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The following is the anticipated scheduling of graduate course offerings previously described in Appendix B along with similar listings for elective and required undergraduate courses. An **x** in a given semester indicates that the course is to be offered every year. An **e** or an **o** in a given semester means that the course will be offered only in even or odd numbered years respectively. A **?** means the course will be offered on demand. It should be noted that a course will not be offered if there is an insufficient enrollment. (For areas, F&P = Fluids & Propulsion;S& A= Structures & Aeroelasticity, C = Controls;D = Design)

Tentative Schedule of AE Graduate Courses

	Fall	Spring	Summer	Areas
AE 6009 - Viscous Flow	x			F&P
AE 6012 - Turbulent Flow		x		F&P
AE 6020 - High Speed Flow		x		F&P
AE 6030 - Unsteady Aero	x			F&P
AE 6042 - CFD		x		F&P
AE 6050 - Gas Dynamics				F&P
AE 6052 - Flow Diagnostics				F&P
AE 6060 - Aeroacoustics	x			F&P
AE 6070 - Rotary Wing Aero	x	x		F&P
AE 6080 - Turbulence				F&P
AE 6100 - Struc. Stability I		x		S&A
AE 6104 - Computational Mech.				S&A
AE 6200 - Aeroelasticity		x		S&A
AE 6210 - Advanced Dynamics I	x			S&A
AE 6211 - Advanced Dynamics II		x		S&A
AE 6230 - Structural Dynamics	x			S&A
AE 6251 - Experimental Struc. Dyn				S&A
AE 6263 - Flexible Multibody Dyn.				S&A
AE 6270 - Nonlinear Dynamics				S&A
AE 6322 - Space Launch & Veh. Design		x		D
AE 6333 - Rotorcraft Design I	x			D
AE 6334 - Rotorcraft Design II		x		D
AE 6343 - Fixed Wing Design I	x			D
AE 6344 - Fixed Wing Design II		x		D
AE 6353 - Orbital Mech.	x			D
AE 6354 - Adv. Orbital Mech.		x		D
AE 6355 - Planetary Entry		x		D
AE 6361 - Propulsion System Des.		x		D
AE 6362 - Safety by Design			x	D
AE 6372 - Aerospace Systems Engineering	x			D
AE 6373 - Adv. Design Methods I	x			D
AE 6374 - Adv. Design Methods II		x		D
AE 6380 - CAE/CAD				D
AE 6381 - Software Development				D
AE 6382 - Computing Systems for Eng. Research Laboratory				D
AE 6383 - Applied Design Lab				D
AE 6410 - Combustion Dynamics	x			F&P
AE 6412 - Turbulent Combustion				F&P

AE 6440 - Turbine Engine Aerothermodynamics				F&P
AE 6445 - Combustor Fundamentals		x		F&P
AE 6450 - Rocket Propulsion	x			F&P
AE 6451 - Electric Propulsion				C&P
AE 6503 - Helicopter Stab. & Control		x		C
AE 6511 - Optimal Guidance & Control	x			C
AE 6520 - Advanced Flight Dynamics	x			C
AE 6531 - Robust Control I		x		C
AE 6551 - Cognitive Engineering	x			D
AE 6571 -Air Traffic Control and Mgt	x			D
AE 6580 - Nonlinear Control		x		C
AE 6760 - Acoustics I		x		F&P
AE 6761 - Acoustics II	x			F&P
AE 6765 - Kinetics & Thermo of Gas	x			F&P
AE 6766 - Combustion		x		F&P
AE 6769 - Linear Elasticity	x			S&A
AE 6770 - Engergy Methods in Elasticity & Plasticity	x			S&A
AE 6779 - Dyn Sys Sim. & Modeling				C
AE 7772 - Fracture Mechanics				S&A
AE 7774 - Fatigue Matls. & Structures				S&A
AE 7775 - Topics Frac. & Fatigue				S&A
AE 7792 - Adv. Mech. of Composites				S&A
AE 8803 - Multiphase Combustion				F&P
AE 8803 - Plasticity & Viscoelasticity				S&A
AE 8803 - Structural Acoustics				S&A
AE 8803 - Humans & Autonomy				C
AE 8803 - Software Reliability Analysis				C
AE 8803 - Optical Diagnostics for Reacting Flows				F&P
AE 8803 - Advanced Design Methods III				D
AE 8803 - Intro to Space Mission Architecture				D
AE 8803 - Human Contributions to Safety				D

Tentative Schedule of AE Elective Undergraduate Courses

	Credit Hours	Fall	Spring	Summer	Areas
AE4040 - CFD	3				F&P
AE4051 - Flow Diagnostics	3				F&P
AE4060 - Aeroacoustics	3				F&P
AE4070 - Propeller and Rotor Theory	3				F&P
AE4080 - Aerothermodynamics	3				F&P
AE4120 - Composite Structures	3				S&A
AE4131 - Finite Element Methods	3				S&A
AE4170 - Struc Integ. & Durability	3				S&A
AE4310 - Space Flight Mechanics	3				D
AE4375 - CAE/CAD	3				D
AE4461 - Intro to Combustion	3				F&P
AE4521 - Vehicle Guidance & Simulation	3				C
AE4580 - Avionics Integration	3				C
AE4757 - Biofluid Mechanics	3				F&P
AE4758 - Biosolid Mechanics	3				S&A
AE4760 - Eng. Acoustics & Noise Control	3				F&P
AE4791 - Mech. Behavior of Composites	3				S&A
AE4793 - Composite Mat'l & Proc.	3				S&A
AE4794 - Composite Manufact. & Testing	3				S&A
AE4813 - Avionics Unmanned Vehicle	3				C

Tentative Schedule of AE Required Undergraduate Courses

Tentative Schedule of AE Required Undergraduate Courses

	Credit Hours	Fall	Spring	Summer
AE1350 - Intro to AE	2	x	x	
AE2020 - Low Speed Aero	3	x	x	x
AE2220 - Dynamics	3	x	x	x
AE3021 - High Speed Aero	3	x	x	
AE3051 - Exp. Fluid Dyn.	2	x	x	
AE3125 - Aero Structural Analysis	4	x	x	
AE3145 - Structures Lab	1	x	x	
AE3310 - Performance	3	x	x	x
AE3450 - Thermo & Comp. flow	3	x	x	
AE3515 - System Dynamics and Control	4	x	x	
AE3521 - Flight Dynamics	4	x	x	x
AE4220 - Aeroelasticity	3	x	x	
AE4350/4356 - Design I	3	x		
AE4351/4357 - Design II	3		x	
AE4451 - Propulsion	3	x	x	
AE4525 - Feedback Control	2	x	x	
COE2001 - Statics	2	x	x	x
COE3001 - Deformable Bodies	3	x	x	x

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APPENDIX E: List of Courses Satisfying Math Requirements

General:

Any course listed in the Georgia Tech Catalog with a "MATH" designation (i.e., a course offered or cross-listed by the School of Mathematics) that is:

at the 4000 level or higher*, and
not specifically required for the undergraduate AE degree (BSAE),

may be used to satisfy the graduate mathematics requirement. Caution is advised when selecting MATH 4xxx courses because there are restrictions on the total number of hours of 4000-level courses that can be included in MS and PhD degrees in AE. (*MATH 3215 is an acceptable course to satisfy the requirement.)

Special:

The School of Aerospace Engineering has also approved a limited number of other courses that can be used to satisfy the Math requirements in the MS and PhD degree programs. The courses in this list were selected because they primarily introduce mathematical methodology rather than use mathematical techniques to model physical phenomena. The current list of approved courses is provided below.

CS 7530 Randomized Algorithms
ECE 6601 Random Processes (formerly ECE 6050)
ISYE 6413 Design and Analysis of Experiments
ISYE 6414 Regression Analysis
ISYE 6416 Computational Statistics
ISYE 6650 Probabilistic Models
ISYE 6739 Basic Statistical Methods
PHYS 6124 Mathematical Methods of Physics I
PHYS 6125 Mathematical Methods of Physics II
PHYS 6268 Nonlinear Dynamics and Chaos (not with Math 6307)
PUBP 6114 Applied Policy Methods

Other courses may be added to this list when approved by the AE Graduate Committee. Requests to add additional courses to the list should be submitted to the Committee **before** the student signs up for the class.

NOTE:
Courses in applied math or numerical methods offered in individual disciplines will usually not be acceptable. For example, the course, ME 6758 Numerical Methods in Mechanical Engineering, IS NOT approved (a request to approve was rejected by the AE Graduate Committee).

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APPENDIX F: Sample Forms

The following are *some* of the forms you will need to prepare and submit to the AE Academic Office and the Office of Graduate Studies and Research during the course of your graduate program of study in Aerospace Engineering. The forms below are those that must be prepared using a word processor, and in some cases they must be signed by you, your Advisor, and your Advisory Committee members before you submit them to the AE Academic Office. Most of the forms are electronically writable files, but in some cases PDF versions are provided. Other forms you will need to submit, such as the degree petition and program of study, are pre-printed forms on special paper and copies can be obtained from the AE Academic Office or the Office of Graduate Studies and Research.

Please note that a number of different forms must be completed and submitted, including a degree petition, before you have completed all requirements for the degree. It is your responsibility to check with the AE Academic Office and the Office of Graduate Studies and Research to make sure that all forms have been submitted and accepted.

M.S. Forms:

Request for Approval of M.S. Thesis Topic
You must submit this form which includes a short abstract in order to obtain approval to prepare and present a thesis in partial fulfillment fo the requirements for the M.S. degree in Aerospace Engineernig. The authoritative (pdf) version of this form with instructions is available from the Office of Graduate Studies and Research. Please download this form from www.gradadmiss.gatech.edu/thesis/forms.php.
Certificate of Thesis Approval
This form must be signed by your Advisor, your Thesis Advisory Committee, and the School chair before you can submit your M.S. thesis to the Office of Graduate Studies and Research. Please download this form from www.gradadmiss.gatech.edu/thesis/forms.php.
UMI/Library Information Form
This is a special form that you must obtain from and submit to the Office of Graduate Studies and Research along with your M.S. thesis (if you have chosen this degree option). Please download this form from www.gradadmiss.gatech.edu/thesis/forms.php.

Ph.D. Forms:

1. Please click here to fill it out online and save as a file called LastName, FirstName.pdf.
2. Email the file to your advisor
3. Ask your advisor to email the file with his/her approval to tasha.koon@ae.gatech.edu or permits@ae.gatech.edu. A signed copy of the form can also be turned in to the AE Academic Office.
4. **Request to Schedule Ph.D. Qualifying Examination**
5. You and your Advisor must prepare this request and submit it to the AE Graduate Committee during the semester before the scheduled Ph.D. Qualifying Examination you plan to take.
6. **Request for Admission to Ph.D. Candidacy**
7. This form is to be prepared after passing the Ph.D. Qualifying Examination and will make you officially a candidate for the Ph.D. degree. The authoritative (pdf) version of this form with instructions is available from the Office of Graduate Studies and Research. Please download this form from www.gradadmiss.gatech.edu/thesis/forms.php.
8. **Thesis Proposal Presentation**
9. You will need to submit this form along with an announcement to the AE Academic Office at least two weeks before you plan to make your Ph.D. proposal presentation. Here is a MS Word version of the form and a PDF file of a sample announcement.
10. **Thesis Defense**
11. You must submit this form to the AE Academic Office at least two weeks before you plan to present your thesis. Here is a MS Word version of the form and a PDF file of a sample announcement.
12. **UMI/Library Information Form**
13. This is a special form that you must obtain from and submit to the Office of Graduate Studies and Research along with your Ph.D. thesis (if you have chosen this degree option). Please download this form from www.gradadmiss.gatech.edu/thesis/forms.php.
14. **Other Forms for the Office of Graduate Studies and Research**
15. Several additional forms must be completed and submitted to complete your degree requirements. These include: *Commencement Attendance Form*, *UMI/Library Information Form*, *Doctoral Dissertation Agreement Form*, and *Survey of*

Earned Doctorate. Please check with the Office of Graduate Studies and Research for copies of these forms and checklists at www.gradadmiss.gatech.edu/thesis/forms.php.

16. **Waiver of Registration After Thesis Approval**

17. You may be eligible to request a one-time waiver of registration for the semester in which you plan to graduate if you have completed ALL requirements for the Ph.D. degree BEFORE the start of the semester. You will need to prepare this letter to the Dean of Graduate Studies and Research and have it signed by your Advisor and School Chair. Please download this form from www.gradadmiss.gatech.edu/thesis/forms.php.

Other Forms:

MS Program Summary

This is a PDF version of the Program Summary form that is placed in your plastic folder and should be used to chart your progress towards the M.S. degree. Please do not alter the "original" copy in your plastic folder. However, you may want to print this file and keep a copy for your own records.

PhD Program Summary

This is a PDF version of the Program Summary form that is placed in your plastic folder and should be used to chart your progress towards the Ph.D. degree. Please do not alter the "original" copy in your plastic folder. However, you may want to print this file and keep a copy for your own records.

Form List:

Registraton Waiver for Graduation
MS Program Summary
Request for Approval of Thesis Topic
Certificate of Thesis Approval
Request for Qualifying Examination
Request for Admission to Ph.D. Candidacy
PhD Program Summary
Doctoral Minor Form

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Academic Advisement

Every entering aerospace engineering graduate student is assigned to a faculty member, who will be available for academic advisement throughout the student's tenure at Georgia Tech. These assignments are made on the basis of matching the faculty member's technical specialty with the study program interests of the student. The student is expected to consult with the assigned "academic advisor" on such matters as:

Designing a program of study.
Semesterly registration.
Interpretation of academic regulations.
Transfer credit procedures.
General academic problems (grades, withdrawal, etc.).
Any matter which influences academic performance.
Graduation procedures.
Career Planning

In virtually all cases, the "academic advisor" will also be the student's "research advisor."

Registration

During the advisement period for Phase I Registration (typically the 7th week of each semester) the student will consult with the academic advisor before registering. Since all faculty are also required to advise a significant number of undergraduate students during this period, it is strongly recommended that each graduate student make an appointment with his/her advisor.

Students may also register for classes during the first week of the semester (Phase II). However, since lightly populated classes may be cancelled prior to Phase II, students are strongly encouraged to register during Phase I.

After consultation with the advisor, it is the student's responsibility to complete all registration procedures and pay tuition and fees. The registration procedures are completely described online in the "**O**n-line **S**tudent **C**omputer **A**ssisted **R**egistration (**OSCAR**)" information at oscar.gatech.edu. The online OSCAR also includes a listing of all Georgia Tech courses which have been scheduled for the term. More complete course information can be found in the on-line catalog.

Graduation

Early in the semester preceding the term in which the student expects to graduate, a "Petition for Degree" (See Appendix F) must be completed. The Petition for Degree and related materials are available in the AE Academic Office. The completed petition is to be reviewed by the academic advisor in consultation with the student.

The next step is to turn the petition in to the AE Academic Office. The AE Chair's representative will review the petition and, if it is approved, will forward it to the Registrar's Office. The student will receive confirmation of the approved petition and an indication of any additional requirements necessary for graduation by logging on to his/her account at oscar.gatech.edu.

If these procedures have been carried out in a timely fashion as described above, the confirmation should be received by the student prior to the registration period of the seventh week in the semester. This will permit early registration for any additional requirements as noted by the reviewers.

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General Requirements

Although students signed up for 12 credit hourse are considered "full time" by the institute, students in AE should sign up for 21 credit hours. As many of these hours as possible, but no less than 12, must be on a letter grade or pass/fail basis.Students will register for a sufficient number of AE 7000 hours (MS students) or AE 9000 hours (PhD students) to bring thier academic load to the required 21 hours. Part time students, on campus or distance learning, may sign up for as little as 3 hours.

Students with assistantships, fellowships, traineeships, tuition waivers, individual grants and those assigned to the Institute by the armed forces for the purpose of pursuing a degree are required to be enrolled full time (i.e. should be enrolled for 21 hours), even during their graduating term.

Students on F-1 or J-1 visas must be enrolled for 21 hours letter grade or pass/fail, except, under certain circumstances, during their first and last semesters. During summer semesters, students on F-1 or J-1 visas may reduce the number of hours or skip summer semester, although without leaving the country.. For detailed advice or when in doubt please contact the Office of International Education (www.oie.gatech.edu).

Employed Nonassistantship Students

The maximum allowable semester load for students employed by the Institute (other than graduate assistants) is reduced as a function of the number of hours employed per week as follows:

Work Load per Week	Maximum Semester Hour Load
Full time (40 hours)	6
3/4 of full time (30 hours)	9
2/3 of full time (27 hours)	10
1/2 of full time (20 hours) or less	12

Registration Waiver

Graduate students who have completed all of the requirements for their degree, including theses, special problems, projects and removal of incomplete grades by the end of the registration period of the semester in which they are to receive their degree may request a registration waiver for that term.

Students requesting a registration waiver must have been registered in the semester prior to the semester for which a waiver is requested. No Institute facilities or faculty time are to be utilized by the student during the term for which the student receives a waiver.

The student's request for a waiver (See Appendix F) must be signed by the student, and recommended by the student's academic advisor and the School Director or Graduate Coordinator. The completed request letter must be submitted to the Graduate Office by the end of the registration period for the semester in which the registration is to be waived.

Students who have completed all their course work and almost all of their thesis related work and are not supported through Georgia Tech, may register for only 1 hour during this last semester. This exception to the 3 hour minimum rule is granted only once for each student. **Note**: International students must notify the office of International Educationa before they register less than full time.

Dismissal Policy For Graduate Students

Graduate students at both the MS and Ph.D level are expected to carry out research as part of their graduate training. Each student must perform acceptably in his/her research work as evaluated by his/her faculty advisor. A student who does not perform satisfactorily in this area may los his/her research supervision as well as any associated funding, at the discretion of the advisor. This applies eve if the student's GPA meets or exceeds the minimum set by the Institute.

A student in danger of being dismissed by his/her advisor can expect to receive sufficient warning (at least 3 months) in the form of an "Unsatisfactory" as his/her research grade (AE 7000 or AE 9000). In addition, the student can expect to receive a letter or e-mial, with copy to file, outlining the deficiencies and spelling out at what level he/she would have to perform in order to be able to continue working with the advisor. Funding support will normally not be withdrawn in mid-term since this may cause the student to owe the institute out of state tuition for that term.

A student who no longer has an advisor should ask the Associate Chair for Graduate Studies for help in finding new research

supervision. A student who has lost his/her funding may also request at least partial funding from the Associate Chair, for example, as a grader, if such a position is available.

A graduate student who cannot find a new advisor after one full term must leave the School of Aerospace Engineering. The Associate Chair for Graduate Studies may extend this period for one additional term at his/her discretion, under extenuating circumstances or if there is no reason to believe that this will permit the student to find an advisor at Georgia Tech or at another Institution.

A graduate student who is dismissed by the Institute for academic or disciplianary reasons will not normally be readmitted.

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The Graduate Faculty and Staff

Prof. Vigor Yang is the Chair of the School of Aerospace Engineering and oversees all aspects of our undergraduate and graduate program. He is interested in your comments and suggestions for improving the program, and may be reached by appointment at 404-894-3002 (e-mail: vigor.yang@ae.gatech.edu).

Prof. J. Jagoda is the Associate Chair for Graduate Studies and Research. He may be reached at 404-894-3060 (e-mail: jeff.jagoda@ae.gatech.edu). He can answer any question you may have about graduate fellowships and admission into our graduate program, approved programs of study, advisor assignments, and general graduate program questions.

Ms. Tasha Koon at the AE Academic Office handles all the paperwork concerning your studies, and can answer most of your questions about our program. She may be reached at 404-894-6046 (e-mail: tasha.koon@ae.gatech.edu).

Ms. Daurette Joseph can provide information on course offerings and schedules. She also approves degree petitions for the chair. She may be contacted at 404-385-1595 (email: daurette.joseph@ae.gatech.edu)

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This web-based document presents a summary of academic requirements for graduate degrees administered by the School of Aerospace Engineering.

It is intended to be used by the AE graduate student in planning a program of study and in completing the necessary administrative procedures dictated by the degree requirements. Many of the requirements stated herein are in addition to degree requirements described in the Georgia Tech General Catalog, but they are not intended to contradict Institute policies and regulations. The statements set forth in this brochure are for informational purposes only and should not be construed as the basis of a contract between a student and the Institute.

