronautics and Space Administration (NASA)
- Northrop Grumman Corporation
- ORBIS
- Panasonic Avionics Corp.
- Passur
- Pinnacle Airlines
- The Port Authority of New York and New Jersey
- Republic Airport
- Revista Aerea, Latin Aviation Magazine
- Sikorsky
- Stewart Airport
- Swissport
- United Airlines

CONTINUING EDUCATION AND PROFESSIONAL DEVELOPMENT

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 fall to provide students with information.

ALUMNI AFFAIRS

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

The nationwide network of alumni has proved 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); in the alumni e-mail 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.

Career development guidance and assistance are always available to alumni. Contact Philip Meade, director of career services at 718.429.6600, extension 189 or e-mail him at philip.meade@vaughn.edu.

2011-2012 Alumni Association Meetings

Wednesday, November 16, 2011

Wednesday, January 18, 2012

Wednesday, March 14, 2012

Wednesday, May 23, 2012

All meetings take place at 5:30 p.m. in the faculty conference room.

MILITARY CAREERS

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, aircraft observers, as well as aviation and aerospace technicians on the basis of their education at the College.

AIR FORCE RESERVE OFFICERS

TRAINING COURSE (AFROTC)

Vaughn College of Aeronautics and Technology students in the bachelor's and associate's in applied science degree programs can enroll in the Air Force Reserve Officers 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 and training 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.

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 sub-system 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 into 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 air-worthiness. 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. 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*

AAM495 – UNMANNED AEROSPACE VEHICLES – 3 credits

The course introduces developments in the field of unmanned aerospace vehicles for military, meteorological and cartographic purposes, among others. It examines alternate sources of electrical power for Unmanned Aerospace Vehicles (UAV). It modifies and incorporates these devices into a UAV with potential applications in other industrial areas as well and attempts to validate the modifications by aerial responses to a ground monitoring station.

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, fundamentals of flight and 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.

AER300 – CURRENT TOPICS IN AVIATION – 3 credits

The course examines the leading issues in aviation today with world-recognized aviation expert John Goglia. 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.

AIA400 – 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.

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. Prerequisite: MGT110; *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 its special application

to the aviation industry. Prerequisites: ECO255 or MGT240; *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. Prerequisite: MGT110; *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. Prerequisite: MGT110.

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. Prerequisite: MGT110.

ATC200 – BASIC AIR TRAFFIC CONTROL I – 3 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, 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 FLT351 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.

ATC220 – ATC WEATHER

– 3 credits

Multiple phases of meteorology are examined and applied by students. Principles of meteorology, familiarization with pre-flight weather briefings, en route weather reports and weather hazards are studied, preparing students for flight applications. The laboratory portion ensures that the use of Direct User Access Terminals (DUATs) is completely integrated in 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. See the Student Advisement Center for more information.

ATC240 – BASIC AIR TRAFFIC CONTROL II

– 3 credits

This course builds upon instruction on 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. Prerequisite: ATC200; Corequisite: ATC220

ATC300 – BASIC AIR TRAFFIC CONTROL CAPSTONE REVIEW AND SCREENING

– 3 credits

This course will be a cumulative review of the basic skills covered in the program. 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 students enter the Federal Aviation Administration Academy.

The review course will be taught over 40 hours (one week). 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. The screening exam will be given on the final day of the review course, and opportunities will be offered so that students can retake the exam. This course will be delivered at a minimum of once every other month during the spring and fall semesters and at least once during the summer. A one-time charge of \$500 will apply, after which 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 and ATC240, graduated from Vaughn with an AT-CTI-approved degree.

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. Prerequisite: ENG110; *spring offering only*

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 United States department of 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.

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). Prerequisite: ENG110; *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. Prerequisites: 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 electro-mechanical flight instruments and synchros, Electronic Flight Instrument System (EFIS), Engine Instrument Crew Alert System (EICAS), 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*

AVT230 – AIRCRAFT COMMUNICATIONS SYSTEMS – 3 credits

This course covers the fundamentals of electronic communications systems. Included is a discussion of AM, FM, single side band and digital communications, oscillators, tuning circuits, detectors, radio frequency amplifiers, transmission lines and antennas. Coverage of very high frequency (VHF) and other communication transreceivers is included. Satellite communications are also discussed. Mathematical derivation is included. Class work is complemented by laboratory experiments.

AVT235 – AIRCRAFT NAVIGATION SYSTEMS – 3 credits

This course covers the principles of very high frequency navigation receivers, including very high frequency omnidirectional range (VOR) localizer, glide-slope and marker beacon receivers. Other topics include long-range navigation systems, including inertial navigation systems (GPS). Classwork is supplemented by lab computer-aided testing, calibration and troubleshooting. Prerequisite: EET220, MAT220; *spring offering only*

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, MAT220; corequisite: EET230; *spring offering only*

AVT245 – RADAR SYSTEMS – 3 credits

This course covers the principles of pulse and microwave circuits as typically applied to search and weather radar. Mathematics, including calculus, will be used. 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; *spring offering only*

AVT250 – LICENSE REVIEW – 0 credit

This course prepares students for the Federal Communications Commission (FCC) General Radio-Telephone License Examination. This course requirement must be satisfied to be eligible for graduation. Prerequisite: AVT453; corequisite: AVT455

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: AVT210; *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 auto pilot and flight director

system. The course also covers gyroscopes, synchros and instrumentation. Classwork is complemented by laboratory exercises. Prerequisite: AVT240; *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 using FMS. Prerequisite: AVT347; *spring offering only*

AVT351 – LONG-RANGE NAVIGATION SYSTEMS – 3 credits

This course covers the principles of long-range navigation systems, including LORAN C integrated with global positioning systems (GPS) and inertial navigation systems. Also covers differential GPS principles. Classwork is complemented by laboratory exercises. Prerequisite: AVT240; *spring offering only*

AVT352 – INTEGRATED AVIONICS SYSTEMS – 3 credits

This course covers the principles of integrated avionics systems, including flight management systems, area navigation (RNAV), Doppler radar / inertial navigation system, air data computers, navigation computers, map displays, and attitude heading reference systems. Also covers ancillary systems, including voice cockpit recorders, ground proximity warning systems and emergency locator transmitters. Prerequisite: AVT347

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. Prerequisites: AVT349, AVT352; *fall offering only*

AVT454 – AVIONICS INSTALLATION AND MAINTENANCE – 3 credits

This course covers the principles and practices of avionics system integration and installation on cur-

rent 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: CDE117; *full 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.

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: AVT453, MAT356; *spring offering only*

AVT457 – FIBER OPTICS – 3 credits

This course deals with the use and application of fiber optics systems in modern aircraft and avionics systems. Topics covered are fiber theory, fiber characteristics, infrared electronics, laser sources and detectors, transmission cables, connectors and splices and other fiber-optic components. Laser gyroscopes are also discussed as part of aircraft optical devices. Classwork is complemented by laboratory experiments. Prerequisites: AVT220, AVT230, AVT245; *fall offering only*

AVT458 – RADAR ALTIMETERS – 3 credits

This course covers radio and radar altimeter systems. Topics include modulators, receiver-transmitter and altitude processor sections. Classwork is complemented by laboratory experiments. Prerequisites: AVT230, AVT240, AVT245; *spring offering only*

AVT459 – AREA NAVIGATION SYSTEMS – 3 credits

This course covers aircraft area navigation systems (RNAV). Topics include the process by which very high frequency omnidirectional range (VOR) and distance measuring equipment (DME) outputs are combined by area navigation to provide navigation direction to selected waypoints. Classwork is com-

plemented by laboratory experiments. Prerequisites: AVT235, AVT240, AVT351; *fall offering only*

BM01 – DEVELOPMENTAL MATHEMATICS – 3 hours

See Basic Skills Courses, page 125.

BM02 – DEVELOPMENTAL MATHEMATICS II – 3 hours

See Basic Skills Courses, page 125.

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 – ENGINEERING GRAPHICS WITH COMPUTER-AIDED DESIGN/SOLID EDGE – 3 credits

The goal of this course is to provide an introduction to engineering graphics and computer-aided design. 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) and computer-aided engineering, orthographic projection dimensioning, auxiliary and section views and geometric construction. Prerequisite: ILT101

CDE120 – ENGINEERING GRAPHICS AND COMPUTER-AIDED DESIGN (CAD) – 3 credits

The goal of this course is to introduce basic concepts of traditional mechanical drafting while using the CAD terminal as the primary formal drafting tool. Emphasis will be placed on the interpretation, sketching and the formal creation of two-dimensional engineering drawings, meeting standards as used in the manufacturing and repair of individual parts, assemblies and subassemblies. Topics include the basics of descriptive geometry and orthographic projections, sketching, pictorials, auxiliary views, section views, dimensioning, assembly drawings and the standards used in creating and the filling out of title boxes, revision boxes, and the bill of materials. In addition, the creation, modification and plotting of CAD entities will also be covered. Prerequisite: CSC111

CDE240 – COMPUTER-AIDED DESIGN II – 3 credits

This course covers the use of Solid Edge and Auto-

CAD software in the production of 2-D and 3-D computer graphics as it relates to engineering and architectural applications. Students will be introduced to working in 3-D space within Solid Edge and will utilize its 3-D drawing tools such as wire-frame and solid modeling as well as the production of perspective and multi-view drawings. Students will create detail and assembly drawings (2-D in AutoCAD) using current industrial practices, create 3-D solid models in Solid Edge, and create sheet metal drawings, air foil layouts (lofting) and perform tolerance calculations. Prerequisite: CDE117 or CDE120

CDE270 – COMPUTER-AIDED DESIGN III – 3 credits

This course covers the more advanced functions of the AutoCAD software program. Topics include the creation and usage of blocks and their attributes, advanced use of layers and cross-referenced drawings. The use of AutoCAD's internal programming language Autolisp is also covered. Students will also learn how to extract object information from a drawing and database for use in material schedule assignment. Portfolio creation and management of student AutoCAD work will also be discussed. Prerequisite: CDE240

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. 3-D 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 – 3 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 me-

chatronics 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

This course teaches necessary skills in the area of printed circuit board technology, wiring and soldering. Topics include detailed drawings, chassis layout, shearing, drilling, reaming, punching, cutting, bending of metals, printed board circuit fabrication, wiring, soldering, harness and cables. Two hours of class work will be complemented by three hours of lab work per week. Prerequisites: EET240, ILT101, MAT120, MAT356; corequisite: EET355

CDE480 – SOLID EDGE II – 2 credits

This course will explore the foundation concepts of the Solid Edge V18 application. The laboratory projects will focus on parametric parts modeling, their representation using drawing views to graphically communicate their manufacture, assembling and constraining several parts together and surface models and their underlying wire frame foundations. Prerequisite: CDE130

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, 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 an 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

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: BM02 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 work-

sheet 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

CSC316 – C++ PROGRAMMING – 3 credits

An elective introduction to 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 the computers for computation and data 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. Corequisite: EGR340.