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AE Web Site

The School home page is **http://www.ae.gatech.edu**.

From here you access School publications and newsletters, academic advisement information, course outlines for all required and elective courses, information about student groups and faculty, and other useful information. Prof. Lakshmi Sankar and the AE Computer Support Staff maintain the web page. Please direct to their attention any necessary corrections or revisions that you become aware of, as well as any broken links.

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Prof. Vigor Yang is the Chair of the School of Aerospace Engineering and oversees all aspects of our undergraduate and graduate program. He is interested in your comments and suggestions for improving the program, and may be reached by appointment at 404-894-3002 (e-mail: vigor.yang@ae.gatech.edu).

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Degree Designation

The School of Aerospace Engineering offers two master of science (MS) degrees. The first is the "Master of Science in Aerospace Engineering" degree and is generally referred to as a "designated degree." The second is the "Master of Science" degree which is referred to as an "undesignated degree." The only difference between these two degrees is that the "designated degree" requires that the candidate must have completed all academic course work required for a Bachelor of Science in Aerospace Engineering degree. Refer to Appendix A for the courses required for the Bachelor of Science in Aerospace Engineering degree at Georgia Tech.

Program of Study

Each student enrolled in the Master of Science program will, in conference with the academic advisor, formulate a program of study which satisfies both the technical interests of the student and the degree requirements set forth herein and in the General Catalog. Sample MS degree programs are presented at the end of this section to assist the student in designing a program of study. Appendix B contains descriptions of courses offered by the School of Aerospace Engineering. Appendix C is a listing of the anticipated terms when these courses will be offered. It should be noted that a course may not be offered if there is insufficient demand.

While each program of study can be tailored to the specific interests of the student, it must also satisfy certain minimum coursework requirements in order for the degree to be awarded by the School of Aerospace Engineering. The following table summarizes these requirements for the MS degree. (See below for further discussion of these requirements.)

	MS without Thesis	MS with Thesis
AE class hours (min)	12	9
Research hours (max)	3 (AE8900)	9 (AE7000)
Math (min)	6	6
Non-AE* (max)	12	9
Non-technical** (max)	6	3
Hours at 6000 or above (min)	24	24
TOTAL hours	33	33

** Maximum number of hours taken outside AE, including nontechnical, but excluding Math.*
***Technical courses are any courses in the College of Engineering, College of Science or College of Computing; all other courses are considered nontechnical.*

After the program of study is agreed to by the student and advisor, the courses will be listed on the "MS Program Summary" form (See Appendix F) by the advisor. This form will be retained with the student's other academic records in the AE Academic Office. Each semester, when the student confers with the advisor before registration, the advisor will update this form with the grades obtained and enter any modifications to the program of study. The final approved program of study must be completed within a period of six consecutive calendar years.

At the beginning of the semester preceding the term in which the student expects to graduate, the student will submit his or her Degree Petition to the AE Academic Office with a completed copy of an "Approved Program of Study for the Master's Degree" (See Appendix F). **All courses used to fulfill the course requirements for the degree must be taken on a letter grade basis.**

MS With Thesis

All students enrolled in the Master of Science program must decide sometime during the first semester whether or not a thesis will be submitted in partial fulfillment of the degree requirements. Those students who will be submitting a thesis must complete a minimum of 24 hours of formal course work at the 4000 level or above, which do not include any courses required for the Bachelor of Science in Aerospace Engineering degree at Georgia Tech (see Appendix A). Of these 24 hours of course work, at least 9 must be taken in the School of Aerospace Engineering. Of the remaining hours no more than 3 may be in a non-technical subject as long as the course forms a reasonable part of the program of study. The 24 hours of coursework must include at least 15 credit hours at the 6000 level or above. **All of these minimum credit requirements must be taken on a letter grade basis.**

In addition to the formal course work described above, the student is also required to satisfactorily complete a minimum of 9 credit hours of Master's Thesis (AE 7000) and submit an approved MS thesis to the Office of Graduate Studies and Research.

MS Without Thesis

MS Without Thesis

Those students who will not be submitting a thesis must satisfactorily complete a minimum of 33 credit hours at the 4000 level or above, which do not include any courses required for the Bachelor of Science in Aerospace Engineering degree at Georgia Tech (see Appendix A). Of these 33 hours, at least 12 hours of coursework must be taken in the School of Aerospace Engineering. Of the remaining hours only 6 may be in a non-technical subject as long as these courses form a reasonable part of the program of studies. These 33 hours must include at least 24 credit hours at the 6000 level or above. **All of these minimum credit requirements must be taken on a letter grade basis**.

The MS Without Thesis option must also include 3 research hours (**AE8900, Special Problems in Aerospace Engineering**). This is designed to provide MS students electing this option with an introduction to planning, carrying out, and documenting a research project. Additional hours of AE8900 may be taken but only 3 hours will be allowed in the 33 hour requirement for the degree. In order to pre-register for AE8900, you must complete a request form (see www.ae.gatech.edu/graduate/grad_forms) and have it approved by your advisor before emailing it to a member of the AE Academic Office Staff. In order to receive credit for this course, you must submit a report to your advisor each semester you are registered for any hours. You must then submit a cover sheet showing the letter grade along with a summary or abstract to the AE Academic Office. See Appendix F for the necessary forms.

Mathematics Requirement

Before receiving the Master of Science degree, the student must have completed at least 6 semester hours of mathematics beyond the mathematics requirement for the Bachelor of Science in Aerospace Engineering degree at Georgia Tech.These courses must be at the 4000 level or above (with the exception of Math 3215).These courses must either carry the 'Math' prefix or be selected from the list in Appendix E. The courses in this list were selected because they primarily introduce mathematical methodology rather than use mathematical techniques to model physical phenomena. Additional courses may be added to the list by the AE Graduate Committee. Request for additional courses should be submitted to the Committee **before** the student signs up for the class. If the additional mathematics courses were taken before entering the graduate program at Georgia Tech, and if those courses were not used to satisfy requirements for another degree, then the student may seek transfer credit for those courses. If transfer credit is not possible or not awarded, then the additional mathematics courses may not be included in the program of study. However, subject to recommendation by the advisor and approval by the Associate Chair for Graduate Studies and Research, those courses may still be used to fulfill the six hour mathematics requirement. In this case, the final program of study must satisfy the appropriate degree requirements (minimum of 24 hours or 30 hours of formal course work), but there will be less than six hours of mathematics. **All mathematics courses counting towards the six hour requirement must be completed on a letter grade basis.**

Academic Performance

All students enrolled in the Master of Science program in the School of Aerospace Engineering are required to maintain a grade point average of at least 2.7 in order to be in "good academic standing." This average will be computed for all course work that is eligible to be counted towards the degree. If a student retakes a class, only the most recent grade will be used to compute this GPA for AE purposes. However, the registrar compiles the official GPA using all grades received while a graduate student at Georgia Tech.

A student may be admitted to the Master of Science program on "conditional graduate standing" because of marginal undergraduate grades or an undergraduate degree which does not provide sufficient prerequisite material. Such a student must satisfy certain academic requirements which will be established at the time of matriculation before he/she can transfer to full graduate standing. Students with low undergraduate grade point averages must complete at least 18 credits of graduate course work with a grade point average of at least 2.7 before being recommended for "full graduate standing." Students whose undergraduate background does not sufficiently prepare them for the Master of Science program in their discipline of choice must complete certain undergraduate course work as recommended by their academic advisor and approved by the AE Graduate Coordinator. This course work must be completed with a grade point average of at least 2.7 before the student is recommended for "full graduate standing." Eligible courses taken while on conditional standing carry over and count for credit toward the degree.

Transfer Credit

A student may receive up to six hours of transfer credit for graduate-level courses taken at an accredited institution in the United States or Canada and not used for credit toward another degree. To obtain transfer of credit, the student must confer with the academic advisor to ascertain that the courses to be transferred are a logical part of the student's program of study. If the courses are appropriate, the student must provide a current transcript which verifies completion of the credit, plus necessary descriptive materials including catalog descriptions and textbooks for evaluation of the credit.

A student may not receive transfer credit towards the MS degree from universities outside the United States and Canada. An international student can obtain credit for courses previously taken but not applied toward another degree by passing an appropriate examination. Such students should consult with their advisor in this regard. See Student Rules and Regulations X11.8.

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The following programs of study are presented as samples which a student could follow if interested in the indicated technical specialty. **It is expected that each student, in consultation with the faculty advisor, will formulate an individually tailored program of study which is compatible with the student's research and career interests.**

For students who will be completing a program which includes a thesis, the sample programs to follow should be modified to include a minimum of 12 credits of AE 7000, Master's Thesis. These additional credits will replace both AE 8900, Special Problems in Aerospace Engineering, and other formal courses such that the program of study will include a minimum of 24 credits of formal courses in addition to AE 7000.

It should be noted that the student and his/her advisor have great flexibility in planning a program of studies. Any questions regarding the suitability of a course for an AE program of studies should be addressed to the AE Graduate Committee BEFORE the student registers for the class.

Students on Graduate Research Assistantships are usually limited to three formal courses per term. This limitation typically extends the MS program to sixteen months.

Aerodynamics and Fluid Mechanics

16 months program

FALL	SPRING	SUMMER	FALL
AE 6009	AE 6012	AE 6050	AE 8900
AE 6030/6765	AE 6020/6503/6766	MATH XXXX	AE 6060
AE 6070	AE 6042/6052	MATH XXXX	

Aeroelasticity and Structural Dynamics

16 months program

FALL	SPRING	SUMMER	FALL
AE 6030	AE 6111	ELECTIVE	MATH XXXX
AE 6230	AE 6107	MATH XXXX	AE 8900
AE 6770	AE 6200		ELECTIVE

Flight Mechanics & Controls

16 months program

FALL	SPRING	SUMMER	FALL
AE 6511/6580	AE 6531	ELECTIVE	AE 6210/6520
ECE 6550	ELECTIVE/ MATH XXXX	ELECTIVE/MATH XXXX	AE 6511/6580
AE 6210/6520	MATH XXXX		AE 8900

Propulsion & Combustion

16 months program

FALL	SPRING	SUMMER	FALL
AE 6765	AE 6766	AE 6050	MATH XXXX
AE 6009	AE 6011	AE 6060	AE 6761/6080/6410/6450
MATH XXXX	AE 6760/6440/8803		AE 8900

Structural Mechanics and Materials

16 months program

FALL	SPRING	SUMMER	FALL
AE 6769	AE 6100	AE 6104	MATH XXXX
AE 6770	AE 6200	MATH XXXX	AE 8900
AE 6230	AE 6107	AE 6101	AE 7792

System Design and Optimization

16 months program-SSDL

FALL	SPRING	3RD TERM *	4TH TERM *
AE 6373	AE 6374	AE 6450	AE 8900
AE 6353	AE 6322	MATH XXXX	AE 6354 OR 8803 BRA
AE 6765	AE 6766	MATH XXXX	

16 months program-ASDL

FALL	SPRING	3RD TERM *	4TH TERM *
AE 6373	AE 6374	MATH XXXX	AE 8900
AE 6341	AE 6342	QUALS 3	
AE 6372	QUALS 3		

* Design students often intern during the summer term; therefore, third term may be the Fall semester of the second year.

** Electives may be design or discipline electives. Electives can be used to support subsequent PhD qualifying exams.

*** Design Seminar is a 1 hour Pass/Fail course required of all design students, but P/F hourse do not count toward academic degree requirements.

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Registration

All students who will be completing a Special Problem in partial fulfillment of the MS degree requirements must register for three hours of Special Problems in Aerospace Engineering (AE 8900). These credits are normally taken during the final semester of the program of study. Before the student is permitted to register for AE 8900, the AE Academic Office must receive a statement signed by the academic advisor which briefly describes the topic of the investigation and the number of academic credits to be awarded for completion of this part of the project.

Report Submittal

At the conclusion of the Special Problem research effort, the student will write a Special Problem report which describes the task, the results and the conclusions formed on the basis of these results. The format and content of the report will be specified by the academic advisor. A copy of this report will be retained in the files of the advisor for potential future reference by other students and faculty.

Before a grade for AE 8900 can be accepted by personnel in the AE Academic Office, they must receive one copy of the title page of the Special Problem report. These documents will be retained in the student's academic files. The title page must include the special problem title, names of the student and advisor, the date of completion, the grade received and a one- to three-hundred word abstract briefly describing the effort, results and conclusions of the study.

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Towards the end of the first semester following matriculation, all students who have elected to submit a thesis as part of their MS degree program will select their thesis topic. This decision will be made in conference with the assigned academic advisor. Definition of the thesis topic will include identification of the motivation for the investigation, a scheduling of the scope of work associated with the study, and a statement of the anticipated objectives. The purpose of the thesis is to further the educational development by requiring the student to plan, conduct and report on an organized and systematic study of importance.

Advisory Committee & Proposal

Shortly after the thesis topic has been identified, the student and advisor will select a thesis advisory committee. This committee will include the advisor as the committee chairperson and two others who are well qualified in the subject matter of the thesis. At least two of the committee must be members of the faculty of Georgia Tech's School of Aerospace Engineering. The task of the advisory committee is to advise and direct the student on the scope and execution of the investigation.

Shortly after the committee has been selected, the student must write a brief thesis proposal. This proposal, **which should not exceed 20 pages of text plus figures and tables**, should include the motivation behind the topic selection, the scope of work, preliminary results, and the specific objectives. After an editorial review by the advisor, the proposal will be distributed to the other committee members. No less than two weeks following distribution of the proposal, the student will make a presentation of the proposed study to the advisory committee as a whole. After the committee has approved the proposed effort and has signed the "Request for Approval of Thesis Topic" form (See Appendix F), this form and a copy of the thesis proposal will be submitted to the AE Academic Office for approval by the chair and forwarding to the Office of Graduate Studies and Research. The AE Academic Office should receive the form **at least six months before graduation**.

Final Examination

At the conclusion of the research effort the student will write the thesis by setting forth in a clear and articulate form the results and conclusions of the study. The "Manual for Graduate Theses," available from the Graduate Office, specifies the requirements for the thesis. After the advisor has completed an editorial review of the thesis, copies will be distributed to the remainder of the advisory committee. No less than two weeks after distribution of the thesis, the student, with the approval of the committee, will schedule the "Final Examination."

An announcement of the thesis defense will be distributed to all faculty and graduate students of the School of Aerospace Engineering via e-mail and will be posted by the AE Academic Office on the AE web page at least one week prior to the presentation. The announcement will include the title of the thesis and name of the author as well as the time and location of the presentation.

The Final Examination will consist of a formal presentation of the thesis results and conclusions to the advisory committee and others. Immediately following the presentation and discussion by the general audience, the student will be questioned by members of the committee and any interested members of the academic faculty. This meeting will be used by the committee to ascertain that the

student is well versed in the topic of the thesis and to inform the student of any modifications to the thesis which they require to be made before it is submitted to the graduate office.

Thesis Submittal

After the advisory committee has approved the thesis and signed the "Certificate of Thesis Approval" form (See Appendix F), the Certificate of Thesis Approval must be turned in to the Office of Graduate Studies and Research.The thesis must be submitted electronically via the GT Library-Graduate Studies joint ETD web site at http://etd.gatech.edu . For additional information on how to submit a thesis electronically, visit http://www.grad.gatech.edu/thesis/electronic_submission.html.The graduate office also requires a publishable thesis abstract of up to three hundred words, certified for accuracy by the thesis advisor. Please note that the deadline for submitting a thesis to the Graduate Office is some time prior to the end of the semester in which the student plans to graduate.

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Towards the end of the first semester following matriculation, all students who have elected to submit a thesis as part of their MS degree program will select their thesis topic. This decision will be made in conference with the assigned academic advisor. Definition of the thesis topic will include identification of the motivation for the investigation, a scheduling of the scope of work associated with the study, and a statement of the anticipated objectives. The purpose of the thesis is to further the educational development by requiring the student to plan, conduct and report on an organi

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Registration

All students who will be completing a Special Problem in partial fulfillment of the MS degree requirements must register for three hours of Special Problems in Aerospace Engineering (AE 8900). These credits are normally taken during the final semester of the program of study. Before the student is permitted to register for AE 8900, the AE Academic Office must receive a statement signed by the academic advisor which briefly describes the topic of the investigation and the number of academic credits to be awarded for completion of this part of the project.

Read more

Sample MS Degree Programs

The following programs of study are presented as samples which a student could follow if interested in the indicated technical specialty. **It is expected that each student, in consultation with the faculty advisor, will formulate an individually tailored program of study which is compatible with the student's research and career interests.**

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The academic requirements specify formulation of a Program of Study for each student that must meet the Course Credit Requirements and the Mathematics Requirement. Transfer Credits from prior coursework may also be used. When pursuing the Program of Study, the student must meet an academic performance requirement.

Program of Study

Each student enrolled in the Doctor of Philosophy (PhD) program will, in conference with his/her academic advisor, formulate a program of study which satisfies both the technical interests of the student and the degree requirements set forth herein and in the General Catalog. No sample Ph.D. degree programs are presented in this section. Students entering with a Bachelor's Degree in Aerospace Engineering will generally follow the sample program of the MS degree during their first year. Beyond that point, programs of study should be tailored to the individual need of the students using courses offered by the School of Aerospace Engineering and related courses offered by other Schools at Georgia Tech. Appendix C is a listing of the anticipated terms when many of these courses will be offered. A course will not be offered if there is insufficient demand.

While each program of study can be tailored to the specific interests of the student, it must also satisfy certain minimum coursework requirements set by the School of Aerospace Engineering. The following table summarizes these requirements for the PhD degree. (See below for further discussion of these requirements.)

	Hours
AE classes (min)	19
Math (min)	12
Non-AE* (max)	19
Non-technical** (max)	9
Hours at 6000 or above (min)	41
TOTAL hours	50

** Maximum number of hours taken outside AE, including nontechnical, but excluding Math.*
***Technical courses are any courses in the College of Engineering, College of Science or College of Computing.*

After the program of courses is agreed to by the student and advisor, the courses will be listed on the "Ph.D. Program Summary" form (See Appendix F) by the advisor. This form will be retained with the student's other academic records in the AE Academic Office. Each term, when the student confers with the advisor before registration, the advisor will update this form with the grades obtained and enter any modifications to the program of study.

Course Credit Requirements

All students enrolled in the Doctor of Philosophy program must satisfactorily complete a minimum of 50 hours of formal course work beyond the bachelor's degree. These courses must be at the 4000 level or above and can not include any courses required for the Bachelor of Science in Aerospace Engineering degree at Georgia Tech (See Appendix A). Of these 50 hours at least 19 must be taken in the School of Aerospace Engineering. Of the remaining 31 hours only 9 may be in non-technical areas and only if these courses form a reasonable part of the program of studies. These 50 hours must include at least 41 credit hours at the 6000 level or above. **No Special Problem course credits may be included in the above minimum credit requirements. All of these minimum credit requirements must be taken on a letter grade basis.**

Mathematics Requirement

For the Doctor of Philosophy degree the student must have satisfactorily completed at least 12 credits of mathematics beyond the bachelor's degree. Of these, 9 hours must carry the 'Math' prefix. These are used to satisfy the minor required by the Institute. The remaining 3 hours will either carry the 'Math' prefix or be selected from the list in Appendix E. These courses must be at the 4000 level or above, **with the exception of MATH 3215. None of these minimum credit requirements can be taken on a pass/fail basis.**

Academic Performance

All students enrolled in the Doctor of Philosophy program in the School of Aerospace Engineering are required to maintain a grade point average of at least 3.25 in order to be in good academic standing. This average will be computed for all course work eligible towards the Ph D. degree and taken at Georgia Tech. If a student retakes a class, only the most recent grade will be used to compute this GPA for AE purposes. However, the registrar compiles the official GPA using all grades received while a graduate student at Georgia Tech.

purposes. However, the registrar compiles the official GPA using all grades received while a graduate student at Georgia Tech.

In addition to the overall grade point average of 3.25, the student must maintain at least a 2.8 grade point average in all mathematics courses taken as a graduate student at Georgia Tech.

The student must satisfy the above grade point average requirements in order to take the Ph D. qualifying exam, be admitted to the candidacy, present a thesis proposal or graduate.

Transfer Credit

A student may receive up to thirty semester hours of "AE Transfer Credit" for graduate-level courses taken at an accredited institution anywhere in the world and not used for credit toward an undergraduate degree. To obtain this transfer of credit, the student must confer with the academic advisor to ascertain that the courses to be transferred are a logical part of the student's program of study. If the courses are appropriate, the student must provide a current transcript which verifies completion of the credit, plus necessary descriptive materials including catalog descriptions and textbooks for evaluation of the credit. “AE Transfer Credit” in Mathematics must be approved by the School of Mathematics. A record of the courses accepted for AE Transfer Credit will be made on the "AE Graduate Student Transfer Credit" form (See Appendix F). This record will be retained in the AE Academic Office with the remainder of the student's academic files.This transter credit will NOT appear on the student's transcript.

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Ph.D. Dissertation

Each Ph.D. candidate must carry out original research and describe it in a dissertation. This requires determination of a research topic, selection of a dissertation advisory committee, preparation of a research proposal (oral presentation followed by comprehensive examination), completion of the research and preparation of the dissertation, and lastly, oral presentation followed by final examination (*i.e.*, thesis defense).

All students enrolled in the Ph.D. degree program will determine their topic of research, which will lead to their dissertation, as early as possible. This decision will be made in conference with their academic advisors. The research effort should represent an original and significant contribution in the major field of study. Definition of the research topic will include identification of the motivation for the investigation, a scheduling of the scope of work associated with the study, and a statement of the anticipated objectives. One purpose of the dissertation is to further the educational development by requiring the student to plan, conduct and report on an organized and systematic program of research in the major field of study; the other is to advance fundamental knowledge in the field of aerospace engineering.

Advisory Committee & Proposal

Shortly after the Ph.D. Qualifying Examination has been passed and the research topic has been defined, and no later than one year after passing the qualifier, the student and advisor will select a dissertation "Advisory Committee." This committee will include the advisor as the committee chairperson and two others who are well qualified in the subject matter of the research. At least two members of the committee must be members of the School of Aerospace Engineering Faculty and hold an earned Ph.D. degree. The task of the Advisory Committee is to advise and direct the student on the scope and execution of the research, and the student and the advisor should generate a course of study, including courses and topics for self-study, that will benefit the student's preparation for the thesis research.

The student must write a brief technical report which describes the proposed research effort. This **Research Proposal** should include the motivation behind the topic selection, a brief account of work conducted by others on the topic, the scope of work to be completed, preliminary results, and the specific objectives of the study. The length of this proposal document is typically limited to about 20 pages of text (single-spaced, font 10-point or larger, 1 inch margin) plus tables and figures, and is not to exceed 25 pages excluding citations. After an editorial review by the advisor, the proposal will be distributed to the other committee members.

No less than two weeks following distribution of the proposal, the student will make a presentation of the proposed research effort to the Advisory Committee as a whole, after which the committee will question the student on the proposed research as well as his/her depth in specific technical areas surrounding the research topic as defined in their approved course of study. The total time block should be approximately 2 hours, divided into two parts. The first part is the presentation by the student followed by public questioning and is limited to approximately 40 minutes. The second part is devoted to comprehensive questioning of the student on the proposed research by the Advisory Committee.

This presentation should be made no later than one year after the student has passed the Ph.D. Qualifying Examination. Approval to schedule the presentation is given by the AE Graduate Committee in response to a written request from the advisor. A public announcement with a short abstract (Appendix F) must be submitted to the AE Academic Office at least two weeks prior to the presentation.

Possible outcomes of this comprehensive examination are: Pass, Retake (two retakes are allowed), Fail. Three passes is pass, three fails is fail

After the Advisory Committee has approved the proposed effort, has verified that the student is technically qualified to conduct the effort, and has signed the "Request for Approval of Thesis Topic" form (See Appendix F), this form and a copy of the Research Proposal will be submitted to the AE Academic Office for approval by the Chair and forwarding to the Office of Graduate Studies and Research. At this time the AE Academic Office will also request “Admission to Candidacy” for the student from the Office of Graduate Studies.

Final Examination

At the conclusion of the research effort the student will write the dissertation by setting forth in a clear and articulate form the results and conclusions of the investigation. The "Manual for Graduate Theses," available from the Office of Graduate Students and Research, specifies the requirements for the dissertation.

After the academic advisor has completed an editorial review of the dissertation and have found it to be satisfactory, copies will be distributed to the Thesis Advisory Committee and two others who are well qualified in the subject matter of the research and hold an earned PhD degree. This group of five will constitute the "Final Doctoral Examination Committee." This committee must include at least one but no more than two members from outside the general faculty of School of Aerospace Engineering. Any member of this committee who is not part of the general faculty of the Institute, must be approved by the AE Graduate Committee and the Institute.

The advisor, with consent of the “Final Doctoral Examination Committee”, will submit a written request to the AE Graduate Committee for permission to schedule the "Final Examination” in the form of the memorandum entitled “Final Doctoral Examination Committee and Thesis Presentation” (See Appendix F). This request must be received by the AE Graduate Committee no less than two weeks before the proposed examination date. Futhermore, the members of the “Final Doctoral Examination Committee” must receive copies of the thesis at least 2 weeks before the defense date. The defense must be scheduled at least three days before the thesis due date of the term in which the student is to graduate.

An announcement of the thesis defense must be submitted to the AE Academic Office at least two weeks before the presentation (see Appendix F for suggested formats which must include the title of the thesis, name of the author and the advisor, the time and location of the presentation, and a short abstract). The AE Academic Office will post this announcement on the AE Web Page, will email copies to all faculty and graduate students of the School of Aerospace Engineering, and will post it on the Undergraduate and Graduate Bulletin Boards at least one week prior to the presentation. .

The Final Examination will consist of a formal presentation of the research results and conclusions to Final Examination Committee and others in attendance. Immediately following the presentation and discussion by the general audience the student will be questioned by the committee and any interested members of the general faculty. The Examination Committee will then decide what modifications to the dissertation, if any, they require to be made before it can be submitted to the Office of Graduate Studies and Research.

Dissertation Submittal

After the Final Doctoral Examination Committee has approved the dissertation and signed the "Certificate of Thesis Approval" form (See Appendix F), three copies of the unbound dissertation together with the Certificate of Thesis Approval must be turned in to the Office of Graduate Studies and Research. The graduate office also requires a publishable thesis abstract of up to three hundred words, certified for accuracy by the thesis advisor. These submittals to the graduate office must be made no later than a date specified each term by the graduate office.

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This requirement does not apply to the new exam format that begins fall 2013

Every Ph.D. candidate is required to take at least two AE courses (minimum of 6 credit hours) on a letter grade basis for which graduate credit is admissible in fields outside his/her main area of interest. For this purpose all AE graduate and 4XXX level elective courses are assigned to one of four main areas (See Appendix A and Appendix B): (1) non-reacting / reacting flow, (2) aeroelasticity/ structures, (3) flight mechanics and control, and (4) design. The student must then choose a minimum of 2 courses outside the area in which he/she has taken most of his/her classes. Instructors of Special Topic courses, AE81XX, or new courses must indicate to the AE Graduate Committee the main area(s) with which the course is associated when the course is first offered.

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Qualifying Examination

In order to be accepted into candidacy for the Ph.D. degree, the Aerospace Engineering Ph.D. Qualifying Examination must be successfully completed. The exam is typically offered by the AE faculty two times each year and must be formally scheduled by the student.

Scheduling the Examination

The Ph.D. qualifying examination is offered twice a year, usually in September and March. Approximately three months before the date on which the student wishes to take the qualifying examination, the advisor must recommend to the AE Graduate Committee that the student be permitted to continue in the Ph.D. program and, thus, to register for the exam. This recommendation is made by completing the memorandum form entitled "Recommendation for the Ph D Program" (See Appendix F) and is approved by the AE Graduate Committee. Students are generally expected to take this examination during their second year of full-time graduate study. In order for a graduate student to be permitted to take the PhD Qualifying Examination, the student must have at least a 3.25 grade point average in a minimum of 12 credit hours taken at Georgia Tech which count toward the 50 credit hour requirement.

Administering the Examination

*The student, in consultation with his advisor, will select two examination areas. It should be noted that the general scope of each examination will be based on the enumerated **Primary** courses plus all associated **prerequisite** and **background** material at the graduate and undergraduate level. Every Ph.D. student will take an oral examination in each of the selected areas. Each examination will be administered by three faculty members.*

All degree requirements must be completed within five years from the end of the semester in which the student passes the Ph.D. Qualifying Examination.

Reexaminations

If a student fails the examination, a reexamination will be automatically permitted. This reexamination must be taken the next time the examination is offered. The reexamination will be given in the same two areas as the first examination. A second failure of the examination will result in dismissal from the Ph.D. program.

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Sample Ph.D. Degree Programs

No sample Ph.D. programs are provided.

Most students entering the graduate program with a BS degree will follow a program similar to that outlined in the MS section of this handbook. Students entering the program with an MS will need to tailor their program carefully to their background with the help of their academic advisor. In any case, the student is encouraged to schedule classes related to his/her qualifying examinations, whether similar classes have been taken elsewhere or not.

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Academic Requirements

The academic requirements specify formulation of a Program of Study for each student that must meet the Course Credit Requirements and the Mathematics Requirement. Transfer Credits from prior coursework may also be used. When pursuing the Program of Study, the student must meet an academic performance requirement.

Read more

Qualifying Examination

In order to be accepted into candidacy for the Ph.D. degree, the Aerospace Engineering Ph.D. Qualifying Examination must be successfully completed. The exam is typically offered by the AE faculty two times each year and must be formally scheduled by the student.

Read more

Other Field Requirement

This requirement does not apply to the new exam format that begins fall 2013

Read more

Ph.D. Dissertation

Each Ph.D. candidate must carry out original research and describe it in a dissertation. This requires determination of a research topic, selection of a dissertation advisory committee, preparation of a research proposal (oral presentation followed by comprehensive examination), completion of the research and preparation of the dissertation, and lastly, oral presentation followed by final examination (*i.e.*, thesis defense).

Read more

Sample Ph.D. Degree Programs

No sample Ph.D. programs are provided.

Read more

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This is the Aerospace Engineering Graduate Handbook.

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Constitution and History Examinations

Georgia law requires that before receiving an undergraduate degree in this state, all students must demonstrate competence in United States and Georgia history and constitutional government. (A student may satisfy this requirement by passing two examinations administered by the Department of Social Sciences or by successfully completing HIST 2111, HIST 2112, POL 1101, PUBP 3000 or INTA 1200.) The most up-to-date information can be obtained from the Registrar at this link.

Regents' Test

To obtain an undergraduate degree, each student in the University System of Georgia must demonstrate proficiency in reading and composition in English by passing the Regents' Test. Students are eligible to take the test after they have earned ten hours of course credit. (Any student who has earned 45 credit hours and has yet to pass the Regents' Test must schedule remedial English (English 0012 and/or 0015) in addition to regular course work.) For non-native speakers of English, alternative tests are available through the Department of Modern Languages.

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Sample Eight Semester Curriculum

The undergraduate program may be completed over an eight-semester period, provided the student carefully plans his or her curriculum in consultation with the faculty advisor. Below are links to the sample eight semester curriculum. Your advisor may ask to follow a slightly different curriculum based on your qualifications (e.g. AP or transfer credit) and availability of the course.

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Petition To The Faculty

A "Petition to the Faculty" form may be completed by a student when asking for an exception to an Institute or School rule or policy. The petition is first reviewed by the AE undergraduate Academic Advisory Council, and must be approved by the Associate Chair for Undergraduate Programs before it is forwarded to the Institute Curriculum Committee. Some examples of exceptions include:

To withdraw from school or a course past the deadline
To be readmitted after being placed on DROP status
To be granted an individual course substitution
To be granted full graduate standing

All "Petition to the Faculty" forms must be completed by the student and signed by all appropriate offices. Instructions for completion are printed on the form. These forms should be submitted to the Registrar's Office in Room 101 of the Tech Tower (Administration Building).

These petitions are reviewed and acted upon by the Undergraduate Curriculum Committee. Dates of the committee meetings are published in the OSCAR (registration bulletin) and results are available the following day. Students should submit the "Petition to the Faculty" and any supporting documentation five working days prior to the committee meeting.

Questions regarding the petition process or results from committee meetings can be obtained by telephoning (404) 894-4180 or via e-mail at comments@registrar.gatech.edu.

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With the approval of the student's major school, a GT student may schedule courses at any of the colleges or universities comprising the Atlanta Regional Consortium for Higher Education (ARCHE"), but only IF SUCH COURSES ARE NOT AVAILABLE in a particular term at Georgia Tech.

All registration activities are performed at Georgia Tech and all fees are paid at Georgia Tech. Applications for cross registration and a listing of participating schools are available in the Student Records Office, Room 104 of the Tech Tower (Administration Building). Deadlines for application are printed in the Official School Calendar found in the OSCAR (registration bulletin).

Eligibility

1. Cross registration is available only to degree-seeking juniors, seniors and graduate students.
2. A student must be in GOOD academic standing at the time of application.
3. During the term of cross registration, the student must be enrolled at Georgia Tech for 3 or more credit hours. The maximum number of hours allowed during a term (including cross registered courses) is 21.
4. Credits earned through this program will be handled as transfer credit in that the grades earned WILL NOT be included in the calculation of grade point average. However, the credits earned will be counted as Georgia Tech resident credit toward a degree.

It will be the responsibility of the student to arrange for a transcript to be sent to Georgia Tech from the participating school at the end of the term. Transcripts should be mailed to:

Transfer Credit Evaluation
Office of the Registrar
Georgia Institute of Technology
Atlanta, GA 30332-0315

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GRADE	DESCRIPTION	QUALITY POINTS (per credit hour)
A	Excellent	4
B	Good	3
C	Satisfactory	2
D	Passing	1
F	Failure	0
S	Satisfactory completion of a course taken under pass/fail, or of a course in which no other letter grade may be assigned.	0
U	Unsatisfactory completion of a course taken under pass/fail, or of a course in which no other letter grade may be assigned.	0
V	Audit (no academic achievement implied)	0
I	Incomplete	0
W	Withdrew	0
NR	Not Reported - assigned when an instructor fails to submit grades by the published deadline, through no fault of the student (effective Summer Quarter, 1988).	0

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Academic standing is based on both the **Term** grade point average and the **Overall** average of the student. The minimum Term and Overall grade point average for a student to be on GOOD standing is as follows **:

Class Standing	***Required GPA***
Freshman and JEHPS	1.70
Sophomore	1.80
Junior	1.95
Senior and Special Undergraduate	2.00

***Students on an academic readmission agreement may have additional requirements in order to be on GOOD standing.*

Academic standings in effect at Georgia Tech are as follows:

Academic Standing	***Description***
GOOD	Student is not on academic warning or probation; is maintaining satisfactory academic progress
WARNING	Student's most recent academic performance has been unsatisfactory or the overall average is below the minimum requirement
PROBATION	Student's most recent academic performance has been extremely unsatisfactory or the term average has continued to be unsatisfactory or the overall academic average has continued to be below the minimum requirement
REVIEW	Student who normally would be dropped from the rolls due to academic deficiencies but appears from the record not to have completed the term. Student cannot be enrolled on Review status and should contact the Registrar's Office for further information
DROP/DISMISSAL	Student has been dropped from the rolls due to academic deficiencies. Student may apply for readmission after an absence of one term unless this is second Drop/Dismissal. Students on Drop should seek advisement from their major school regarding future re-admission.

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Only free elective courses may be taken pass/fail. All other curriculum courses must be taken on a credit basis.
NEW: All students registered for any 1000 or 2000 level course will receive a midterm grade for that course. This grade will be either an **S**(atisfactory) or a **U**(nsatisfactory) and will be based on homework, quizzes, tests, etc. While this grade will not directly affect your GPA, it will give you an indication of how well you are doing so that you can take remedial actions as needed. Anyone who receives one or more U grades will be asked to meet with an advisor.
ROTC students may use ROTC courses to satisfy the free elective requirements.
You must earn a grade of C or better in the math or physics courses. A math or physics course with a D or F grade must be repeated during the next semester that the you are in residence.
No more than two D's in required AE & COE courses (with the exception of AE 1350 and AE 1770) are permitted. You will not be allowed to turn in a degree petition unless you have scheduled all the courses required to remove these deficiencies during the graduating semester.

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Required Courses and Pre-Requisites

The required courses in the AE undergraduate program are listed below. The credit hours are shown as (lecture-lab-credit). Any prerequisite courses are shown in parentheses. The course entry is linked to a detailed course description on the home department web page (when available), but otherwise may be a link to the brief description in the General Catalog. Since departmental web pages are frequently restructured, some of these links may be broken.

ENGL 1101: English Composition I (3-0-3)
ENGL 1102: English Composition II (3-0-3)
History 2111 or HIST 2112 or POL 1101 or POL 2101 or INTA 1200 (3-0-3)
Math 1501: Calculus I (3-0-2-4)
Math 1502:Calculus II (3-0-2-4)
Math 2401:Calculus III (3-0-2-4)
Math 2403: Differential equations (3-0-2-4)
Physics 2211: Introductory Physics I (3-3-4)
Physics 2212:Introductory physics II (3-3-4)
CHEM 1310: General Chemistry I (3-3-4)
Science/technical elective: to be selected from the AE-approved list
CS 1371: Computing for Engineers(2-3-3)
ECE 3710: Circuits and Electronics (2-0-2) (Pre-req: Phys2212)
ECE 3741: Instrumentation and Electronics Lab (0-3-1) (Pre-req: ECE3710)
ECON 2100: Economic Analysis and Policy formation (3-0-3) ECON 2105 or ECON 2106 can also be used to satisfy this requirement.
MSE 2001: Principles and Applications of Engineering Materials (3-0-3) (Pre-req: Chem1310)
LCC 3403: Technical Communication* (3-0-3) (Pre-req: ENGL 1102)
AE 1350: Introduction to AE (2-0-2)
CEE/ME 1770: Introduction to Engineering Graphics and Visualization (2-3-3) (Co-req: Math1501)
COE 2001 Statics (2-0-2) (Pre-req: Phys 2211, Math1502)
COE 3001 Deformable Bodies (3-0-3) (Pre-req: AE 2120 or COE 2001, Math 2403)
AE 2020 Low Speed Aerodynamics (3-0-3) (Pre-req: AE1350, Phys2211, Math2401)
AE 2220 Dynamics (3-0-3) (Pre-req: AE2120 or COE 2001, Co-req: Math2403)
AE 3021 High Speed Aerodynamics (3-0-3) (Pre-req: AE2020, AE3450)
AE 3051 Experimental Fluid Dynamics (1-3-2) (Pre-req: AE2020; Co-req: AE3450)
AE 3125 Aerospace Structural Analysis (4-0-4) (Pre-req: COE 3001)
AE 3145 Structures Laboratory (0-3-1) (Pre-req: AE3120 or COE 3001)
AE 3310 Introduction to Aerospace Vehicle Performance (3-0-3) (Pre-req: AE2020, Math2403)

AE 3450 Thermodynamics & Compressible Flow (3-0-3) (Pre-req: Phys2212, Math 2401)
AE 3515 System Dynamics & Control (4-0-4) (Pre-req: AE2220, Math2403)
AE 3521 Aircraft & Spacecraft Flight Dynamics (4-0-4) (Pre-req: AE2020, AE3515)
AE 4220 Structural Dynamics and Aeroelasticity (3-0-3) (Pre-req: AE3122 or 3125, AE3515)
AE 4310 Space Flight Mechanics (3-0-3) (Pre-req: AE 2220; Required co-req for AE 4356)
AE 4350 Aerospace Engineering Design Project I (2-3-3) (Pre-req:AE3310, Co-req: AE 3021, AE3521, AE4451)
AE 4351 Aerospace Engineering Design Project II (2-3-3) (Pre-req: AE4350, AE 3021, AE 3521, AE 4451))
AE 4356 Space Systems Design Project I (2-3-3) (Pre-req: AE 3310, Co-req: AE 4310, AE 4451)
AE 4357 Space Systems Design Project II (2-3-3) (Pre-req: AE 4356, AE 4310, AE 4451)
AE 4358 Rotorcraft Design Project I (2-3-3) (Pre-req: AE 3310, Co-req: CE/ME 1770, CS 1371)
AE 4359 Rotorcraft Design Project II (2-3-3) (Pre-req: AE 4358, AE 3125, AE 3521, MSE 2001)
AE 4451 Jet & Rocket Propulsion (3-0-3) (Pre-req: AE3450)
AE 4525 Control Systems Design Lab (1-3-2) (Co-req: AE3521)
*Name change to LMC 3403 pending. The extra hour from LCC 3403 can be used towards free electives. The Technical Communications requirement can also be met using both LCC 4701 and LCC 4702 (for students pursuing the thesis option) or AE 3801 taken during the same semester as AE 3051 (one addition free elective hour will be required)

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The AE undergraduate program requires that the student complete 132 hours in the following areas:

12 hours of humanities that includes ENGL 1101 (3 hours) and ENGL 1102 (3 hours)
Check here for the current approved list of humanities courses.
12 hours of social sciences that includes a course on history (HIST 2111 or 2112) or political science (POL 1101), or public policy (PUBP 3000) or international affairs (INTA 1200), **and** a course on engineering economics (ECON 2100*).
Check here for the current approved list of social sciences courses.
16 hours of mathematics (Math 1501, 1502, 2401, 2403)
8 hours of physics (Phys 2211, 2212)
4 hours of chemistry (Chem 1310)
3 hours of science/technical elective to be selected from an AE-approved list.
3 hours **each** of computer science (CS 1371), CAD (CEE/ME 1770), and materials science (MSE 2001)
3 hours of electronics & circuit theory, and lab (EE 3710 and EE 3741)
8 hours of aerodynamics (AE 2020, 3021, 3051)
10 hours of statics and structures (COE 2001, 3001 AE, 3125, 3145)
6 hours of dynamics and aeroelasticity (AE 2220, 4220)
6 hours of thermodynamics and propulsion (AE 3450, 4451)
10 hours of flight mechanics and control (AE 3515, 3521, 4525)
11 hours of aerospace performance and design (AE 1350, 3310, 4350, 4351)
2 hours of technical writing (LCC 3403-use extra hour for free elective or {AE 3801 with AE 3051-requires one additional free elective} or {LCC 4701 and LCC 4702})
2 hours of PE (HPS 1040 or HPS 1061 or HPS 1062 or HPS 1063)
10 hours of free electives

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Applying for the Fundamentals of Engineering Exam

The Georgia State Board of Registration offers Georgia Tech students the opportunity to take the Fundamentals of Engineering (FE) exam before they graduate, a privilege not normally afforded to the general public. The exam is given twice a year (October and April). Students who are within two semesters of graduation and want to take the exam must fill out the application before the deadlines established by the Georgia State Board. The applications, available in the Academic Office must contain a recent picture of the applicant, be typed, notarized, and signed by five references. Three of the references must be registered Professional Engineers. Students are encouraged to take this exam in their senior year.