DP407 – DEGREE PROJECT – 0 credit

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 report demonstrating an exceptional level of knowledge in the scope of their area of study. This comprehensive report is prepared to qualify for graduation and must be on an approved technical subject. Students are required to prepare a synopsis at the beginning of the semester for approval; a strict timeline will be followed for successful completion. The paper shall be prepared using American Psychological Association (APA) format.

DP409 – DEGREE PROJECT – 3 credits

This project is a capstone project for students enrolled in engineering, or electronic or mechanical engineering technology programs. The project should demonstrate applications of the knowledge and technical skills gained throughout the curriculum. Students are required to submit a synopsis of the project in the beginning of the semester that must be approved by the department chair. At the end of the semester students must submit a complete project report and present a seminar. Prerequisite: final semester status. Prerequisites: EET355, EGR380, OPC445

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, creativity 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 graphical 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

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 and 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 story telling 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 photorealistic 3-D scenes. Introduction to beginning animation techniques will also be covered. Prerequisite: CDE120

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, DVD and video games. Prerequisites: DSG250, DSG260

DSG263 – DIGITAL VIDEO EDITING – 3 credits

This course offers students the opportunity to learn pre-publication 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 attitude 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 –

Students will learn how to use Z-Brush's advanced Pixol technology to create 3D organic forms, such as animals, human anatomy and hard-surface scene assets. The course will provide special focus on 3D re-topology for animation and game engines. Students will practice vertex-based polypainting, UV coordinate texturing for geometry. Students will use Z-Brush 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 – PRINCIPLES OF ECONOMICS – 3 credits

This course analyzes issues of demand, supply and markets. It examines different economic theories related to the organization, development and functioning of economic institutions. It also addresses labor markets, monetary systems and the international economy. Prerequisites: ENG110 and MAT115

ECO478 – PROJECT MANAGEMENT, ECONOMICS AND ETHICS – 3 credits

Introduction to project planning, organizing and controlling. Program Evaluation and Review Techniques (PERT) chart scheduling using Microsoft Project software. Topics include cost of money, present and future value economic analysis. Also covered are ethical practices and issues of conflict resolution. Prerequisite: ENG240

ECT010 – COMPUTER TECHNOLOGY I – “A+” – 4 credits

This course is an in-depth study of computer hardware and operating systems, the functionality of hardware and software components and suggested practices in maintenance and safety issues. Theory will be supplemented by hands-on work. These activities will include assembly and configuration of computer hardware, installation of operating systems, hardware and software troubleshooting techniques and an introduction to networking. Prerequisites: EET115, EET116, or permission from the instructor.

ECT020 – COMPUTER TECHNOLOGY II “NET+” – 4 credits

This study of network operating systems will include an intensive introduction to multiuser, multitasking network operating systems and characteristics of the Linux, WindowsNT and XP operating systems. It will also cover installation procedures, security issues and backup procedures. Remote access will be discussed in detail. Prerequisite: ECT010

ECT030 – CISCO NETWORKING FUNDAMENTALS – 4 credits

The course will cover the basic concepts of networking technology, the operating system interconnection model, industry standards, network topologies, identification addressing, subnet masking, networking components and basic network designs. Prerequisite: ECT020

EET110 – AVIONICS STANDARD PRACTICES – 3 credits

This course introduces the student to various electrical cables, wiring maintenance, harness fabrica-

tion and aircraft wiring installation practices. The student will be using electrical tools, soldering equipment, aircraft grade connector and splice tools, wire and sleeve marking, coaxial cable termination and harness testing. Introduction to electronic fundamentals and instruments is applied to course work. Classwork is complemented by laboratory experiments. Prerequisite: MAT115

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 capacitance, inductance, capacitance time constants, superposition theorem, Thevenin's and Norton's theorems. Two hours of lecture will be supplemented by a three-hour lab per week. Corequisite: MAT115

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; corequisite: MAT220

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, MAT115; corequisite: EET116

EET210 – ELECTRONICS LABORATORY PRACTICES – 2 credits

This course gives necessary skills in the area of printed circuit board technology, wiring and soldering. Topics include detailed drawings, chassis layout, shearing, drilling, reaming, punching, cutting, bending of metals, printed board circuit fabrication, wiring, soldering, harness and cables. One hour of classwork will be complemented by three hours of lab work per week. Prerequisites: CDE116, EET115, EET116; corequisite: EET220

EET220 – ELECTRONIC CIRCUITS – 4 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. Prerequisites: EET116, MAT120; corequisites: EET110, EET326

EET230 – PRINCIPLES OF COMMUNICATION SYSTEMS – 3 credits

Study and analysis of communication principles and systems will be covered. Topics include AM, FM modulation techniques, modulator, 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: AVT220, EET220, MAT120; corequisite: EET240

EET240 – PULSE CIRCUITS – 3 credits

An introduction to pulse fundamentals and circuits and their response in high-frequency applications. Two hours of lecture will be supplemented by a three-hour lab experiment per week. Prerequisite: EET220

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, MAT120

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. Prerequisites: EET240, EET326

EET350 – CONTROL SYSTEMS – 3 credits

Basic control systems using Laplace transforms will be covered in this course, in addition to prin-

ciples 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. Two hours of lecture will be supplemented by equivalent systems and how they apply to beams, trusses and frames. In addition, moments of inertia and friction are discussed. Prerequisites: EET230, MAT120, 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 serves. Prerequisites and Corequisites: EET230, EET326, EET315

EET365 – COMPUTER-AIDED DESIGN OF CIRCUITS – 3 credits

This course will instruct the student to industrial standard electronics circuit simulation software and its uses in designing and testing of the circuit. The student will learn how to design the circuit, enter it into the computer, run a basic analysis and simulation, and proceed to advanced simulation and analysis. The transfer of the circuit schematic diagram will then be ported to printed circuit board design and layout software. The software packages in use are Electronics Workbench Multisim and Ultiboard.

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. Prerequisites: EET355, OPC445

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

EGR210 – THERMODYNAMICS – 3 credits

This course discusses the fundamentals of thermodynamics, which include system concepts, state of equilibrium, processes of 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: EGR115, 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 members 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. Computer application is required for the homework assignments. Prerequisites: EGR115, MAT120

EGR225 – STRENGTH OF MATERIALS II – 3 credits

Analysis of stress and strain, beam deflections, statically indeterminate beam analysis, asymmetric bending, column theory and dynamic loading are covered. Computer applications use FORTRAN and BASIC. Laboratory experiments use strain gauge techniques. 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 non-destructive 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: EGR210, EGR235 and MAT120.

114 EGR235 – MATERIAL SCIENCE AND COMPOSITES – 3 credits

This course covers atomic structure, metallurgy, plastic and ceramic materials. Material characteristics related to mechanical properties are empha-

sized. 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: EGR215, PHY220; corequisite: EGR210

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 catenary cable and vibration problems, estimating first and higher derivatives using Taylor series expansion together with finite-difference technique, numerical integration and solution to the systems of linear algebraic equations. 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: EGR215, 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 quasi-static loads. Prerequisites: EGR225, EGR340; *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. Prerequisites: EGR210, EGR215 and 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, EGR220; *fall offering only*

EGR370 – FINITE ELEMENT ANALYSIS – 3 credits

In this course students will be introduced to the numerical solution of many physical problems, such as vibration, heat transfer and structural problems. The numerical solution for the governing equation of a physical system will be conducted by finite element techniques. In this course students will be introduced to the finite element methods and their implementation to engineering problems. Prerequisite: EGR225, EGR340

EGR375 – THERMO-FLUID LABORATORY –1 credit

The thermo-fluid laboratory is comprised 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/MEE210, EGR260, EGR345

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 introduced for application in Work Breakdown Structure (WBS), Gantt Charts, Critical Path Method and Resource Allocation Problems. Microsoft Office Project 2003 by Marmel and Operations Management by Russell and Taylor are used as texts for their examples of Microsoft Project and Microsoft Excel. Field Guide to Project Management edited by Cleland is used for case studies and real-life examples. Prerequisite: MAT115

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 – 4 credits

Given a specification for a small, two-engine turbofan-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. Prerequisites: EGR225, EGR260

EGR455 – AIRCRAFT STRUCTURAL ANAL-

YSIS – 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; *fall offering only*

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. Students will master the basic skills required to use PATRAN in mechanical engineering applications. The course emphasizes practical skills development through comprehensive, hands-on laboratory sessions. Students will learn to build analysis models using PATRAN, define material properties, create boundary conditions, apply loads, and submit their job for analysis and postprocessor results using NASTRAN. Prerequisite: EGR220

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. Corequisite: MAT125

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

ELE225 – DIGITAL SYSTEMS DESIGN – 3 credits

Students will study Boolean algebra, combinational circuits, flip-flops, counters, and how shift registers are covered up through an introduction to microprocessors. Digital circuits for oscillation, frequency synthesis, RF transmission and reception are also covered. Prerequisite: ELE117; corequisite: ELE220

ELE230 – DIGITAL SYSTEMS DESIGN – 3 credits

Number systems; Boolean algebra, logic circuits, gates, combinational circuits, flip flops, sequential circuits, counters, shift register, memory interfacing and introduction to microprocessor. Prerequisites, corequisites: MAT115, EET115

ELE326 – MICROPROCESSORS – 3 credits

This course is the 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 per week. Prerequisite: ELE230

ELE350 – CONTROL SYSTEMS I – 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 and frequency response, stability, control system design methods in both time and frequency domains. Prerequisite: ELE230

ENG110 – ENGLISH I – 3 credits

This course is designed to provide students the opportunity to study English grammar and to compose clear, concise and correct compositions stimulated by reading and discussion. Emphasis is placed on planning, developing and writing standard college essays employing the expository pattern of development. Prerequisite(s): BM01 and/or BM02, if applicable

ENG120 – ENGLISH II – 3 credits

This course is a continuation of ENG110 and is designed to enhance students' grammatical and analytical skills with special attention to helping them develop research and reporting skills. Preparation of research projects along with analytical reading will be stressed. 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. Prerequisites: ENG110, 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

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. Prerequisites: ENG110, ENG120

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. 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: Class II FAA medical certificate, financial counseling and WR02 and BM02, if applicable; lab fee 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. 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 exam lab fee 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

FLT230 – AVIATION WEATHER – 3 credits

Multiple phases of meteorology are examined and applied by students. Principles of meteorology, familiarization with pre-flight weather briefings, enroute weather reports and weather hazards are studied, preparing students for flight applications. The laboratory portion ensures that the use of Direct User Access Terminals (DUATs) is completely integrated in flight plan preparation by using weather maps and forecasts. This course can be taken as a basic science elective and any students wishing to participate in the College's partnership program with the Federal Aviation Administration, the Air Traffic-Collegiate Training Initiative (AT-CTI) program. Students not in the AT-CTI program can take an alternative section of the weather course, ATC220, ATC Weather. See the Student Advisement Center for more information.