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Statement of Purpose

This web-based handbook is intended to help you plan your undergraduate curriculum. It also contains links to useful information on other learning opportunities such as dual degree programs, certificates, minors, undergraduate research, and internships.

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Undergraduate students, by filing the required form, will be permitted one unrestricted transfer between majors (including undecided) until they have accumulated credit for sixty hours. After sixty hours or upon subsequent request for transfer, the transfer will be permitted at the discretion of the school that the student is seeking to enter. Students who transfer from another institution to pursue a degree at Georgia Tech will be permited to change their major only at the discretion of the school that the student is seeking to enter. Transfer students are not eligible for the one unrestricted change of major.

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Readmissions

A student, who for any reason has remained out of school more than two semesters, must apply for readmission. **To apply, a completed Application for Readmission must be submitted to the Office of the Registrar, prior to the deadlines listed in the catalog** It is the responsibility of the student to allow sufficient time for the readmission process to be completed. In cases requiring an interview, the Institute deadlines may be too late. Please note that the School of Aerospace Engineering can only ***recommend*** a course of action; the final decision is made by the Institute's Undergraduate Curriculum Committee.

Voluntary Withdrawal after Completion of Semester

Students who are on ***good standing*** or ***warning*** status may apply for readmission in any subsequent semester and expect positive action by the Registrar's Office.

Students who are on ***probation*** must arrange for an interview with Prof. Lakshmi Sankar to discuss their application for readmission. A positive recommendation will normally be given if there is a clear indication that the problems that led to the student's poor standing have been, or are being, rectified.

Voluntary Withdrawal with all "W" Grades

Students who withdraw during a semester and receive all "W" grades will **not** be allowed to re-enter the semester following withdrawal. In addition, a letter explaining how the problems that led to the withdrawal have been resolved must accompany the application for readmission. As in the previous case, those students on probation at the time of withdrawal must schedule an interview with Prof. Lakshmi Sankar. Meet with Dr. Sankar before withdrawing completely to discuss the best course of action.

Dropped for Unsatisfactory Scholarship

Students who have been dropped for unsatisfactory scholarship will not normally be readmitted. They should consider educational alternatives.

If readmission is recommended by the School, the student will be asked to sign a contract which will include a program of study and a minimum grade point average which will assure a GPA of 2.0 at the end of the period covered by the contract. (Contracts typically run for three semesters, but may be extended if the student takes fewer than 12 hours per semester.) Failure to meet any part of the contract will result in the student's dismissal from the Institute with the understanding that no attempt will be made to seek further readmission to the School of Aerospace Engineering.

Section VIII, B.6 of the Student Rules and Regulations states: "A student who is dropped a second time for unsatisfactory scholarship will not be readmitted to the Institute."

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Transfer Credit

Course work taken at another institution may be considered for transfer credit if (a) it was passed with a grade of C or better and (b) it is not a substitute for a course previously failed at Georgia Tech. Transfer credit is granted by one of two means. For most lower division courses the Admissions Office or the Registrar, upon review of a transcript, will automatically give credit for courses taken at other institutions. Otherwise the ***student*** must convince an instructor in the appropriate department at Tech that the non-resident course is equivalent to a course here. If you are seeking transfer credit by such means, bring all relevant materials (syllabi, textbook, catalog description, copies of exams, homework, etc.) to the instructor of the similar Georgia Tech course, and ask that a Non-Resident Credit Form be completed and submitted to the Registrar. You should check at a later date to make sure the form did indeed reach the Registrar.

Transfer credit appears as the initial entry on a student's transcript. Where credit is granted for a course that has content identical to a Georgia Tech course, the Tech course number will be listed. If the credit is for a course that does not exactly match a Tech course in content or hours, the listing will be in a generic form, such as Math 3xxx.

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Degree Petitions

In order to graduate, students must petition for a degree. You can obtain the Degree Petition in the AE Academic Office. This petition must be completed the semester prior to the semester of graduation. It must be reviewed and signed by the Undergraduate Advisor or Associate Chair for Undergraduate Studies. Completed petitions must be submitted to the Academic Office by the **Drop day (see the registrar's calendar for due dates). Students are *strongly* encouraged to turn in degree petitions early, so that the petition can be reviewed in time to resolve any deficiencies in their program during the Drop/Add period of their final semester.**

Please watch your e-mail for any notices concerning the status of your degree petition.

If you **do not** graduate in the semester for which you filed, then submit a reactivation petition when ready to graduate. They may be submitted to the Academic Office for review and forwarding to the Registrar no later than the end of the first week of classes of your final semester.

You may review your program at any time by logging into OSCAR and running a CAPP report.
Co-ops and International Plan students should obtain the appropriate signature.

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Prior to the regisration period an e-mail would be sent to all the AE students from the AE Academic Office reminding them of the academic advisement. The students must contact their academic advisor and make an appointment to see the advisor. (see OSCAR or the AE Academic Advisement pages). **A hold is placed on all AE students with a GPA below 2.5 that will prevent them from registering without advisement**.
At the appointed time, the advisor will go over your current semester schedule of classes, and recommend courses that must be taken during the next semester, taking into consideration your co-op status, if necessary. The advisor will, at your request, project a three- or four-semester schedule that you need to follow to graduate on time.
You should register for the courses during early registration period (highly recommended). Access to registration is by time ticket only. Use the web student access system to check your time ticket, registration holds, and other pertinent data. Late registration, drops and adds may be made during late registration. The OSCAR (On-Line Student Computer Assisted Registration) gives details on registering using the web student access system or the voice mail system.
Verify and print out the term schedule on the web student access system. **Verification is critical** as students are responsible for all courses remaining on their term schedule at the end of late registration.
Watch your GT e-mail for communications from the Registrar and the School of AE concerning any last minute changes or cancellations.

Problems

Restricted or Graduate Courses:
To register for restricted courses or graduate courses you must ask the appropriate department to enter the permit on-line.
Overloads of Closed Sections:
To register for a section of a course that has closed, you should go to the school or department offering the course and request an on-line permit. For AE courses, please sbumit your request using OSCAR.
Time Conflicts:
To register for two classes that are scheduled at the same time, you must obtain verification from one of the instructors that the conflict will not affect your ability to complete the course successfully. The instructor should email this verification to permits@ae.gatech.edu.
Registration Holds:
If your Time Ticket indicates a hold on registration, check the OSCAR for an interpretation of the hold and instructions for its clearance.

Course Meeting Places

Each school and department posts a list of meeting places for the classes it offers. For AE classes, this list will be posted on the bulletin board outside the Academic Office the day before the start of classes. For other schools and departments, check the OSCAR. Times and meeting places will also be listed on the OSCAR web site (oscar.gatech.edu).

Cross Registration

Students who would like to take courses not offered at Georgia Tech can do so through the cross registration program administered through the University Center in Georgia. If you are interested, contact the Registrar's Office at Tech.

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Professional and Honor Societies

Several professional aeerospace engineering societies, including one honorary group, have student chapters at Georgia Tech. These organizations offer students a unique opportunity to learn about the many facets of aerospace engineering, and they also provide valuable service to the School. You are strongly encouraged to participate in one or more of these groups.

Student Organizations:

Student Advisory Council
The Aerospace Engineering Student Advisory Council is composed of students and provides input to the Chair on matters affecting the School.

American Institute of Aeronautics and Astronautics
The AIAA is the professional society for aerospace and other types of engineers worldwide.

American Helicopter Society
The AHS is the professional society for those interested in rotorcraft.

Sigma Gamma Tau
The Honor Society for Aerospace Engineers.

Yellow Jacket Flying Club
This is a student run club for current pilots and those who are interested in learning to fly.

Tau Beta Pi
Highest Engineering Honor - Engineering students who show superior scholar-ship and leadership as well as integrity and breadth of interest, both inside and outside of engineering, are recognized by Tau Beta Pi. Undergraduate students who rank in the top eighth of their junior class are considered for membership.

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The Office of Success Programs offers a free tutorial service. One-on-one tutoring in calculus, physics and chemistry is available to all students. For information, visit www.success.gatech.edu.

OMED (Office of Minority Educational Development) offers a **free tutorial service available to ALL undergraduates.** Tutoring is available in mathematics, science and many engineering courses. Tutoring sessions are in the Library. For information, call 894-3959.

The School of Mathematics provides a walk-in tutoring service in the Math Lab for any Tech student in a freshman level mathematics course. The Math Lab is located in room 257 of the Skiles Building. The hours are posted each semester.

If you need preparation for the Regents' Examination, the English Department offers courses (ENGL. 0012 and 0015) and a workshop to improve reading and writing skills. Freshman English courses also include a unit on the Examination.

Students having academic and/or personal problems may also seek assistance from the Student Counseling and Career Planning Center. Each semester, the center offers workshops to help Tech students succeed academically, professionally, and personally. Typical programs include life and career exploration, study skills, intercultural studies, stress and anxiety reduction, assertiveness training, and depression and motivational problems. Their telephone number is 894-2575.

Students are also invited to make use of the Center's computerized Systematic Interactive Guidance and Information system (SIGI) for assistance in determining career interests and aptitude and the Computer Assisted Study Skills Instruction (CASSI) for improving study skills. The center also offers personal counseling to assist students in dealing with personal, motivational, or study problems. Counselors are available for individual sessions by appointment. To make an appointment, call 894-2575.

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Cooperative Degree Program

Students who maintain the necessary high academic scholarship may participate in the five-year cooperative program and receive the degree Bachelor of Science in Aerospace Engineering, Cooperative Plan. Students interested in more information about the co-op program or in applying for admission to the cooperative plan should contact the Cooperative Division Office.

While on work semesters, students in the co-op program may receive academic advice by contacting their AE Advisor (go to the AE web page faculty listing or the APPOINTMENT SCHEDULER). It is important for cooperative students to check periodically with the AE Academic Office (Knight 312) to make sure they are aware of revisions in AE course schedules or curriculum.

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Second Undergraduate Degree

The Second Undergraduate Degree option is available for students who have received an undergraduate degree in another discipline at Georgia Tech or from some other school. To earn a BSAE degree, the student must satisfy all of the requirements of the Aerospace Engineering program including a minimum of 36 semester hours in excess of the requirements for the previous degree.

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Dual Degree Program

The Dual Degree program was established to allow students to combine a typical liberal arts program with the technological curriculum offered by Georgia Tech. Under this program, a student attends a liberal arts college for three years and then comes to Georgia Tech for two years. Upon completion of the program, the student receives both a bachelor of arts or science degree from the liberal arts college and a bachelor's of science degree in an engineering or science field from Georgia Tech. Participating in this program are most of the colleges and universities of the University System of Georgia, the Atlanta University Center colleges, and other selected colleges and universities from around the nation.

Although Dual Degree students do not formally transfer their credit upon matriculation at Georgia Tech, they are considered as transfer students and must satisfy ***all*** of the requirements of the BSAE program. During the registration period for the first semester of residence at Tech, the Dual Degree student should meet with Dr. Lakshmi Sankar to arrange the initial semester's schedule. Dr. Sankar will evaluate the transcript for compatibility with Georgia Tech Aerospace Engineering Program and recommend a Program of Study.

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AE Web Site

The School home page is **http://www.ae.gatech.edu**.

From here you access School publications and newsletters, academic advisement information, course outlines for all required and elective courses, information about student groups and faculty, and other useful information. Prof. Lakshmi Sankar and the AE Computer Support Staff maintain the web page. Please direct to their attention any necessary corrections or revisions that you become aware of, as well as any broken links.

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Although students signed up for 12 credit hourse are considered "full time" by the institute, students in AE should sign up for 21 credit hours. As many of these hours as possible, but no less than 12, must be on a letter grade or pass/fail basis.Students will register for a sufficient number of AE 7000 hours (MS students) or AE 9000 hours (PhD students) to bring thier academic load to the required 21 hours. Part time students, on campus or distance learning, may sign up for as little as 3 hours.

Students with assistantships, fellowships, traineeships, tuition waivers, individual grants and those assigned to the Institute by the armed forces for the purpose of pursuing a degree are required to be enrolled full time (i.e. should be enrolled for 21 hours), even during their graduating term.

Students on F-1 or J-1 visas must be enrolled for 21 hours letter grade or pass/fail, except, under certain circumstances, during their first and last semesters. During summer semesters, students on F-1 or J-1 visas may reduce the number of hours or skip summer semester, although without leaving the country.. For detailed advice or when in doubt please contact the Office of International Education (www.oie.gatech.edu).

Employed Nonassistantship Students

The maximum allowable semester load for students employed by the Institute (other than graduate assistants) is reduced as a function of the number of hours employed per week as follows:

Work Load per Week	Maximum Semester Hour Load
Full time (40 hours)	6
3/4 of full time (30 hours)	9
2/3 of full time (27 hours)	10
1/2 of full time (20 hours) or less	12

Registration Waiver

Graduate students who have completed all of the requirements for their degree, including theses, special problems, projects and removal of incomplete grades by the end of the registration period of the semester in which they are to receive their degree may request a registration waiver for that term.

Students requesting a registration waiver must have been registered in the semester prior to the semester for which a waiver is requested. No Institute facilities or faculty time are to be utilized by the student during the term for which the student receives a waiver.

The student's request for a waiver (See Appendix F) must be signed by the student, and recommended by the student's academic advisor and the School Director or Graduate Coordinator. The completed request letter must be submitted to the Graduate Office by the end of the registration period for the semester in which the registration is to be waived.

Students who have completed all their course work and almost all of their thesis related work and are not supported through Georgia Tech, may register for only 1 hour during this last semester. This exception to the 3 hour minimum rule is granted only once for each student. **Note**: International students must notify the office of International Educationa before they register less than full time.

Dismissal Policy For Graduate Students

Graduate students at both the MS and Ph.D level are expected to carry out research as part of their graduate training. Each student must perform acceptably in his/her research work as evaluated by his/her faculty advisor. A student who does not perform satisfactorily in this area may los his/her research supervision as well as any associated funding, at the discretion of the advisor. This applies eve if the student's GPA meets or exceeds the minimum set by the Institute.

A student in danger of being dismissed by his/her advisor can expect to receive sufficient warning (at least 3 months) in the form of an "Unsatisfactory" as his/her research grade (AE 7000 or AE 9000). In addition, the student can expect to receive a letter or e-mial, with copy to file, outlining the deficiencies and spelling out at what level he/she would have to perform in order to be able to continue working with the advisor. Funding support will normally not be withdrawn in mid-term since this may cause the student to owe the institute out of state tuition for that term.

A student who no longer has an advisor should ask the Associate Chair for Graduate Studies for help in finding new research

supervision. A student who has lost his/her funding may also request at least partial funding from the Associate Chair, for example, as a grader, if such a position is available.

A graduate student who cannot find a new advisor after one full term must leave the School of Aerospace Engineering. The Associate Chair for Graduate Studies may extend this period for one additional term at his/her discretion, under extenuating circumstances or if there is no reason to believe that this will permit the student to find an advisor at Georgia Tech or at another Institution.

A graduate student who is dismissed by the Institute for academic or disciplianary reasons will not normally be readmitted.

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Academic Advisement

Every entering aerospace engineering graduate student is assigned to a faculty member, who will be available for academic advisement throughout the student's tenure at Georgia Tech. These assignments are made on the basis of matching the faculty member's technical specialty with the study program interests of the student. The student is expected to consult with the assigned "academic advisor" on such matters as:

Designing a program of study.
Semesterly registration.
Interpretation of academic regulations.
Transfer credit procedures.
General academic problems (grades, withdrawal, etc.).
Any matter which influences academic performance.
Graduation procedures.
Career Planning

In virtually all cases, the "academic advisor" will also be the student's "research advisor."

Registration

During the advisement period for Phase I Registration (typically the 7th week of each semester) the student will consult with the academic advisor before registering. Since all faculty are also required to advise a significant number of undergraduate students during this period, it is strongly recommended that each graduate student make an appointment with his/her advisor.

Students may also register for classes during the first week of the semester (Phase II). However, since lightly populated classes may be cancelled prior to Phase II, students are strongly encouraged to register during Phase I.

After consultation with the advisor, it is the student's responsibility to complete all registration procedures and pay tuition and fees. The registration procedures are completely described online in the "**O**n-line **S**tudent **C**omputer **A**ssisted **R**egistration (**OSCAR**)" information at oscar.gatech.edu. The online OSCAR also includes a listing of all Georgia Tech courses which have been scheduled for the term. More complete course information can be found in the on-line catalog.

Graduation

Early in the semester preceding the term in which the student expects to graduate, a "Petition for Degree" (See Appendix F) must be completed. The Petition for Degree and related materials are available in the AE Academic Office. The completed petition is to be reviewed by the academic advisor in consultation with the student.

The next step is to turn the petition in to the AE Academic Office. The AE Chair's representative will review the petition and, if it is approved, will forward it to the Registrar's Office. The student will receive confirmation of the approved petition and an indication of any additional requirements necessary for graduation by logging on to his/her account at oscar.gatech.edu.

If these procedures have been carried out in a timely fashion as described above, the confirmation should be received by the student prior to the registration period of the seventh week in the semester. This will permit early registration for any additional requirements as noted by the reviewers.

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The Graduate Faculty and Staff

Prof. Vigor Yang is the Chair of the School of Aerospace Engineering and oversees all aspects of our undergraduate and graduate program. He is interested in your comments and suggestions for improving the program, and may be reached by appointment at 404-894-3002 (e-mail: vigor.yang@ae.gatech.edu).

Prof. J. Jagoda is the Associate Chair for Graduate Studies and Research. He may be reached at 404-894-3060 (e-mail: jeff.jagoda@ae.gatech.edu). He can answer any question you may have about graduate fellowships and admission into our graduate program, approved programs of study, advisor assignments, and general graduate program questions.

Ms. Tasha Koon at the AE Academic Office handles all the paperwork concerning your studies, and can answer most of your questions about our program. She may be reached at 404-894-6046 (e-mail: tasha.koon@ae.gatech.edu).

Ms. Daurette Joseph can provide information on course offerings and schedules. She also approves degree petitions for the chair. She may be contacted at 404-385-1595 (email: daurette.joseph@ae.gatech.edu)

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Foreward

This web-based document presents a summary of academic requirements for graduate degrees administered by the School of Aerospace Engineering.

It is intended to be used by the AE graduate student in planning a program of study and in completing the necessary administrative procedures dictated by the degree requirements. Many of the requirements stated herein are in addition to degree requirements described in the Georgia Tech General Catalog, but they are not intended to contradict Institute policies and regulations. The statements set forth in this brochure are for informational purposes only and should not be construed as the basis of a contract between a student and the Institute.

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The following programs of study are presented as samples which a student could follow if interested in the indicated technical specialty. **It is expected that each student, in consultation with the faculty advisor, will formulate an individually tailored program of study which is compatible with the student's research and career interests.**

For students who will be completing a program which includes a thesis, the sample programs to follow should be modified to include a minimum of 12 credits of AE 7000, Master's Thesis. These additional credits will replace both AE 8900, Special Problems in Aerospace Engineering, and other formal courses such that the program of study will include a minimum of 24 credits of formal courses in addition to AE 7000.

It should be noted that the student and his/her advisor have great flexibility in planning a program of studies. Any questions regarding the suitability of a course for an AE program of studies should be addressed to the AE Graduate Committee BEFORE the student registers for the class.

Students on Graduate Research Assistantships are usually limited to three formal courses per term. This limitation typically extends the MS program to sixteen months.

Aerodynamics and Fluid Mechanics

16 months program

FALL	SPRING	SUMMER	FALL
AE 6009	AE 6012	AE 6050	AE 8900
AE 6030/6765	AE 6020/6503/6766	MATH XXXX	AE 6060
AE 6070	AE 6042/6052	MATH XXXX	

Aeroelasticity and Structural Dynamics

16 months program

FALL	SPRING	SUMMER	FALL
AE 6030	AE 6111	ELECTIVE	MATH XXXX
AE 6230	AE 6107	MATH XXXX	AE 8900
AE 6770	AE 6200		ELECTIVE

Flight Mechanics & Controls

16 months program

FALL	SPRING	SUMMER	FALL
AE 6511/6580	AE 6531	ELECTIVE	AE 6210/6520
ECE 6550	ELECTIVE/ MATH XXXX	ELECTIVE/MATH XXXX	AE 6511/6580
AE 6210/6520	MATH XXXX		AE 8900

Propulsion & Combustion

16 months program

FALL	SPRING	SUMMER	FALL
AE 6765	AE 6766	AE 6050	MATH XXXX
AE 6009	AE 6011	AE 6060	AE 6761/6080/6410/6450
MATH XXXX	AE 6760/6440/8803		AE 8900

Structural Mechanics and Materials

16 months program

FALL	SPRING	SUMMER	FALL
AE 6769	AE 6100	AE 6104	MATH XXXX
AE 6770	AE 6200	MATH XXXX	AE 8900
AE 6230	AE 6107	AE 6101	AE 7792

System Design and Optimization

16 months program-SSDL

FALL	SPRING	3RD TERM *	4TH TERM *
AE 6373	AE 6374	AE 6450	AE 8900
AE 6353	AE 6322	MATH XXXX	AE 6354 OR 8803 BRA
AE 6765	AE 6766	MATH XXXX	

16 months program-ASDL

FALL	SPRING	3RD TERM *	4TH TERM *
AE 6373	AE 6374	MATH XXXX	AE 8900
AE 6341	AE 6342	QUALS 3	
AE 6372	QUALS 3		

* Design students often intern during the summer term; therefore, third term may be the Fall semester of the second year.

** Electives may be design or discipline electives. Electives can be used to support subsequent PhD qualifying exams.

*** Design Seminar is a 1 hour Pass/Fail course required of all design students, but P/F hourse do not count toward academic degree requirements.

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MS Special Problem

Registration

All students who will be completing a Special Problem in partial fulfillment of the MS degree requirements must register for three hours of Special Problems in Aerospace Engineering (AE 8900). These credits are normally taken during the final semester of the program of study. Before the student is permitted to register for AE 8900, the AE Academic Office must receive a statement signed by the academic advisor which briefly describes the topic of the investigation and the number of academic credits to be awarded for completion of this part of the project.

Report Submittal

At the conclusion of the Special Problem research effort, the student will write a Special Problem report which describes the task, the results and the conclusions formed on the basis of these results. The format and content of the report will be specified by the academic advisor. A copy of this report will be retained in the files of the advisor for potential future reference by other students and faculty.

Before a grade for AE 8900 can be accepted by personnel in the AE Academic Office, they must receive one copy of the title page of the Special Problem report. These documents will be retained in the student's academic files. The title page must include the special problem title, names of the student and advisor, the date of completion, the grade received and a one- to three-hundred word abstract briefly describing the effort, results and conclusions of the study.

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Prof. Vigor Yang is the Chair of the School of Aerospace Engineering and oversees all aspects of our undergraduate and graduate program. He is interested in your comments and suggestions for improving the program, and may be reached by appointment at 404-894-3002 (or e-mail: vigor.yang@ae.gatech.edu).

Prof. J. Jagoda is the Associate Chair and oversees graduate studies and research. He may be reached at 404-894-3060 (e-mail: jjagoda@ae.gatech.edu). He can answer any question you may have about undergraduate research opportunities, undergraduate internships, graduate fellowships and admission into our graduate program.

Prof. Lakshmi N. Sankar handles curricular information (course outlines, content) as well as class scheduling, and he serves as the AE Undergraduate Program Coordinator. He may be reached at 404-894-3014 (e-mail: lsankar@ae.gatech.edu). The Academic Advisory Council, chaired by Prof. Sankar, reviews your petitions and makes final recommendations. He is also your point of contact for submitting petitions to the faculty, requesting waiver of the School or Institute rules.

Ms. Daurette Joseph is the departmental Academic Advisor, available to assist all AE students. She assigns your academic advisor, assists in scheduling classes, manages overloads and permits, and processes your degree petitions. Her office is Knight 309 which is on the same floor as the AE Academic Office. She may be reached at 404-385-1595 (e-mail: daurette.joseph@ae.gatech.edu).

Prof. Lakshmi Sankar is in charge of the Undergraduate Computing Laboratory and the School of AE web site at http://www.ae.gatech.edu . He may be reached at 404-894-3014 (e-mail: lakshmi.sankar@ae.gatech.edu).

Miss Rebekah Trout at the AE Academic Office handles all the paperwork concerning your studies, and can answer most of your questions about our program. She may be reached at 404-894-3001 (e-mail: rebekah.trout@ae.gatech.edu).

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Towards the end of the first semester following matriculation, all students who have elected to submit a thesis as part of their MS degree program will select their thesis topic. This decision will be made in conference with the assigned academic advisor. Definition of the thesis topic will include identification of the motivation for the investigation, a scheduling of the scope of work associated with the study, and a statement of the anticipated objectives. The purpose of the thesis is to further the educational development by requiring the student to plan, conduct and report on an organized and systematic study of importance.

Advisory Committee & Proposal

Shortly after the thesis topic has been identified, the student and advisor will select a thesis advisory committee. This committee will include the advisor as the committee chairperson and two others who are well qualified in the subject matter of the thesis. At least two of the committee must be members of the faculty of Georgia Tech's School of Aerospace Engineering. The task of the advisory committee is to advise and direct the student on the scope and execution of the investigation.

Shortly after the committee has been selected, the student must write a brief thesis proposal. This proposal, **which should not exceed 20 pages of text plus figures and tables**, should include the motivation behind the topic selection, the scope of work, preliminary results, and the specific objectives. After an editorial review by the advisor, the proposal will be distributed to the other committee members. No less than two weeks following distribution of the proposal, the student will make a presentation of the proposed study to the advisory committee as a whole. After the committee has approved the proposed effort and has signed the "Request for Approval of Thesis Topic" form (See Appendix F), this form and a copy of the thesis proposal will be submitted to the AE Academic Office for approval by the chair and forwarding to the Office of Graduate Studies and Research. The AE Academic Office should receive the form **at least six months before graduation**.

Final Examination

At the conclusion of the research effort the student will write the thesis by setting forth in a clear and articulate form the results and conclusions of the study. The "Manual for Graduate Theses," available from the Graduate Office, specifies the requirements for the thesis. After the advisor has completed an editorial review of the thesis, copies will be distributed to the remainder of the advisory committee. No less than two weeks after distribution of the thesis, the student, with the approval of the committee, will schedule the "Final Examination."

An announcement of the thesis defense will be distributed to all faculty and graduate students of the School of Aerospace Engineering via e-mail and will be posted by the AE Academic Office on the AE web page at least one week prior to the presentation. The announcement will include the title of the thesis and name of the author as well as the time and location of the presentation.

The Final Examination will consist of a formal presentation of the thesis results and conclusions to the advisory committee and others. Immediately following the presentation and discussion by the general audience, the student will be questioned by members of the committee and any interested members of the academic faculty. This meeting will be used by the committee to ascertain that the

student is well versed in the topic of the thesis and to inform the student of any modifications to the thesis which they require to be made before it is submitted to the graduate office.

Thesis Submittal

After the advisory committee has approved the thesis and signed the "Certificate of Thesis Approval" form (See Appendix F), the Certificate of Thesis Approval must be turned in to the Office of Graduate Studies and Research.The thesis must be submitted electronically via the GT Library-Graduate Studies joint ETD web site at http://etd.gatech.edu . For additional information on how to submit a thesis electronically, visit http://www.grad.gatech.edu/thesis/electronic_submission.html.The graduate office also requires a publishable thesis abstract of up to three hundred words, certified for accuracy by the thesis advisor. Please note that the deadline for submitting a thesis to the Graduate Office is some time prior to the end of the semester in which the student plans to graduate.

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Degree Designation

The School of Aerospace Engineering offers two master of science (MS) degrees. The first is the "Master of Science in Aerospace Engineering" degree and is generally referred to as a "designated degree." The second is the "Master of Science" degree which is referred to as an "undesignated degree." The only difference between these two degrees is that the "designated degree" requires that the candidate must have completed all academic course work required for a Bachelor of Science in Aerospace Engineering degree. Refer to Appendix A for the courses required for the Bachelor of Science in Aerospace Engineering degree at Georgia Tech.

Program of Study

Each student enrolled in the Master of Science program will, in conference with the academic advisor, formulate a program of study which satisfies both the technical interests of the student and the degree requirements set forth herein and in the General Catalog. Sample MS degree programs are presented at the end of this section to assist the student in designing a program of study. Appendix B contains descriptions of courses offered by the School of Aerospace Engineering. Appendix C is a listing of the anticipated terms when these courses will be offered. It should be noted that a course may not be offered if there is insufficient demand.

While each program of study can be tailored to the specific interests of the student, it must also satisfy certain minimum coursework requirements in order for the degree to be awarded by the School of Aerospace Engineering. The following table summarizes these requirements for the MS degree. (See below for further discussion of these requirements.)

	MS without Thesis	MS with Thesis
AE class hours (min)	12	9
Research hours (max)	3 (AE8900)	9 (AE7000)
Math (min)	6	6
Non-AE* (max)	12	9
Non-technical** (max)	6	3
Hours at 6000 or above (min)	24	24
TOTAL hours	33	33

** Maximum number of hours taken outside AE, including nontechnical, but excluding Math.*
***Technical courses are any courses in the College of Engineering, College of Science or College of Computing; all other courses are considered nontechnical.*

After the program of study is agreed to by the student and advisor, the courses will be listed on the "MS Program Summary" form (See Appendix F) by the advisor. This form will be retained with the student's other academic records in the AE Academic Office. Each semester, when the student confers with the advisor before registration, the advisor will update this form with the grades obtained and enter any modifications to the program of study. The final approved program of study must be completed within a period of six consecutive calendar years.

At the beginning of the semester preceding the term in which the student expects to graduate, the student will submit his or her Degree Petition to the AE Academic Office with a completed copy of an "Approved Program of Study for the Master's Degree" (See Appendix F). **All courses used to fulfill the course requirements for the degree must be taken on a letter grade basis.**

MS With Thesis

All students enrolled in the Master of Science program must decide sometime during the first semester whether or not a thesis will be submitted in partial fulfillment of the degree requirements. Those students who will be submitting a thesis must complete a minimum of 24 hours of formal course work at the 4000 level or above, which do not include any courses required for the Bachelor of Science in Aerospace Engineering degree at Georgia Tech (see Appendix A). Of these 24 hours of course work, at least 9 must be taken in the School of Aerospace Engineering. Of the remaining hours no more than 3 may be in a non-technical subject as long as the course forms a reasonable part of the program of study. The 24 hours of coursework must include at least 15 credit hours at the 6000 level or above. **All of these minimum credit requirements must be taken on a letter grade basis.**

In addition to the formal course work described above, the student is also required to satisfactorily complete a minimum of 9 credit hours of Master's Thesis (AE 7000) and submit an approved MS thesis to the Office of Graduate Studies and Research.

MS Without Thesis

MS Without Thesis

Those students who will not be submitting a thesis must satisfactorily complete a minimum of 33 credit hours at the 4000 level or above, which do not include any courses required for the Bachelor of Science in Aerospace Engineering degree at Georgia Tech (see Appendix A). Of these 33 hours, at least 12 hours of coursework must be taken in the School of Aerospace Engineering. Of the remaining hours only 6 may be in a non-technical subject as long as these courses form a reasonable part of the program of studies. These 33 hours must include at least 24 credit hours at the 6000 level or above. **All of these minimum credit requirements must be taken on a letter grade basis**.

The MS Without Thesis option must also include 3 research hours (**AE8900, Special Problems in Aerospace Engineering**). This is designed to provide MS students electing this option with an introduction to planning, carrying out, and documenting a research project. Additional hours of AE8900 may be taken but only 3 hours will be allowed in the 33 hour requirement for the degree. In order to pre-register for AE8900, you must complete a request form (see www.ae.gatech.edu/graduate/grad_forms) and have it approved by your advisor before emailing it to a member of the AE Academic Office Staff. In order to receive credit for this course, you must submit a report to your advisor each semester you are registered for any hours. You must then submit a cover sheet showing the letter grade along with a summary or abstract to the AE Academic Office. See Appendix F for the necessary forms.

Mathematics Requirement

Before receiving the Master of Science degree, the student must have completed at least 6 semester hours of mathematics beyond the mathematics requirement for the Bachelor of Science in Aerospace Engineering degree at Georgia Tech.These courses must be at the 4000 level or above (with the exception of Math 3215).These courses must either carry the 'Math' prefix or be selected from the list in Appendix E. The courses in this list were selected because they primarily introduce mathematical methodology rather than use mathematical techniques to model physical phenomena. Additional courses may be added to the list by the AE Graduate Committee. Request for additional courses should be submitted to the Committee **before** the student signs up for the class. If the additional mathematics courses were taken before entering the graduate program at Georgia Tech, and if those courses were not used to satisfy requirements for another degree, then the student may seek transfer credit for those courses. If transfer credit is not possible or not awarded, then the additional mathematics courses may not be included in the program of study. However, subject to recommendation by the advisor and approval by the Associate Chair for Graduate Studies and Research, those courses may still be used to fulfill the six hour mathematics requirement. In this case, the final program of study must satisfy the appropriate degree requirements (minimum of 24 hours or 30 hours of formal course work), but there will be less than six hours of mathematics. **All mathematics courses counting towards the six hour requirement must be completed on a letter grade basis.**

Academic Performance

All students enrolled in the Master of Science program in the School of Aerospace Engineering are required to maintain a grade point average of at least 2.7 in order to be in "good academic standing." This average will be computed for all course work that is eligible to be counted towards the degree. If a student retakes a class, only the most recent grade will be used to compute this GPA for AE purposes. However, the registrar compiles the official GPA using all grades received while a graduate student at Georgia Tech.

A student may be admitted to the Master of Science program on "conditional graduate standing" because of marginal undergraduate grades or an undergraduate degree which does not provide sufficient prerequisite material. Such a student must satisfy certain academic requirements which will be established at the time of matriculation before he/she can transfer to full graduate standing. Students with low undergraduate grade point averages must complete at least 18 credits of graduate course work with a grade point average of at least 2.7 before being recommended for "full graduate standing." Students whose undergraduate background does not sufficiently prepare them for the Master of Science program in their discipline of choice must complete certain undergraduate course work as recommended by their academic advisor and approved by the AE Graduate Coordinator. This course work must be completed with a grade point average of at least 2.7 before the student is recommended for "full graduate standing." Eligible courses taken while on conditional standing carry over and count for credit toward the degree.

Transfer Credit

A student may receive up to six hours of transfer credit for graduate-level courses taken at an accredited institution in the United States or Canada and not used for credit toward another degree. To obtain transfer of credit, the student must confer with the academic advisor to ascertain that the courses to be transferred are a logical part of the student's program of study. If the courses are appropriate, the student must provide a current transcript which verifies completion of the credit, plus necessary descriptive materials including catalog descriptions and textbooks for evaluation of the credit.

A student may not receive transfer credit towards the MS degree from universities outside the United States and Canada. An international student can obtain credit for courses previously taken but not applied toward another degree by passing an appropriate examination. Such students should consult with their advisor in this regard. See Student Rules and Regulations X11.8.

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Sample Ph.D. Degree Programs

No sample Ph.D. programs are provided.

Most students entering the graduate program with a BS degree will follow a program similar to that outlined in the MS section of this handbook. Students entering the program with an MS will need to tailor their program carefully to their background with the help of their academic advisor. In any case, the student is encouraged to schedule classes related to his/her qualifying examinations, whether similar classes have been taken elsewhere or not.

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Ph.D. Dissertation

Each Ph.D. candidate must carry out original research and describe it in a dissertation. This requires determination of a research topic, selection of a dissertation advisory committee, preparation of a research proposal (oral presentation followed by comprehensive examination), completion of the research and preparation of the dissertation, and lastly, oral presentation followed by final examination (*i.e.*, thesis defense).

All students enrolled in the Ph.D. degree program will determine their topic of research, which will lead to their dissertation, as early as possible. This decision will be made in conference with their academic advisors. The research effort should represent an original and significant contribution in the major field of study. Definition of the research topic will include identification of the motivation for the investigation, a scheduling of the scope of work associated with the study, and a statement of the anticipated objectives. One purpose of the dissertation is to further the educational development by requiring the student to plan, conduct and report on an organized and systematic program of research in the major field of study; the other is to advance fundamental knowledge in the field of aerospace engineering.

Advisory Committee & Proposal

Shortly after the Ph.D. Qualifying Examination has been passed and the research topic has been defined, and no later than one year after passing the qualifier, the student and advisor will select a dissertation "Advisory Committee." This committee will include the advisor as the committee chairperson and two others who are well qualified in the subject matter of the research. At least two members of the committee must be members of the School of Aerospace Engineering Faculty and hold an earned Ph.D. degree. The task of the Advisory Committee is to advise and direct the student on the scope and execution of the research, and the student and the advisor should generate a course of study, including courses and topics for self-study, that will benefit the student's preparation for the thesis research.

The student must write a brief technical report which describes the proposed research effort. This **Research Proposal** should include the motivation behind the topic selection, a brief account of work conducted by others on the topic, the scope of work to be completed, preliminary results, and the specific objectives of the study. The length of this proposal document is typically limited to about 20 pages of text (single-spaced, font 10-point or larger, 1 inch margin) plus tables and figures, and is not to exceed 25 pages excluding citations. After an editorial review by the advisor, the proposal will be distributed to the other committee members.

No less than two weeks following distribution of the proposal, the student will make a presentation of the proposed research effort to the Advisory Committee as a whole, after which the committee will question the student on the proposed research as well as his/her depth in specific technical areas surrounding the research topic as defined in their approved course of study. The total time block should be approximately 2 hours, divided into two parts. The first part is the presentation by the student followed by public questioning and is limited to approximately 40 minutes. The second part is devoted to comprehensive questioning of the student on the proposed research by the Advisory Committee.