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 de-icing, 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

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

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 de-icing 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 license. 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, including FLT231, and FLT351

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.

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 (call-outs, 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 attitude 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.

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

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; *spring offering only*

HIS490 – SPECIAL TOPICS IN HISTORY – 3 credits

Special topics courses are generally more advanced than introductory courses. These courses offer students an opportunity to learn about specific areas of research in a given field. Students who take HIS490 may use this course as a liberal arts elective if one is required in their curriculum.

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 U.S. 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

HUM490 – SPECIAL TOPICS IN THE HUMANITIES – 3 credits

Special topics courses are generally more advanced than introductory courses. These courses offer students an opportunity to learn about specific areas of research in a given field. Students who take HUM490 may use this course as a liberal arts elective if one is required in their curriculum.

ILT101 - INFORMATION LITERACY – 1 credit

This course will serve to present students with the skills necessary to develop information literacy skills. Students will learn to locate, access and evaluate information from a variety of sources. In addition to this, skills will be developed in the various forms of electronic communications as well as visual and written presentations.

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. To receive credit toward degree requirements, the internship will count as an elective course. Students having already satisfied course requirements can participate in internships for additional credit.

INT403 – INTERNSHIP (TECHNICAL ELECTIVE) – 3 credits

Students participating in a summer or during-the-year internship program and performing an internship related to their field of study must obtain approval and meet the requirements outlined by the sponsoring company. Students must submit a brief description of their job, along with a letter from their supervisor/human resources office, giving their title and functions. In addition, they must outline ideas for their paper, including some of their proposed reference sources. The assignment for the internship course has five sections: 1) introduction/research proposal; 2) letter from supervisor; 3) supervisor evaluation; 4) internship report paper; and 5) presentation.

MAT108 – FUNDAMENTALS OF ALGEBRA – 3 credits

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 MAT 109 (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 credits

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.

MAT115 – PRE-CALCULUS – 4 credits

This course covers polynomials, rational functions and transcendental functions. Topics for each type of function will include finding roots, graphing and modeling using applications from physics and engineering. Graphing utilities such as calculators and computers will be used where appropriate. Prerequisite: BM02, high school equivalent or standardized placement test

MAT120 – CALCULUS I – 4 credits

This first course in calculus is an introduction to differential calculus of algebraic, transcendental and rational functions. Topics include limits and differentiation with graphical applications. All topics will be covered from an algebraic, numerical and graphical point of view. Integration will be introduced when time permits. Prerequisite: MAT115

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.

MAT150 – GEOMETRY – 3 credits

This course will provide a survey of the geometry necessary for college students. Included in this course will be a study of Euclidean geometry in both 2-D and 3-D as well as selected topics from transformation, coordinate, projective and non-Euclidean geometries. Use of the dynamic software packages such as Geometer's Sketchpad will be included.

MAT220 – CALCULUS II – 3 credits

A continuation of MAT120, this course covers the study of differential and integral calculus of the elementary functions. The relationship between integral and differential calculus and numerical methods will also be discussed. Multivariable calculus will be introduced. If time permits, infinite series will also be covered. Prerequisite: MAT120

**MAT225 – CALCULUS II FOR ENGINEERS
– 3 credits**

The definite integral and applications to area, volume, work, differential equations etc. are explored, Sequences and series, vectors and analytic geometry in two- and three-space, polar coordinates, and parametric equations are also studied. Prerequisite: completion of MAT125 with a grade of C- or higher

**MAT325 – ENGINEERING MATH –
APPLIED DIFFERENTIAL AND PARTIAL
DIFFERENTIAL EQUATIONS – 3 credits**

The governing equations for many engineering problems can be expressed either in the form of differential equations or in the form of partial differential equations. In this course students will learn the development processes of those governing equations and their solutions. Topics covered include first and second order homogenous and particular differential equations, exponential functions, Laplace transform, Fourier's series and an introduction to the partial differential equation with applications to heat transfer, vibration and other engineering-type problems. Prerequisites: MAT225, MEE115, PHY220

**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: MAT120

**MAT415 – MULTIVARIABLE CALCULUS
– 3 credits**

This study of curves and surfaces in three-dimensional space is an elective continuation of MAT220. Topics include spatial visualization, direction of space curves, orientation of surfaces, tangent lines and planes. Also covered are partial differentiation, multiple integrals, divergence theorem and Greene's theorem. MAT450 may replace MAT445 in flight, aviation maintenance and airport management programs. Prerequisite: MAT220 or MAT 225

**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

**MAT450 – DISCRETE MATHEMATICS
– 3 credits**

Basics concepts of discrete mathematics covered will include: logic and set theory, proof techniques, relations, functions, combinations, recurrence relations, introduction to analysis of algorithms and graph theory.