This presentation should be made no later than one year after the student has passed the Ph.D. Qualifying Examination. Approval to schedule the presentation is given by the AE Graduate Committee in response to a written request from the advisor. A public announcement with a short abstract (Appendix F) must be submitted to the AE Academic Office at least two weeks prior to the presentation.

Possible outcomes of this comprehensive examination are: Pass, Retake (two retakes are allowed), Fail. Three passes is pass, three fails is fail

After the Advisory Committee has approved the proposed effort, has verified that the student is technically qualified to conduct the effort, and has signed the "Request for Approval of Thesis Topic" form (See Appendix F), this form and a copy of the Research Proposal will be submitted to the AE Academic Office for approval by the Chair and forwarding to the Office of Graduate Studies and Research. At this time the AE Academic Office will also request “Admission to Candidacy” for the student from the Office of Graduate Studies.

Final Examination

At the conclusion of the research effort the student will write the dissertation by setting forth in a clear and articulate form the results and conclusions of the investigation. The "Manual for Graduate Theses," available from the Office of Graduate Students and Research, specifies the requirements for the dissertation.

After the academic advisor has completed an editorial review of the dissertation and have found it to be satisfactory, copies will be distributed to the Thesis Advisory Committee and two others who are well qualified in the subject matter of the research and hold an earned PhD degree. This group of five will constitute the "Final Doctoral Examination Committee." This committee must include at least one but no more than two members from outside the general faculty of School of Aerospace Engineering. Any member of this committee who is not part of the general faculty of the Institute, must be approved by the AE Graduate Committee and the Institute.

The advisor, with consent of the “Final Doctoral Examination Committee”, will submit a written request to the AE Graduate Committee for permission to schedule the "Final Examination” in the form of the memorandum entitled “Final Doctoral Examination Committee and Thesis Presentation” (See Appendix F). This request must be received by the AE Graduate Committee no less than two weeks before the proposed examination date. Futhermore, the members of the “Final Doctoral Examination Committee” must receive copies of the thesis at least 2 weeks before the defense date. The defense must be scheduled at least three days before the thesis due date of the term in which the student is to graduate.

An announcement of the thesis defense must be submitted to the AE Academic Office at least two weeks before the presentation (see Appendix F for suggested formats which must include the title of the thesis, name of the author and the advisor, the time and location of the presentation, and a short abstract). The AE Academic Office will post this announcement on the AE Web Page, will email copies to all faculty and graduate students of the School of Aerospace Engineering, and will post it on the Undergraduate and Graduate Bulletin Boards at least one week prior to the presentation. .

The Final Examination will consist of a formal presentation of the research results and conclusions to Final Examination Committee and others in attendance. Immediately following the presentation and discussion by the general audience the student will be questioned by the committee and any interested members of the general faculty. The Examination Committee will then decide what modifications to the dissertation, if any, they require to be made before it can be submitted to the Office of Graduate Studies and Research.

Dissertation Submittal

After the Final Doctoral Examination Committee has approved the dissertation and signed the "Certificate of Thesis Approval" form (See Appendix F), three copies of the unbound dissertation together with the Certificate of Thesis Approval must be turned in to the Office of Graduate Studies and Research. The graduate office also requires a publishable thesis abstract of up to three hundred words, certified for accuracy by the thesis advisor. These submittals to the graduate office must be made no later than a date specified each term by the graduate office.

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Other Field Requirement

This requirement does not apply to the new exam format that begins fall 2013

Every Ph.D. candidate is required to take at least two AE courses (minimum of 6 credit hours) on a letter grade basis for which graduate credit is admissible in fields outside his/her main area of interest. For this purpose all AE graduate and 4XXX level elective courses are assigned to one of four main areas (See Appendix A and Appendix B): (1) non-reacting / reacting flow, (2) aeroelasticity/ structures, (3) flight mechanics and control, and (4) design. The student must then choose a minimum of 2 courses outside the area in which he/she has taken most of his/her classes. Instructors of Special Topic courses, AE81XX, or new courses must indicate to the AE Graduate Committee the main area(s) with which the course is associated when the course is first offered.

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Qualifying Examination

In order to be accepted into candidacy for the Ph.D. degree, the Aerospace Engineering Ph.D. Qualifying Examination must be successfully completed. The exam is typically offered by the AE faculty two times each year and must be formally scheduled by the student.

Scheduling the Examination

The Ph.D. qualifying examination is offered twice a year, usually in September and March. Approximately three months before the date on which the student wishes to take the qualifying examination, the advisor must recommend to the AE Graduate Committee that the student be permitted to continue in the Ph.D. program and, thus, to register for the exam. This recommendation is made by completing the memorandum form entitled "Recommendation for the Ph D Program" (See Appendix F) and is approved by the AE Graduate Committee. Students are generally expected to take this examination during their second year of full-time graduate study. In order for a graduate student to be permitted to take the PhD Qualifying Examination, the student must have at least a 3.25 grade point average in a minimum of 12 credit hours taken at Georgia Tech which count toward the 50 credit hour requirement.

Administering the Examination

*The student, in consultation with his advisor, will select two examination areas. It should be noted that the general scope of each examination will be based on the enumerated **Primary** courses plus all associated **prerequisite** and **background** material at the graduate and undergraduate level. Every Ph.D. student will take an oral examination in each of the selected areas. Each examination will be administered by three faculty members.*

All degree requirements must be completed within five years from the end of the semester in which the student passes the Ph.D. Qualifying Examination.

Reexaminations

If a student fails the examination, a reexamination will be automatically permitted. This reexamination must be taken the next time the examination is offered. The reexamination will be given in the same two areas as the first examination. A second failure of the examination will result in dismissal from the Ph.D. program.

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Academic Requirements

The academic requirements specify formulation of a Program of Study for each student that must meet the Course Credit Requirements and the Mathematics Requirement. Transfer Credits from prior coursework may also be used. When pursuing the Program of Study, the student must meet an academic performance requirement.

Program of Study

Each student enrolled in the Doctor of Philosophy (PhD) program will, in conference with his/her academic advisor, formulate a program of study which satisfies both the technical interests of the student and the degree requirements set forth herein and in the General Catalog. No sample Ph.D. degree programs are presented in this section. Students entering with a Bachelor's Degree in Aerospace Engineering will generally follow the sample program of the MS degree during their first year. Beyond that point, programs of study should be tailored to the individual need of the students using courses offered by the School of Aerospace Engineering and related courses offered by other Schools at Georgia Tech. Appendix C is a listing of the anticipated terms when many of these courses will be offered. A course will not be offered if there is insufficient demand.

While each program of study can be tailored to the specific interests of the student, it must also satisfy certain minimum coursework requirements set by the School of Aerospace Engineering. The following table summarizes these requirements for the PhD degree. (See below for further discussion of these requirements.)

	Hours
AE classes (min)	19
Math (min)	12
Non-AE* (max)	19
Non-technical** (max)	9
Hours at 6000 or above (min)	41
TOTAL hours	50

** Maximum number of hours taken outside AE, including nontechnical, but excluding Math.*
***Technical courses are any courses in the College of Engineering, College of Science or College of Computing.*

After the program of courses is agreed to by the student and advisor, the courses will be listed on the "Ph.D. Program Summary" form (See Appendix F) by the advisor. This form will be retained with the student's other academic records in the AE Academic Office. Each term, when the student confers with the advisor before registration, the advisor will update this form with the grades obtained and enter any modifications to the program of study.

Course Credit Requirements

All students enrolled in the Doctor of Philosophy program must satisfactorily complete a minimum of 50 hours of formal course work beyond the bachelor's degree. These courses must be at the 4000 level or above and can not include any courses required for the Bachelor of Science in Aerospace Engineering degree at Georgia Tech (See Appendix A). Of these 50 hours at least 19 must be taken in the School of Aerospace Engineering. Of the remaining 31 hours only 9 may be in non-technical areas and only if these courses form a reasonable part of the program of studies. These 50 hours must include at least 41 credit hours at the 6000 level or above. **No Special Problem course credits may be included in the above minimum credit requirements. All of these minimum credit requirements must be taken on a letter grade basis.**

Mathematics Requirement

For the Doctor of Philosophy degree the student must have satisfactorily completed at least 12 credits of mathematics beyond the bachelor's degree. Of these, 9 hours must carry the 'Math' prefix. These are used to satisfy the minor required by the Institute. The remaining 3 hours will either carry the 'Math' prefix or be selected from the list in Appendix E. These courses must be at the 4000 level or above, **with the exception of MATH 3215. None of these minimum credit requirements can be taken on a pass/fail basis.**

Academic Performance

All students enrolled in the Doctor of Philosophy program in the School of Aerospace Engineering are required to maintain a grade point average of at least 3.25 in order to be in good academic standing. This average will be computed for all course work eligible towards the Ph D. degree and taken at Georgia Tech. If a student retakes a class, only the most recent grade will be used to compute this GPA for AE purposes. However, the registrar compiles the official GPA using all grades received while a graduate student at Georgia Tech.

purposes. However, the registrar compiles the official GPA using all grades received while a graduate student at Georgia Tech.

In addition to the overall grade point average of 3.25, the student must maintain at least a 2.8 grade point average in all mathematics courses taken as a graduate student at Georgia Tech.

The student must satisfy the above grade point average requirements in order to take the Ph D. qualifying exam, be admitted to the candidacy, present a thesis proposal or graduate.

Transfer Credit

A student may receive up to thirty semester hours of "AE Transfer Credit" for graduate-level courses taken at an accredited institution anywhere in the world and not used for credit toward an undergraduate degree. To obtain this transfer of credit, the student must confer with the academic advisor to ascertain that the courses to be transferred are a logical part of the student's program of study. If the courses are appropriate, the student must provide a current transcript which verifies completion of the credit, plus necessary descriptive materials including catalog descriptions and textbooks for evaluation of the credit. “AE Transfer Credit” in Mathematics must be approved by the School of Mathematics. A record of the courses accepted for AE Transfer Credit will be made on the "AE Graduate Student Transfer Credit" form (See Appendix F). This record will be retained in the AE Academic Office with the remainder of the student's academic files.This transter credit will NOT appear on the student's transcript.

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APPENDIX F: Sample Forms

The following are *some* of the forms you will need to prepare and submit to the AE Academic Office and the Office of Graduate Studies and Research during the course of your graduate program of study in Aerospace Engineering. The forms below are those that must be prepared using a word processor, and in some cases they must be signed by you, your Advisor, and your Advisory Committee members before you submit them to the AE Academic Office. Most of the forms are electronically writable files, but in some cases PDF versions are provided. Other forms you will need to submit, such as the degree petition and program of study, are pre-printed forms on special paper and copies can be obtained from the AE Academic Office or the Office of Graduate Studies and Research.

Please note that a number of different forms must be completed and submitted, including a degree petition, before you have completed all requirements for the degree. It is your responsibility to check with the AE Academic Office and the Office of Graduate Studies and Research to make sure that all forms have been submitted and accepted.

M.S. Forms:

Request for Approval of M.S. Thesis Topic
You must submit this form which includes a short abstract in order to obtain approval to prepare and present a thesis in partial fulfillment fo the requirements for the M.S. degree in Aerospace Engineernig. The authoritative (pdf) version of this form with instructions is available from the Office of Graduate Studies and Research. Please download this form from www.gradadmiss.gatech.edu/thesis/forms.php.
Certificate of Thesis Approval
This form must be signed by your Advisor, your Thesis Advisory Committee, and the School chair before you can submit your M.S. thesis to the Office of Graduate Studies and Research. Please download this form from www.gradadmiss.gatech.edu/thesis/forms.php.
UMI/Library Information Form
This is a special form that you must obtain from and submit to the Office of Graduate Studies and Research along with your M.S. thesis (if you have chosen this degree option). Please download this form from www.gradadmiss.gatech.edu/thesis/forms.php.

Ph.D. Forms:

1. Please click here to fill it out online and save as a file called LastName, FirstName.pdf.
2. Email the file to your advisor
3. Ask your advisor to email the file with his/her approval to tasha.koon@ae.gatech.edu or permits@ae.gatech.edu. A signed copy of the form can also be turned in to the AE Academic Office.
4. **Request to Schedule Ph.D. Qualifying Examination**
5. You and your Advisor must prepare this request and submit it to the AE Graduate Committee during the semester before the scheduled Ph.D. Qualifying Examination you plan to take.
6. **Request for Admission to Ph.D. Candidacy**
7. This form is to be prepared after passing the Ph.D. Qualifying Examination and will make you officially a candidate for the Ph.D. degree. The authoritative (pdf) version of this form with instructions is available from the Office of Graduate Studies and Research. Please download this form from www.gradadmiss.gatech.edu/thesis/forms.php.
8. **Thesis Proposal Presentation**
9. You will need to submit this form along with an announcement to the AE Academic Office at least two weeks before you plan to make your Ph.D. proposal presentation. Here is a MS Word version of the form and a PDF file of a sample announcement.
10. **Thesis Defense**
11. You must submit this form to the AE Academic Office at least two weeks before you plan to present your thesis. Here is a MS Word version of the form and a PDF file of a sample announcement.
12. **UMI/Library Information Form**
13. This is a special form that you must obtain from and submit to the Office of Graduate Studies and Research along with your Ph.D. thesis (if you have chosen this degree option). Please download this form from www.gradadmiss.gatech.edu/thesis/forms.php.
14. **Other Forms for the Office of Graduate Studies and Research**
15. Several additional forms must be completed and submitted to complete your degree requirements. These include: *Commencement Attendance Form*, *UMI/Library Information Form*, *Doctoral Dissertation Agreement Form*, and *Survey of*

Earned Doctorate. Please check with the Office of Graduate Studies and Research for copies of these forms and checklists at www.gradadmiss.gatech.edu/thesis/forms.php.

16. **Waiver of Registration After Thesis Approval**

17. You may be eligible to request a one-time waiver of registration for the semester in which you plan to graduate if you have completed ALL requirements for the Ph.D. degree BEFORE the start of the semester. You will need to prepare this letter to the Dean of Graduate Studies and Research and have it signed by your Advisor and School Chair. Please download this form from www.gradadmiss.gatech.edu/thesis/forms.php.

Other Forms:

MS Program Summary

This is a PDF version of the Program Summary form that is placed in your plastic folder and should be used to chart your progress towards the M.S. degree. Please do not alter the "original" copy in your plastic folder. However, you may want to print this file and keep a copy for your own records.

PhD Program Summary

This is a PDF version of the Program Summary form that is placed in your plastic folder and should be used to chart your progress towards the Ph.D. degree. Please do not alter the "original" copy in your plastic folder. However, you may want to print this file and keep a copy for your own records.

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APPENDIX E: List of Courses Satisfying Math Requirements

General:

Any course listed in the Georgia Tech Catalog with a "MATH" designation (i.e., a course offered or cross-listed by the School of Mathematics) that is:

at the 4000 level or higher*, and
not specifically required for the undergraduate AE degree (BSAE),

may be used to satisfy the graduate mathematics requirement. Caution is advised when selecting MATH 4xxx courses because there are restrictions on the total number of hours of 4000-level courses that can be included in MS and PhD degrees in AE. (*MATH 3215 is an acceptable course to satisfy the requirement.)

Special:

The School of Aerospace Engineering has also approved a limited number of other courses that can be used to satisfy the Math requirements in the MS and PhD degree programs. The courses in this list were selected because they primarily introduce mathematical methodology rather than use mathematical techniques to model physical phenomena. The current list of approved courses is provided below.

CS 7530 Randomized Algorithms
ECE 6601 Random Processes (formerly ECE 6050)
ISYE 6413 Design and Analysis of Experiments
ISYE 6414 Regression Analysis
ISYE 6416 Computational Statistics
ISYE 6650 Probabilistic Models
ISYE 6739 Basic Statistical Methods
PHYS 6124 Mathematical Methods of Physics I
PHYS 6125 Mathematical Methods of Physics II
PHYS 6268 Nonlinear Dynamics and Chaos (not with Math 6307)
PUBP 6114 Applied Policy Methods

Other courses may be added to this list when approved by the AE Graduate Committee. Requests to add additional courses to the list should be submitted to the Committee **before** the student signs up for the class.

NOTE:
Courses in applied math or numerical methods offered in individual disciplines will usually not be acceptable. For example, the course, ME 6758 Numerical Methods in Mechanical Engineering, IS NOT approved (a request to approve was rejected by the AE Graduate Committee).

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The student, in consultation with his/her advisor, will select two examination areas. It should be noted that the general scope of each examination will be based on the enumerated **primary** courses plus all associated **prerequisite** and **background** material at the graduate and undergraduate level

Examination areas can be found **here**.

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Educational Objectives

The AE faculty, in consultation with employers, government agencies, professional societies (American Institute of Aeronautics and Astronautics, American Helicopter Society) and alumni, has established certain fundamental educational objectives. Since aerospace engineering is a dynamic and rapidly changing field, these objectives are periodically reviewed and updated as appropriate.

To provide students with a comprehensive education that includes in-depth instruction in aerodynamics, aircraft and spacecraft structures, flight mechanics, orbital mechanics, flight propulsion, and design of aerospace systems.
To prepare students for careers in AE by emphasizing analysis and problem solving; exposure to open-ended problems and design issues including manufacturing, maintenance and fostering teamwork; communications skills; and individual professionalism.
To provide adequate research and independent study opportunities that cultivate lifelong learning skills and nourish creative talents.

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The following is the anticipated scheduling of graduate course offerings previously described in Appendix B along with similar listings for elective and required undergraduate courses. An **x** in a given semester indicates that the course is to be offered every year. An **e** or an **o** in a given semester means that the course will be offered only in even or odd numbered years respectively. A **?** means the course will be offered on demand. It should be noted that a course will not be offered if there is an insufficient enrollment. (For areas, F&P = Fluids & Propulsion;S& A= Structures & Aeroelasticity, C = Controls;D = Design)

Tentative Schedule of AE Graduate Courses

	Fall	Spring	Summer	Areas
AE 6009 - Viscous Flow	x			F&P
AE 6012 - Turbulent Flow		x		F&P
AE 6020 - High Speed Flow		x		F&P
AE 6030 - Unsteady Aero	x			F&P
AE 6042 - CFD		x		F&P
AE 6050 - Gas Dynamics				F&P
AE 6052 - Flow Diagnostics				F&P
AE 6060 - Aeroacoustics	x			F&P
AE 6070 - Rotary Wing Aero	x	x		F&P
AE 6080 - Turbulence				F&P
AE 6100 - Struc. Stability I		x		S&A
AE 6104 - Computational Mech.				S&A
AE 6200 - Aeroelasticity		x		S&A
AE 6210 - Advanced Dynamics I	x			S&A
AE 6211 - Advanced Dynamics II		x		S&A
AE 6230 - Structural Dynamics	x			S&A
AE 6251 - Experimental Struc. Dyn				S&A
AE 6263 - Flexible Multibody Dyn.				S&A
AE 6270 - Nonlinear Dynamics				S&A
AE 6322 - Space Launch & Veh. Design		x		D
AE 6333 - Rotorcraft Design I	x			D
AE 6334 - Rotorcraft Design II		x		D
AE 6343 - Fixed Wing Design I	x			D
AE 6344 - Fixed Wing Design II		x		D
AE 6353 - Orbital Mech.	x			D
AE 6354 - Adv. Orbital Mech.		x		D
AE 6355 - Planetary Entry		x		D
AE 6361 - Propulsion System Des.		x		D
AE 6362 - Safety by Design			x	D
AE 6372 - Aerospace Systems Engineering	x			D
AE 6373 - Adv. Design Methods I	x			D
AE 6374 - Adv. Design Methods II		x		D
AE 6380 - CAE/CAD				D
AE 6381 - Software Development				D
AE 6382 - Computing Systems for Eng. Research Laboratory				D
AE 6383 - Applied Design Lab				D
AE 6410 - Combustion Dynamics	x			F&P
AE 6412 - Turbulent Combustion				F&P

AE 6440 - Turbine Engine Aerothermodynamics				F&P
AE 6445 - Combustor Fundamentals		x		F&P
AE 6450 - Rocket Propulsion	x			F&P
AE 6451 - Electric Propulsion				C&P
AE 6503 - Helicopter Stab. & Control		x		C
AE 6511 - Optimal Guidance & Control	x			C
AE 6520 - Advanced Flight Dynamics	x			C
AE 6531 - Robust Control I		x		C
AE 6551 - Cognitive Engineering	x			D
AE 6571 -Air Traffic Control and Mgt	x			D
AE 6580 - Nonlinear Control		x		C
AE 6760 - Acoustics I		x		F&P
AE 6761 - Acoustics II	x			F&P
AE 6765 - Kinetics & Thermo of Gas	x			F&P
AE 6766 - Combustion		x		F&P
AE 6769 - Linear Elasticity	x			S&A
AE 6770 - Engergy Methods in Elasticity & Plasticity	x			S&A
AE 6779 - Dyn Sys Sim. & Modeling				C
AE 7772 - Fracture Mechanics				S&A
AE 7774 - Fatigue Matls. & Structures				S&A
AE 7775 - Topics Frac. & Fatigue				S&A
AE 7792 - Adv. Mech. of Composites				S&A
AE 8803 - Multiphase Combustion				F&P
AE 8803 - Plasticity & Viscoelasticity				S&A
AE 8803 - Structural Acoustics				S&A
AE 8803 - Humans & Autonomy				C
AE 8803 - Software Reliability Analysis				C
AE 8803 - Optical Diagnostics for Reacting Flows				F&P
AE 8803 - Advanced Design Methods III				D
AE 8803 - Intro to Space Mission Architecture				D
AE 8803 - Human Contributions to Safety				D

Tentative Schedule of AE Elective Undergraduate Courses

	Credit Hours	Fall	Spring	Summer	Areas
AE4040 - CFD	3				F&P
AE4051 - Flow Diagnostics	3				F&P
AE4060 - Aeroacoustics	3				F&P
AE4070 - Propeller and Rotor Theory	3				F&P
AE4080 - Aerothermodynamics	3				F&P
AE4120 - Composite Structures	3				S&A
AE4131 - Finite Element Methods	3				S&A
AE4170 - Struc Integ. & Durability	3				S&A
AE4310 - Space Flight Mechanics	3				D
AE4375 - CAE/CAD	3				D
AE4461 - Intro to Combustion	3				F&P
AE4521 - Vehicle Guidance & Simulation	3				C
AE4580 - Avionics Integration	3				C
AE4757 - Biofluid Mechanics	3				F&P
AE4758 - Biosolid Mechanics	3				S&A
AE4760 - Eng. Acoustics & Noise Control	3				F&P
AE4791 - Mech. Behavior of Composites	3				S&A
AE4793 - Composite Mat'l & Proc.	3				S&A
AE4794 - Composite Manufact. & Testing	3				S&A
AE4813 - Avionics Unmanned Vehicle	3				C

Tentative Schedule of AE Required Undergraduate Courses

Tentative Schedule of AE Required Undergraduate Courses

	Credit Hours	Fall	Spring	Summer
AE1350 - Intro to AE	2	x	x	
AE2020 - Low Speed Aero	3	x	x	x
AE2220 - Dynamics	3	x	x	x
AE3021 - High Speed Aero	3	x	x	
AE3051 - Exp. Fluid Dyn.	2	x	x	
AE3125 - Aero Structural Analysis	4	x	x	
AE3145 - Structures Lab	1	x	x	
AE3310 - Performance	3	x	x	x
AE3450 - Thermo & Comp. flow	3	x	x	
AE3515 - System Dynamics and Control	4	x	x	
AE3521 - Flight Dynamics	4	x	x	x
AE4220 - Aeroelasticity	3	x	x	
AE4350/4356 - Design I	3	x		
AE4351/4357 - Design II	3		x	
AE4451 - Propulsion	3	x	x	
AE4525 - Feedback Control	2	x	x	
COE2001 - Statics	2	x	x	x
COE3001 - Deformable Bodies	3	x	x	x

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When you graduate with a Bachelor of Science in Aerospace Engineering (B.S.A.E.) degree from Georgia Tech, it is our expectation that you will have the following skills and attributes.

The graduates of the undergraduate program in aerospace engineering will have an understanding of physics, chemistry and mathematics, and how they pertain to solving real world problems.
They will have a firm understanding of engineering science fundamentals that enables the graduates to examine real world problems for the underlying physical principles, and decide on appropriate methods of solution.
They will have the ability to analyze and design aerospace structural elements such as trusses, beams and thin walled structures.
They will have the ability to analyze and design airfoils and wings, accounting for viscous and compressibility effects.
They will have the ability to analyze and design air-breathing and rocket propulsion systems.
They will have the ability to analyze the flight dynamics of aircraft and spacecraft, and design flight control systems.
They will have the ability to work in teams and design complex systems such as aircraft and spacecraft, from a preliminary design perspective.
They will have good oral, written and graphical communication skills.
They will be well trained in the role of the engineer in society, and have an awareness of ethical, environmental and quality concerns in the engineering profession.
They will be trained to be life-long learners, pursuing and interested in independent study, research and development.

Our academic program has a number of required and elective courses as well as independent/collaborative study opportunities that will help you achieve these skills. Each of these courses has specific objectives and expectations, that may be found on the course outlines at http://www.ae.gatech.edu/undergraduate/semester/required_courses.html

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Student and Faculty Expectations

The students and faculty of the School of Aerospace Engineering are committed to continuous improvement in the quality of undergraduate education. The students and the faculty expect from each other the following.

Faculty Expectations of Students:

review prerequisite course materials.
read handout materials provided in class.
complete out-of-class assignments on time.
come prepared for class. participate in the classroom by asking questions and contributing to any discussion.
get help/feedback from professor as needed.
follow the Institute Honor Code found at http://www.honor.gatech.edu/

Student Expectations of Faculty:

provide students with written documentation concerning course content and evaluation procedures.
set and advertise office hours and be available to students at other times by appointment.
put course material in context by relating it to real world problems and applications, current research, or the content of other courses in the curriculum.
respect students and be receptive to student opinions and questions.
treat students fairly and equitably.
come prepared for class.
return graded material in a timely fashion.
set examinations appropriately for the material being tested.

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Georgia Tech is committed to enhancing the quality of student life. There are numerous organizations and services that can assist you from finding a place to stay when you enter, to helping you find you an employer when you graduate. Here are a few.

Bookstore
Buzz Card Center
Bursar's Office: Registration, Fee, and Payment Information
Calendar, Academic
Career Services
Computer Ownership Policy
Computer Support and Repair
Computer-Based Training (CBT)
Cooperative Education
Counseling Center
CyberBuzz
Dean of Students
Dining Services
Disability Services for Students
Financial Aid
Freshman Experience Program
Graduate Studies and Research
Health Services
Housing
International Student Services & Programs (Office of International Education)
Library
Office of Information Technology (OIT)
OMED Educational Services
Orientation for New Students (FASET)
OSCAR Web
Parking and Transportation Services
Parking Registration (Apply Online)
Police Department
Post Office
Recreation
Registrar, Office of the

Robert Ferst Center for the Arts
Student Affairs
Student Center
Student Government Association
Student Organizations at Georgia Tech
Study Abroad Office (Office of International Education)
Success Programs
Tbook
Women's Resource Center
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The School home page is **http://www.ae.gatech.edu**. From here you access School publications and newsletters, academic advisement information, course outlines for all required and elective courses, information about student groups and faculty, and other useful information. Prof. Lakshmi Sankar and the AE Computer Support Staff maintain the web page. Please direct to their attention any corrections or revisions that you are aware of, and any broken links.

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The information provided below has been assembled by AE from many sources to make it more readily available to students. However, the most current and the **authoritative** source for all information about academic regulations can be found at the Registrar's web page under the Student Tab.

Incomplete

An Incomplete (grade = I) can be assigned only if the student is doing satisfactory work, but for **non-academic** reasons beyond his/her control and deemed acceptable by the instructor, was unable to meet the full requirements of the course. If the student's performance is so poor as to preclude his/her passing, the instructor should assign a grade of F. Acceptable reasons for assigning an Incomplete would include, but are not limited to, the following:

Personal illness of the student
Family emergency (death or serious illness in family, birth of child, etc)
Computer failure or software problem or lack of data supplied by an outside source
Travel required by a **current** job that could not be rescheduled

If you receive an incomplete in a course, you must satisfactorily complete the course work and arrange for the incomplete to be removed from your record by the end of the next semester for which you are registered. Otherwise, the grade will automatically be changed to a F. Clear the incomplete with your original professor. ***Do not register again for the course.***

Unsuccessful Audit

Normally, if a course is taken on an audit basis, the grade received will be a V to signify successful completion of the audit. However, if in the opinion of the instructor, the student did not successfully complete the audit, a grade of U may be assigned to indicate failure to complete the audit requirements. It is the responsibility of the student to determine from the instructor what will be required to successfully audit a course. This could include a minimum attendance requirement or a requirement to take all quizzes and the final exam.

Withdrawal from a Course

You may withdraw from a course on line without penalty any time during the first eight weeks of a semester or five weeks of the summer term. The exact date of the last day that withdrawals can be accepted is published in the OSCAR and is also found in the Official Institute

Calendar.

The decision to drop a course is a serious one and should be made only after consultation with your Undergraduate Advisor. Numerous "W's" on a transcript are an indication of either poor planning, ineffective time management, or lack of ability to complete assigned tasks. Prospective employers and graduate schools will not look favorably upon a record with a pattern of frequent withdrawals. As a practical matter, withdrawal from a course can seriously jeopardize a student's ability to complete the Program of Study on schedule.

Maximum Academic Load

Students in good standing may take up to 21 credit hours in any semester. However, course loads of over 18 hours are not advisable except for exceptionally talented students.

Thirty-Six-Hour Rule

The final 36 hours earned for a degree must be taken in residence at Georgia Tech.

Ten-Year Rule

Courses completed more than ten years prior to one's graduation date must be validated by a special examination.

Graduation with Academic Distinction

For graduation with highest honor, the minimum scholastic average shall be 3.6. For graduation with high honor, the minimum scholastic average shall be 3.4. For graduation with honor, the minimum scholastic average shall be 3.2. Please refer to the Georgia Tech general catalog for additional requirements.

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MS Thesis

Towards the end of the first semester following matriculation, all students who have elected to submit a thesis as part of their MS degree program will select their thesis topic. This decision will be made in conference with the assigned academic advisor. Definition of the thesis topic will include identification of the motivation for the investigation, a scheduling of the scope of work associated with the study, and a statement of the anticipated objectives. The purpose of the thesis is to further the educational development by requiring the student to plan, conduct and report on an organi

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MS Special Problem

Registration

All students who will be completing a Special Problem in partial fulfillment of the MS degree requirements must register for three hours of Special Problems in Aerospace Engineering (AE 8900). These credits are normally taken during the final semester of the program of study. Before the student is permitted to register for AE 8900, the AE Academic Office must receive a statement signed by the academic advisor which briefly describes the topic of the investigation and the number of academic credits to be awarded for completion of this part of the project.

Read more

Sample MS Degree Programs

The following programs of study are presented as samples which a student could follow if interested in the indicated technical specialty. **It is expected that each student, in consultation with the faculty advisor, will formulate an individually tailored program of study which is compatible with the student's research and career interests.**

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Academic Requirements

The academic requirements specify formulation of a Program of Study for each student that must meet the Course Credit Requirements and the Mathematics Requirement. Transfer Credits from prior coursework may also be used. When pursuing the Program of Study, the student must meet an academic performance requirement.

Read more

Qualifying Examination

In order to be accepted into candidacy for the Ph.D. degree, the Aerospace Engineering Ph.D. Qualifying Examination must be successfully completed. The exam is typically offered by the AE faculty two times each year and must be formally scheduled by the student.

Read more

Other Field Requirement

This requirement does not apply to the new exam format that begins fall 2013

Read more

Ph.D. Dissertation

Each Ph.D. candidate must carry out original research and describe it in a dissertation. This requires determination of a research topic, selection of a dissertation advisory committee, preparation of a research proposal (oral presentation followed by comprehensive examination), completion of the research and preparation of the dissertation, and lastly, oral presentation followed by final examination (*i.e.*, thesis defense).

Read more

Sample Ph.D. Degree Programs

No sample Ph.D. programs are provided.

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APPENDIX C: Schedule of Course Offerings

The following is the anticipated scheduling of graduate course offerings previously described in Appendix B along with similar listings for elective and required undergraduate courses. An **x** in a given semester indicates that the course is to be offered every year. An **e** or an **o** in a given semester means that the course will be offered only in even or odd numbered years respectively. A **?** means the course will be offered on demand. It should be noted that a course will not be offered if there is an insufficient enrollment.

Read more

APPENDIX D: PhD Qualifying Examination Areas

The student, in consultation with his/her advisor, will select two examination areas. It should be noted that the general scope of each examination will be based on the enumerated **primary** courses plus all associated **prerequisite** and **background** material at the graduate and undergraduate level

Examination areas can be found **here**.

Read more

APPENDIX E: List of Courses Satisfying Math Requirements

General:

Any course listed in the Georgia Tech Catalog with a "MATH" designation (i.e., a course offered or cross-listed by the School of Mathematics) that is:

Read more

APPENDIX F: Sample Forms

The following are *some* of the forms you will need to prepare and submit to the AE Academic Office and the Office of Graduate Studies and Research during the course of your graduate program of study in Aerospace Engineering. The forms below are those that must be prepared using a word processor, and in some cases they must be signed by you, your Advisor, and your Advisory Committee members before you submit them to the AE Academic Office. Most of the forms are electronically writable files, but in some cases PDF versions are provided.

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Undergraduate

There is currently no content classified with this term.

Graduate

There is currently no content classified with this term.

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This web-based handbook is intended to help you plan your undergraduate curriculum. It also contains links to useful information on other learning opportunities such as dual degree programs, certificates, minors, undergraduate research, and internships.

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Every student, at the time he or she is admitted into the program, is assigned a faculty advisor. You may contact your advisor with a prior appointment anytime during the academic year. Your advisor will help you select courses for the next several semesters, and will provide career counseling.

Read more

Educational Objectives

The AE faculty, in consultation with employers, government agencies, professional societies (American Institute of Aeronautics and Astronautics, American Helicopter Society) and alumni, has established certain fundamental educational objectives. Since aerospace engineering is a dynamic and rapidly changing field, these objectives are periodically reviewed and updated as appropriate.

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Expected Outcomes

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Student Life

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Web Site

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The AE undergraduate program requires that the student complete 132 hours in the following areas:

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Required Courses and Pre-Requisites

The required courses in the AE undergraduate program are listed below. The credit hours are shown as (lecture-lab-credit). Any prerequisite courses are shown in parentheses. The course entry is linked to a detailed course description on the home department web page (when available), but otherwise may be a link to the brief description in the General Catalog. Since departmental web pages are frequently restructured, some of these links may be broken.

Read more

Scheduling and Grade Requirements

Only free elective courses may be taken pass/fail. All other curriculum courses must be taken on a credit basis.

Read more

Academic Standing

Academic standing is based on both the Term grade point average and the Overall average of the student. The minimum Term and Overall grade point average for a student to be on GOOD standing is as follows **:

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Georgia Tech Grading System

See description of grades.

Read more

Cross Registration

With the approval of the student's major school, a GT student may schedule courses at any of the colleges or universities comprising the Atlanta Regional Consortium for Higher Education (ARCHE"), but only IF SUCH COURSES ARE NOT AVAILABLE in a particular term at Georgia Tech.

Read more

Petition To The Faculty

A "Petition to the Faculty" form may be completed by a student when asking for an exception to an Institute or School rule or policy. The petition is first reviewed by the AE undergraduate Academic Advisory Council, and must be approved by the Associate Chair for Undergraduate Programs before it is forwarded to the Institute Curriculum Committee. Some examples of exceptions include:

Read more

Sample Eight Semester Curriculum

Sample Eight Semester Curriculum

The undergraduate program may be completed over an eight-semester period, provided the student carefully plans his or her curriculum in consultation with the faculty advisor. Below are links to the sample eight semester curriculum. Your advisor may ask to follow a slightly different curriculum based on your qualifications (e.g. AP or transfer credit) and availability of the course.

B.S. Aerospace Engineering

Read more

Other Academic Requirements

Constitution and History Examinations

Georgia law requires that before receiving an undergraduate degree in this state, all students must demonstrate competence in United States and Georgia history and constitutional government. (A student may satisfy this requirement by passing two examinations administered by the Department of Social Sciences or by successfully completing HIST 2111, HIST 2112, POL 1101, PUBP 3000 or INTA 1200.) The most up-to-date information can be obtained from the Registrar at this link.

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The information provided below has been assembled by AE from many sources to make it more readily available to students. However, the most current and the **authoritative** source for all information about academic regulations can be found at the Registrar's web page under the Student Tab.

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Prior to the regisration period an e-mail would be sent to all the AE students from the AE Academic Office reminding them of the academic advisement. The students must contact their academic advisor and make an appointment to see the advisor. (see OSCAR or the AE Academic Advisement pages). **A hold is placed on all AE students with a GPA below 2.5 that will prevent them from registering without advisement**.

Read more

Degree Petitions

In order to graduate, students must petition for a degree. You can obtain the Degree Petition in the AE Academic Office. This petition must be completed the semester prior to the semester of graduation. It must be reviewed and signed by the Undergraduate Advisor or Associate Chair for Undergraduate Studies. Completed petitions must be submitted to the Academic Office by the **Drop day (see the registrar's calendar for due dates).**

Read more

Transfer Credit

Course work taken at another institution may be considered for transfer credit if (a) it was passed with a grade of C or better and (b) it is not a substitute for a course previously failed at Georgia Tech. Transfer credit is granted by one of two means. For most lower division courses the Admissions Office or the Registrar, upon review of a transcript, will automatically give credit for courses taken at other institutions.

Read more

Readmissions

A student, who for any reason has remained out of school more than two semesters, must apply for readmission. **To apply, a completed Application for Readmission must be submitted to the Office of the Registrar, prior to the deadlines listed in the catalog** It is the responsibility of the student to allow sufficient time for the readmission process to be completed. In cases requiring an interview, the Institute deadlines may be too late.

Read more

Change of Major

Undergraduate students, by filing the required form, will be permitted one unrestricted transfer between majors (including undecided) until they have accumulated credit for sixty hours. After sixty hours or upon subsequent request for transfer, the transfer will be permitted at the discretion of the school that the student is seeking to enter. Students who transfer from another institution to pursue a degree at Georgia Tech will be permited to change their major only at the discretion of the school that the student is seeking to enter.

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Applying for the Fundamentals of Engineering Exam

The Georgia State Board of Registration offers Georgia Tech students the opportunity to take the Fundamentals of Engineering (FE) exam before they graduate, a privilege not normally afforded to the general public. The exam is given twice a year (October and April). Students who are within two semesters of graduation and want to take the exam must fill out the application before the deadlines established by the Georgia State Board. The applications, available in the Academic Office must contain a recent picture of the applicant, be typed, notarized, and signed by five references.

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Dual Degree Program

The Dual Degree program was established to allow students to combine a typical liberal arts program with the technological curriculum offered by Georgia Tech. Under this program, a student attends a liberal arts college for three years and then comes to Georgia Tech for two years. Upon completion of the program, the student receives both a bachelor of arts or science degree from the liberal arts college and a bachelor's of science degree in an engineering or science field from Georgia Tech.

Read more

Second Undergraduate Degree

The Second Undergraduate Degree option is available for students who have received an undergraduate degree in another discipline at Georgia Tech or from some other school. To earn a BSAE degree, the student must satisfy all of the requirements of the Aerospace Engineering program including a minimum of 36 semester hours in excess of the requirements for the previous degree.

Read more

Cooperative Degree Program

Students who maintain the necessary high academic scholarship may participate in the five-year cooperative program and receive the degree Bachelor of Science in Aerospace Engineering, Cooperative Plan. Students interested in more information about the co-op program or in applying for admission to the cooperative plan should contact the Cooperative Division Office.

Read more

Academic Support Services

The Office of Success Programs offers a free tutorial service. One-on-one tutoring in calculus, physics and chemistry is available to all students. For information, visit www.success.gatech.edu.
OMED (Office of Minority Educational Development) offers a **free tutorial service available to ALL undergraduates.** Tutoring is available in mathematics, science and many engineering courses. Tutoring sessions are in the Library. For information, call 894-3959.

Read more

Professional and Honor Societies

Several professional aeerospace engineering societies, including one honorary group, have student chapters at Georgia Tech. These organizations offer students a unique opportunity to learn about the many facets of aerospace engineering, and they also provide valuable service to the School. You are strongly encouraged to participate in one or more of these groups.