**MAT452 – NUMERICAL ANALYSIS
– 3 credits**

An elective introduction to techniques in numerical methods used to solve algebraic and differential equations. Numerical methods used to compute integrals will be studied. The course will emphasize computer projects. Students will be expected to be familiar with a high-level programming language such as C. Prerequisites: CSC215 or CSC316 and MAT120 or MAT125

MAT455 – LINEAR ALGEBRA – 3 credits

Topics in this elective course include spatial visualization of linear problems, solving systems of linear equations, determinants, matrices and characteristic equations. Applications to engineering and numerical solutions will also be covered. Prerequisite: MAT120; *fall offering only*

**MAT458 – THEORY OF COMPLEX
VARIABLE FUNCTIONS – 3 credits**

This course is an introduction to classification, properties and forms of holomorphic mappings, continuity, differentiability and theory of complex integration. Also included are regular and singular points, Cauchy-Riemann conditions and conformal mappings. Prerequisite: MAT120

**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) and programming languages — Ladder, Block Function Diagram (BFD), Instruction List (IL) and Structured Text (ST), implementation of gate, timer and counter in PLC and industrial automation using PLC. In laboratory, Siemens 300/400 PLC, Step 7 and SIMATIC programming environments will be practiced. Prerequisite: ELE326.

MCE410 – MECHATRONICS I – 2 credits

This course will provide an in-depth theory of applications to mechatronics system of design. Topics include operating principles of sensors and motion transducers, electric and pneumatic hydraulic actuators, digital servo systems, digital motion drivers and motion controllers, digital control system designs and implementations. Prerequisites: ELE326, ELE350, MCE310, MEE365

MCE420 – MECHATRONICS II – 2 credits

This course will cover system design of an intelligent mechatronic system — mobile robotic car. Topics include sensor selection and motion measurement, 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. Prerequisite: MCE410

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 of 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, MEE115, PHY220

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

MEE220 – STRENGTH OF MATERIALS – 4 credits

This course covers the concepts of stress, strain, stress-strain diagrams, elasticity, thermal stress, torsion and beam analysis and design. This course

will also cover topics on beam deflection and statistically indeterminate beam analysis, and column theory. Laboratory experiments involving materials testing such as tensile test, torsion test and bending test by strain gauge will be conducted. Prerequisites: MAT225, 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 METHOD IN ENGINEERING – 3 credits

Topics covered are analytical and numerical solution to the differential equation of a physical problem, root determination with application to the mechanical and electrical engineering type problems, estimating first and higher derivatives using Taylor series expansion together with finite difference technique, solution to the systems of linear algebraic equations with application to mechanical and electrical engineering type problems. Prerequisites: MAT325, MEE215, PHY125

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. Prerequisites: MAT225 and MEE210, PHY220

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: MAT325, MEE220, MEE340

MEE365 – ELEMENT OF MACHINE DESIGN AND VIBRATION ANALYSIS – 4 credits

This introductory course in machine design utilize the principles of statics, dynamics and strength of materials in design of machine parts, such as shafts, keys, couplings, gears, spring, 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, MEE235

MEE370 – FINITE ELEMENT ANALYSIS – 4 credits

In this course students will be introduced to the numerical solution in the form of finite element for the many engineering problems. Topics covered include calculus of variation, derivation of Euler equations for the bar, heat transfer and beam type problems, and developments of finite element formulation with application to the engineering problems. For the lab portion of this course students will learn to implement PATRAN-NASTRAN finite element software in modeling, designing and solving engineering problems. Prerequisites: MEE220, MEE340 conciliation and fact finding. Prerequisite: MGT110

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. Prerequisite: MEE210

MGT110 – INTRODUCTION TO MANAGEMENT – 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.

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 – MANAGERIAL ECONOMICS – 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*

MGT360 – BUSINESS COMMUNICATIONS – 3 credits

This course analyzes elements in the communication process with business and management applications. Emphasis is placed on letters, reports, memoranda and technology in the presentation and communication process. Prerequisite: ENG110

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*

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 experience 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 a presentation in consultation with a faculty advisor.

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. Prerequisite: MGT110

MGT480 – CAPSTONE DEGREE PROJECT – 3 credits

Students in bachelor of science programs in airport, airline and general management take this course in their final semester. The capstone course uses 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. A comprehensive report and presentation are required.

OPC445 – 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

PHY120 – PHYSICS I – 4 credits

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. Corequisite: MAT115

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 – 4 credits

As a continuation of PHY120 topics include the laws of thermodynamics, harmonic motion, fluid motion, wave motion and the electromagnetic spectrum. Lab experiments correspond with lecture subjects. Prerequisite: PHY120

PHY335 – COLLEGE PHYSICS III – 4 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

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

POL490 – SPECIAL TOPICS IN POLITICAL SCIENCE – 3 credits

This course attempts to focus on events in American diplomacy within the framework of world politics and the international condition of the times. Major instruments of US foreign policy are analyzed. Prerequisite: POL254; *spring offering only*

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; *fall offering only*

SOC150 – GENERAL SOCIOLOGY – 3 credits

This course surveys anthropological backgrounds, social institutions, the relation of the individual to the group, loyalty patterns, various types of societies and the functions of the several levels of the community. Prerequisite: ENG110; *spring offering only*

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

ELECTIVES

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 electives must be selected from upper division courses. Consult your advisor 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 elec-

tives (see FLT231, FLT350 and FLT351 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.

BASIC SKILLS COURSES

The Division of Special Studies offers an array of basic skills courses to aid students in their 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.

BM01 – DEVELOPMENTAL MATHEMATICS – 3 equivalent hours

This course covers the elementary laws of numbers and algebra in addition to basic numerical and symbolic techniques. Included also are the basic concepts of geometry. Prerequisite: standardized placement test

BM02 – DEVELOPMENTAL MATHEMATICS II – 3 equivalent hours

This course is an introduction to algebraic functions. The solution of linear and quadratic equations is included. Emphasis is graphical and students use various plotting packages to emphasize concepts. Prerequisite: BM01, high school equivalent or standardized placement test

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 & 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 and essays using different rhetorical modes or strategies. In addition, students are introduced to writing the research paper.
Prerequisite: ENG108 or Accuplacer placement

**RD01 – DEVELOPMENTAL READING I
– 3 equivalent hours**

Developmental Reading I is designed to help students identify main ideas in reading exercises. In addition, students will build a strong vocabulary and learn how to discern implied ideas.
Prerequisite: Standardized placement test

**RD02 – DEVELOPMENTAL READING II
– 3 equivalent hours**

In Developmental Reading II, students refine their reading comprehension by improving their ability to discern implied ideas, main ideas and facts. They also learn to critically analyze various written materials and to discern flaws in communication.
Prerequisite: RD01 or standardized placement test

**WR01 – DEVELOPMENTAL WRITING I
– 3 equivalent hours**

This course covers grammar, sentence structure and paragraph construction. The student will learn how to write five well-constructed and concise essays.
Prerequisite: standardized placement test

**WR02 – DEVELOPMENTAL WRITING II
– 3 equivalent hours**

This course will cover the writing of essays and term papers. Emphasis will be placed on how to research, draft, edit, proofread, and document various written assignments. Prerequisite: WR01 or standardized placement test

AVIATION TRAINING INSTITUTE

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

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, de-icing 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. Prerequisite: BM11 or equivalent mathematics

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

of out-of-center of gravity range loading, weight shifting and aircraft loading charts. Laboratory projects supplement classroom work.

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 non-destructive 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, atmospheric, aerodynamics and thermodynamics, as related to aviation are stressed 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 turbo jet and turbo prop 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 2012 – 2013*

* All dates are subject to change. Check the website: www.vaughn.edu

FALL SEMESTER 2012

New Student Registration
Continuing Student Early Registration
Continuing Student Regular Registration
Labor Day (Holiday)
Classes Begin
Late Registration Begins (late fee will be imposed)
Tuition Payment Due
Program Adjustment Period (add/drop/change)
Last Day to Register
Last Day to File for May 2013 Graduation
Columbus Day Holiday
Last Day to Withdraw without Academic Penalty
Veterans Day Holiday (observed)
Early Spring 2013 Registration Begins
Thanksgiving Recess Begins
Classes Resume
Classes End
Exam Period
Spring/Summer 2011 Grade Change Deadline
Winter Recess

SPRING SEMESTER 2013

New Student Registration
Continuing Student Early Registration
Continuing Student Regular Registration
Dr. Martin Luther King, Jr. Day (Holiday)
Classes Begin
Late Registration Begins (late fee will be imposed)
Tuition Payment Due
Program Adjustment Period (add/drop/change)
Last Day to Register
Presidents' Day Holiday
Early Summer and Fall 2012 Registration Starts
Last Day to Withdraw without Academic Penalty
Spring Recess
Classes Resume
Classes End
Exam Period
Fall 2012 Grade Change Deadline
Honors Convocation
Commencement

ACADEMIC SESSION I SUMMER 2013

Continuing Student Early Registration
Continuing Student Regular Registration
Classes Begin
Late Registration Begins (late fee will be imposed)
Program Adjustment Period (add, drop, change)
Tuition Payment Due
Last Day to Register
Memorial Day Holiday
Last Day to Withdraw without Academic Penalty
Classes End

ACADEMIC SESSION II SUMMER 2013

Continuing Student Registration
Classes Begin
Late Registration Begins (late fee will be imposed)
Tuition Payment Due
Program Adjustment Period (add, drop, change)
Last Day to Register
Last Day to Withdraw without Academic Penalty
Classes End

Mon., March 12, 2012 through Sat., Sept. 15, 2012
Mon., March 12, 2012 through Fri., August 31
Mon., May 7 through Fri., August 31
Mon., September 3
Tues., September 4, 8 a.m.
Tues., September 4
Tues., September 4
Tues., September 4 through Sat., September 15
Sat., September 15
Fri., October 5
Mon., October 8
Tues., October 23
Mon., November 12
Tues., November 13
Wed., November 21
Mon., November 26, 8 a.m.
Fri., December 13
Fri., December 14 through Fri., December 21
Fri., December 21
Mon., December 24, 2012 through Mon., Jan. 21, 2013

Tues., November 13, 2012 through Sat., Jan. 19, 2013
Tues., November 13 through Fri., December 21, 2012
Wed., January 2, 2013 through Fri., January 11, 2013
Mon., January 21
Tues., January 22, 8 a.m.
Tues., January 22
Tues., January 22
Tues., January 22 to Sat., January 26
Mon., February 4
Mon., February 18
Mon., March 11
Tues., March 12
Mon., March 25 through Sun., March 31
Mon., April 1, 8 a.m.
Tues., April 30
Wed., May 1 through Tues., May 7
Tues., May 7
Thurs., May 9
Sat., May 18

Mon., March 11 through Thurs., May 9
Fri., May 10 through Fri., May 17
Mon., May 20, 8 a.m.
Mon., May 20
Mon., May 20 through Wed., May 22
Mon., May 20
Wed., May 22
Mon., May 27
Mon., June 10
Fri., June 28

Mon., March 11 through Fri., June 28
Mon., July 8, 8 a.m.
Mon., July 8
Mon., July 8
Mon., July 8 through Wed., July 10
Wed., July 10
Fri., July 26
Fri., August 16

AVIATION TRAINING INSTITUTE CALENDAR 2012 – 2013*

* All dates are subject to change. Check the website: www.vaughn.edu

FALL SEMESTER 2012

New Student Registration
Continuing Student Early Registration
Continuing Student Regular Registration
Last Day to Receive 100% Refund from Dropping Class
Labor Day (Holiday)
Classes Begin
Late Registration Begins (late fee will be imposed)
Tuition Payment Due
Program Adjustment Period (add/drop/change)
Last Day to Register
Course Withdrawal Period Begins
Columbus Day Holiday
Last Day to Withdraw without Academic Penalty
Veterans Day Holiday (observed)
Early Spring 2012 Registration Begins
Monday Schedule
Thanksgiving Recess Begins
Classes Resume
Classes End (except where no final is given)
Exam Period
Last Day to Submit Work for "I" for Spring 2013 semester
Winter Recess

Mon., March 12, 2012 through Sat., Sept. 15, 2012
Mon., March 12 through Fri., May 4
Mon., May 7 through Fri., August 31
Fri., Aug. 31
Mon., September 3
Tues., September 4, 8 a.m.
Tues., September 4
Tues., September 4
Tues., September 4 through Tues., September 11
Tues., September 11
Wed., September 12
Mon., October 8
Tues., October 23
Tues., November 12
Tues., November 13
Tues., November 13
Wed., November 21
Mon., November 26, 8 a.m.
Fri., December 13
Fri., December 14 through Thurs., December 21
Fri., December 21
Mon. December 24 through Mon. January 6

SPRING SEMESTER 2013

New Student Registration
Continuing Student Early Registration
Continuing Student Regular Registration
Last Day to Receive 100% Refund from Dropping Class
Classes Begin
Late Registration Begins (late fee will be imposed)
Tuition Payment Due
Program Adjustment Period (add/drop/change)
Last Day to Register
Course Withdrawal Period Begins
Dr. Martin Luther King, Jr. Day (Holiday)
Presidents' Day (Holiday)
Last Day to Withdraw without Academic Penalty
Early Summer and Fall 2012 Registration Starts
Spring Recess
Classes Resume
Classes End (except where no final is given)
Exam Period
Honors Convocation
Commencement

Tues., November 13, 2012 through Sat., Jan. 19, 2013
Tues., November 13 through Fri., Dec. 21, 2012
Wed., January 2 through Sat., January 19, 2013
Fri., January 4
Mon., January 7, 8 a.m.
Mon., January 7
Mon., January 7
Mon., January 7 to Mon., January 14
Mon., January 14
Tues., January 15
Mon., January 21
Mon., February 18
Tues., March 12
Tues., March 12
Mon., March 25 through Sun., March 31
Mon., April 1, 8 a.m.
Tues., April 23
Wed., April 24 through Tues., April 30
Thurs., May 9
Sat., May 18

ATI SESSION I SUMMER 2013

Continuing Student Early Registration
Continuing Student Regular Registration
Last Day to Receive 100% Refund from Dropping Class
Classes Begin
Late Registration Begins (late fee will be imposed)
Tuition Payment Due
Program Adjustment Period (add, drop, change)
Last Day to Register
Memorial Day Holiday
Last Day to Withdraw without Academic Penalty
Classes End

Mon., March 11 through Thurs., May 9
Wed., May 1 through Fri., May 10
Fri., May 10
Mon., May 13, 8 a.m.
Mon., May 13
Mon., May 13
Mon., May 13 through Wed., May 15
Tues., May 14
Mon., May 27
Tues., June 4
Fri., June 28

ATI SESSION II SUMMER 2013

Continuing Student Registration
Last Day to Receive 100% Refund from Dropping Class
Classes Begin
Late Registration Begins (late fee will be imposed)
Program Adjustment Period (add, drop, change)
Tuition Payment Due
Last Day to Register
Last Day to Withdraw without Academic Penalty
Classes End

Mon., March 11 through Fri., June 28
Fri., June 28
Mon., July 8, 8 a.m.
Mon., July 8
Mon., July 8 through Wed., July 10
Mon., July 8
Tues., July 9
Fri., July 26
Fri., Aug. 23

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Certificate

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Endorsement

DIRECTIONS

TO THE VAUGHN COLLEGE CAMPUS

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 web sites: mta.info and 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 E/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 S/New York State Thruway S (partial toll road). Take exit 13S for Palisades Parkway south toward New Jersey. Merge onto Palisades Interstate Parkway S entering New Jersey. Take the exit toward the George Washington Bridge (partial toll road). Merge onto I-95 N/US-1 N 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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