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Foreward

This web-based document presents a summary of academic requirements for graduate degrees administered by the School of Aerospace Engineering.

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The Graduate Faculty and Staff

Prof. Vigor Yang is the Chair of the School of Aerospace Engineering and oversees all aspects of our undergraduate and graduate program. He is interested in your comments and suggestions for improving the program, and may be reached by appointment at 404-894-3002 (e-mail: vigor.yang@ae.gatech.edu).

Read more

Academic Procedures

Academic Advisement

Every entering aerospace engineering graduate student is assigned to a faculty member, who will be available for academic advisement throughout the student's tenure at Georgia Tech. These assignments are made on the basis of matching the faculty member's technical specialty with the study program interests of the student. The student is expected to consult with the assigned "academic advisor" on such matters as:

Read more

Academic Workload

General Requirements

Although students signed up for 12 credit hourse are considered "full time" by the institute, students in AE should sign up for 21 credit hours. As many of these hours as possible, but no less than 12, must be on a letter grade or pass/fail basis.Students will register for a sufficient number of AE 7000 hours (MS students) or AE 9000 hours (PhD students) to bring thier academic load to the required 21 hours. Part time students, on campus or distance learning, may sign up for as little as 3 hours.

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AE Web Site

The School home page is **http://www.ae.gatech.edu**.

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The AE faculty, in consultation with employers, government agencies, professional societies (American Institute of Aeronautics and Astronautics, American Helicopter Society) and alumni, has established certain fundamental educational objectives. Since aerospace engineering is a dynamic and rapidly changing field, these objectives are periodically reviewed and updated as appropriate.

To provide students with a comprehensive education that includes in-depth instruction in aerodynamics, aircraft and spacecraft structures, flight mechanics, orbital mechanics, flight propulsion, and design of aerospace systems.
To prepare students for careers in AE by emphasizing analysis and problem solving; exposure to open-ended problems and design issues including manufacturing, maintenance and fostering teamwork; communications skills; and individual professionalism.
To provide adequate research and independent study opportunities that cultivate lifelong learning skills and nourish creative talents.

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When you graduate with a Bachelor of Science in Aerospace Engineering (B.S.A.E.) degree from Georgia Tech, it is our expectation that you will have the following skills and attributes.

The graduates of the undergraduate program in aerospace engineering will have an understanding of physics, chemistry and mathematics, and how they pertain to solving real world problems.
They will have a firm understanding of engineering science fundamentals that enables the graduates to examine real world problems for the underlying physical principles, and decide on appropriate methods of solution.
They will have the ability to analyze and design aerospace structural elements such as trusses, beams and thin walled structures.
They will have the ability to analyze and design airfoils and wings, accounting for viscous and compressibility effects.
They will have the ability to analyze and design air-breathing and rocket propulsion systems.
They will have the ability to analyze the flight dynamics of aircraft and spacecraft, and design flight control systems.
They will have the ability to work in teams and design complex systems such as aircraft and spacecraft, from a preliminary design perspective.
They will have good oral, written and graphical communication skills.
They will be well trained in the role of the engineer in society, and have an awareness of ethical, environmental and quality concerns in the engineering profession.
They will be trained to be life-long learners, pursuing and interested in independent study, research and development.

Our academic program has a number of required and elective courses as well as independent/collaborative study opportunities that will help you achieve these skills. Each of these courses has specific objectives and expectations, that may be found on the course outlines at http://www.ae.gatech.edu/undergraduate/semester/required_courses.html

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Every student, at the time he or she is admitted into the program, is assigned a faculty advisor. You may contact your advisor with a prior appointment anytime during the academic year. Your advisor will help you select courses for the next several semesters, and will provide career counseling.

Prof. Vigor Yang is the Chair of the School of Aerospace Engineering and oversees all aspects of our undergraduate and graduate program. He is interested in your comments and suggestions for improving the program, and may be reached by appointment at 404-894-3002 (or e-mail: vigor.yang@ae.gatech.edu).

Prof. J. Jagoda is the Associate Chair and oversees graduate studies and research. He may be reached at 404-894-3060 (e-mail: jjagoda@ae.gatech.edu). He can answer any question you may have about undergraduate research opportunities, undergraduate internships, graduate fellowships and admission into our graduate program.

Prof. Lakshmi N. Sankar handles curricular information (course outlines, content) as well as class scheduling, and he serves as the AE Undergraduate Program Coordinator. He may be reached at 404-894-3014 (e-mail: lsankar@ae.gatech.edu). The Academic Advisory Council, chaired by Prof. Sankar, reviews your petitions and makes final recommendations. He is also your point of contact for submitting petitions to the faculty, requesting waiver of the School or Institute rules.

Ms. Daurette Joseph is the departmental Academic Advisor, available to assist all AE students. She assigns your academic advisor, assists in scheduling classes, manages overloads and permits, and processes your degree petitions. Her office is Knight 309 which is on the same floor as the AE Academic Office. She may be reached at 404-385-1595 (e-mail: daurette.joseph@ae.gatech.edu).

Prof. Lakshmi Sankar is in charge of the Undergraduate Computing Laboratory and the School of AE web site at http://www.ae.gatech.edu . He may be reached at 404-894-3014 (e-mail: lakshmi.sankar@ae.gatech.edu).

Miss Rebekah Trout at the AE Academic Office handles all the paperwork concerning your studies, and can answer most of your questions about our program. She may be reached at 404-894-3001 (e-mail: rebekah.trout@ae.gatech.edu).

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Student and Faculty Expectations

The students and faculty of the School of Aerospace Engineering are committed to continuous improvement in the quality of undergraduate education. The students and the faculty expect from each other the following.

Faculty Expectations of Students:

review prerequisite course materials.
read handout materials provided in class.
complete out-of-class assignments on time.
come prepared for class. participate in the classroom by asking questions and contributing to any discussion.
get help/feedback from professor as needed.
follow the Institute Honor Code found at http://www.honor.gatech.edu/

Student Expectations of Faculty:

provide students with written documentation concerning course content and evaluation procedures.
set and advertise office hours and be available to students at other times by appointment.
put course material in context by relating it to real world problems and applications, current research, or the content of other courses in the curriculum.
respect students and be receptive to student opinions and questions.
treat students fairly and equitably.
come prepared for class.
return graded material in a timely fashion.
set examinations appropriately for the material being tested.

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Student Life

Georgia Tech is committed to enhancing the quality of student life. There are numerous organizations and services that can assist you from finding a place to stay when you enter, to helping you find you an employer when you graduate. Here are a few.

Bookstore
Buzz Card Center
Bursar's Office: Registration, Fee, and Payment Information
Calendar, Academic
Career Services
Computer Ownership Policy
Computer Support and Repair
Computer-Based Training (CBT)
Cooperative Education
Counseling Center
CyberBuzz
Dean of Students
Dining Services
Disability Services for Students
Financial Aid
Freshman Experience Program
Graduate Studies and Research
Health Services
Housing
International Student Services & Programs (Office of International Education)
Library
Office of Information Technology (OIT)
OMED Educational Services
Orientation for New Students (FASET)
OSCAR Web
Parking and Transportation Services
Parking Registration (Apply Online)
Police Department
Post Office
Recreation
Registrar, Office of the

Robert Ferst Center for the Arts
Student Affairs
Student Center
Student Government Association
Student Organizations at Georgia Tech
Study Abroad Office (Office of International Education)
Success Programs
Tbook
Women's Resource Center
World Wide Web Policy and Guidelines for Georgia Tech

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The School home page is **http://www.ae.gatech.edu**. From here you access School publications and newsletters, academic advisement information, course outlines for all required and elective courses, information about student groups and faculty, and other useful information. Prof. Lakshmi Sankar and the AE Computer Support Staff maintain the web page. Please direct to their attention any corrections or revisions that you are aware of, and any broken links.

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Educational Objectives

The AE faculty, in consultation with employers, government agencies, professional societies (American Institute of Aeronautics and Astronautics, American Helicopter Society) and alumni, has established certain fundamental educational objectives. Since aerospace engineering is a dynamic and rapidly changing field, these objectives are periodically reviewed and updated as appropriate.

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Expected Outcomes

When you graduate with a Bachelor of Science in Aerospace Engineering (B.S.A.E.) degree from Georgia Tech, it is our expectation that you will have the following skills and attributes.

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The Georgia State Board of Registration offers Georgia Tech students the opportunity to take the Fundamentals of Engineering (FE) exam before they graduate, a privilege not normally afforded to the general public. The exam is given twice a year (October and April). Students who are within two semesters of graduation and want to take the exam must fill out the application before the deadlines established by the Georgia State Board. The applications, available in the Academic Office must contain a recent picture of the applicant, be typed, notarized, and signed by five references. Three of the references must be registered Professional Engineers. Students are encouraged to take this exam in their senior year.

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Please watch your e-mail for any notices concerning the status of your degree petition.

If you **do not** graduate in the semester for which you filed, then submit a reactivation petition when ready to graduate. They may be submitted to the Academic Office for review and forwarding to the Registrar no later than the end of the first week of classes of your final semester.

You may review your program at any time by logging into OSCAR and running a CAPP report.
Co-ops and International Plan students should obtain the appropriate signature.

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Readmissions

A student, who for any reason has remained out of school more than two semesters, must apply for readmission. **To apply, a completed Application for Readmission must be submitted to the Office of the Registrar, prior to the deadlines listed in the catalog** It is the responsibility of the student to allow sufficient time for the readmission process to be completed. In cases requiring an interview, the Institute deadlines may be too late. Please note that the School of Aerospace Engineering can only ***recommend*** a course of action; the final decision is made by the Institute's Undergraduate Curriculum Committee.

Voluntary Withdrawal after Completion of Semester

Students who are on ***good standing*** or ***warning*** status may apply for readmission in any subsequent semester and expect positive action by the Registrar's Office.

Students who are on ***probation*** must arrange for an interview with Prof. Lakshmi Sankar to discuss their application for readmission. A positive recommendation will normally be given if there is a clear indication that the problems that led to the student's poor standing have been, or are being, rectified.

Voluntary Withdrawal with all "W" Grades

Students who withdraw during a semester and receive all "W" grades will **not** be allowed to re-enter the semester following withdrawal. In addition, a letter explaining how the problems that led to the withdrawal have been resolved must accompany the application for readmission. As in the previous case, those students on probation at the time of withdrawal must schedule an interview with Prof. Lakshmi Sankar. Meet with Dr. Sankar before withdrawing completely to discuss the best course of action.

Dropped for Unsatisfactory Scholarship

Students who have been dropped for unsatisfactory scholarship will not normally be readmitted. They should consider educational alternatives.

If readmission is recommended by the School, the student will be asked to sign a contract which will include a program of study and a minimum grade point average which will assure a GPA of 2.0 at the end of the period covered by the contract. (Contracts typically run for three semesters, but may be extended if the student takes fewer than 12 hours per semester.) Failure to meet any part of the contract will result in the student's dismissal from the Institute with the understanding that no attempt will be made to seek further readmission to the School of Aerospace Engineering.

Section VIII, B.6 of the Student Rules and Regulations states: "A student who is dropped a second time for unsatisfactory scholarship will not be readmitted to the Institute."

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Prior to the regisration period an e-mail would be sent to all the AE students from the AE Academic Office reminding them of the academic advisement. The students must contact their academic advisor and make an appointment to see the advisor. (see OSCAR or the AE Academic Advisement pages). **A hold is placed on all AE students with a GPA below 2.5 that will prevent them from registering without advisement**.
At the appointed time, the advisor will go over your current semester schedule of classes, and recommend courses that must be taken during the next semester, taking into consideration your co-op status, if necessary. The advisor will, at your request, project a three- or four-semester schedule that you need to follow to graduate on time.
You should register for the courses during early registration period (highly recommended). Access to registration is by time ticket only. Use the web student access system to check your time ticket, registration holds, and other pertinent data. Late registration, drops and adds may be made during late registration. The OSCAR (On-Line Student Computer Assisted Registration) gives details on registering using the web student access system or the voice mail system.
Verify and print out the term schedule on the web student access system. **Verification is critical** as students are responsible for all courses remaining on their term schedule at the end of late registration.
Watch your GT e-mail for communications from the Registrar and the School of AE concerning any last minute changes or cancellations.

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Restricted or Graduate Courses:
To register for restricted courses or graduate courses you must ask the appropriate department to enter the permit on-line.
Overloads of Closed Sections:
To register for a section of a course that has closed, you should go to the school or department offering the course and request an on-line permit. For AE courses, please sbumit your request using OSCAR.
Time Conflicts:
To register for two classes that are scheduled at the same time, you must obtain verification from one of the instructors that the conflict will not affect your ability to complete the course successfully. The instructor should email this verification to permits@ae.gatech.edu.
Registration Holds:
If your Time Ticket indicates a hold on registration, check the OSCAR for an interpretation of the hold and instructions for its clearance.

Course Meeting Places

Each school and department posts a list of meeting places for the classes it offers. For AE classes, this list will be posted on the bulletin board outside the Academic Office the day before the start of classes. For other schools and departments, check the OSCAR. Times and meeting places will also be listed on the OSCAR web site (oscar.gatech.edu).

Cross Registration

Students who would like to take courses not offered at Georgia Tech can do so through the cross registration program administered through the University Center in Georgia. If you are interested, contact the Registrar's Office at Tech.

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Transfer Credit

Course work taken at another institution may be considered for transfer credit if (a) it was passed with a grade of C or better and (b) it is not a substitute for a course previously failed at Georgia Tech. Transfer credit is granted by one of two means. For most lower division courses the Admissions Office or the Registrar, upon review of a transcript, will automatically give credit for courses taken at other institutions. Otherwise the ***student*** must convince an instructor in the appropriate department at Tech that the non-resident course is equivalent to a course here. If you are seeking transfer credit by such means, bring all relevant materials (syllabi, textbook, catalog description, copies of exams, homework, etc.) to the instructor of the similar Georgia Tech course, and ask that a Non-Resident Credit Form be completed and submitted to the Registrar. You should check at a later date to make sure the form did indeed reach the Registrar.

Transfer credit appears as the initial entry on a student's transcript. Where credit is granted for a course that has content identical to a Georgia Tech course, the Tech course number will be listed. If the credit is for a course that does not exactly match a Tech course in content or hours, the listing will be in a generic form, such as Math 3xxx.

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General

The information provided below has been assembled by AE from many sources to make it more readily available to students. However, the most current and the **authoritative** source for all information about academic regulations can be found at the Registrar's web page under the Student Tab.

Incomplete

An Incomplete (grade = I) can be assigned only if the student is doing satisfactory work, but for **non-academic** reasons beyond his/her control and deemed acceptable by the instructor, was unable to meet the full requirements of the course. If the student's performance is so poor as to preclude his/her passing, the instructor should assign a grade of F. Acceptable reasons for assigning an Incomplete would include, but are not limited to, the following:

Personal illness of the student
Family emergency (death or serious illness in family, birth of child, etc)
Computer failure or software problem or lack of data supplied by an outside source
Travel required by a **current** job that could not be rescheduled

If you receive an incomplete in a course, you must satisfactorily complete the course work and arrange for the incomplete to be removed from your record by the end of the next semester for which you are registered. Otherwise, the grade will automatically be changed to a F. Clear the incomplete with your original professor. ***Do not register again for the course.***

Unsuccessful Audit

Normally, if a course is taken on an audit basis, the grade received will be a V to signify successful completion of the audit. However, if in the opinion of the instructor, the student did not successfully complete the audit, a grade of U may be assigned to indicate failure to complete the audit requirements. It is the responsibility of the student to determine from the instructor what will be required to successfully audit a course. This could include a minimum attendance requirement or a requirement to take all quizzes and the final exam.

Withdrawal from a Course

You may withdraw from a course on line without penalty any time during the first eight weeks of a semester or five weeks of the summer term. The exact date of the last day that withdrawals can be accepted is published in the OSCAR and is also found in the Official Institute

Calendar.

The decision to drop a course is a serious one and should be made only after consultation with your Undergraduate Advisor. Numerous "W's" on a transcript are an indication of either poor planning, ineffective time management, or lack of ability to complete assigned tasks. Prospective employers and graduate schools will not look favorably upon a record with a pattern of frequent withdrawals. As a practical matter, withdrawal from a course can seriously jeopardize a student's ability to complete the Program of Study on schedule.

Maximum Academic Load

Students in good standing may take up to 21 credit hours in any semester. However, course loads of over 18 hours are not advisable except for exceptionally talented students.

Thirty-Six-Hour Rule

The final 36 hours earned for a degree must be taken in residence at Georgia Tech.

Ten-Year Rule

Courses completed more than ten years prior to one's graduation date must be validated by a special examination.

Graduation with Academic Distinction

For graduation with highest honor, the minimum scholastic average shall be 3.6. For graduation with high honor, the minimum scholastic average shall be 3.4. For graduation with honor, the minimum scholastic average shall be 3.2. Please refer to the Georgia Tech general catalog for additional requirements.

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Other Academic Requirements

Constitution and History Examinations

Georgia law requires that before receiving an undergraduate degree in this state, all students must demonstrate competence in United States and Georgia history and constitutional government. (A student may satisfy this requirement by passing two examinations administered by the Department of Social Sciences or by successfully completing HIST 2111, HIST 2112, POL 1101, PUBP 3000 or INTA 1200.) The most up-to-date information can be obtained from the Registrar at this link.

Regents' Test

To obtain an undergraduate degree, each student in the University System of Georgia must demonstrate proficiency in reading and composition in English by passing the Regents' Test. Students are eligible to take the test after they have earned ten hours of course credit. (Any student who has earned 45 credit hours and has yet to pass the Regents' Test must schedule remedial English (English 0012 and/or 0015) in addition to regular course work.) For non-native speakers of English, alternative tests are available through the Department of Modern Languages.

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Academic Standing

Academic standing is based on both the **Term** grade point average and the **Overall** average of the student. The minimum Term and Overall grade point average for a student to be on GOOD standing is as follows **:

Class Standing	***Required GPA***
Freshman and JEHPS	1.70
Sophomore	1.80
Junior	1.95
Senior and Special Undergraduate	2.00

***Students on an academic readmission agreement may have additional requirements in order to be on GOOD standing.*

Academic standings in effect at Georgia Tech are as follows:

Academic Standing	***Description***
GOOD	Student is not on academic warning or probation; is maintaining satisfactory academic progress
WARNING	Student's most recent academic performance has been unsatisfactory or the overall average is below the minimum requirement
PROBATION	Student's most recent academic performance has been extremely unsatisfactory or the term average has continued to be unsatisfactory or the overall academic average has continued to be below the minimum requirement
REVIEW	Student who normally would be dropped from the rolls due to academic deficiencies but appears from the record not to have completed the term. Student cannot be enrolled on Review status and should contact the Registrar's Office for further information
DROP/DISMISSAL	Student has been dropped from the rolls due to academic deficiencies. Student may apply for readmission after an absence of one term unless this is second Drop/Dismissal. Students on Drop should seek advisement from their major school regarding future re-admission.

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With the approval of the student's major school, a GT student may schedule courses at any of the colleges or universities comprising the Atlanta Regional Consortium for Higher Education (ARCHE"), but only IF SUCH COURSES ARE NOT AVAILABLE in a particular term at Georgia Tech.

All registration activities are performed at Georgia Tech and all fees are paid at Georgia Tech. Applications for cross registration and a listing of participating schools are available in the Student Records Office, Room 104 of the Tech Tower (Administration Building). Deadlines for application are printed in the Official School Calendar found in the OSCAR (registration bulletin).

Eligibility

1. Cross registration is available only to degree-seeking juniors, seniors and graduate students.
2. A student must be in GOOD academic standing at the time of application.
3. During the term of cross registration, the student must be enrolled at Georgia Tech for 3 or more credit hours. The maximum number of hours allowed during a term (including cross registered courses) is 21.
4. Credits earned through this program will be handled as transfer credit in that the grades earned WILL NOT be included in the calculation of grade point average. However, the credits earned will be counted as Georgia Tech resident credit toward a degree.

It will be the responsibility of the student to arrange for a transcript to be sent to Georgia Tech from the participating school at the end of the term. Transcripts should be mailed to:

Transfer Credit Evaluation
Office of the Registrar
Georgia Institute of Technology
Atlanta, GA 30332-0315

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Georgia Tech Grading System

GRADE	DESCRIPTION	QUALITY POINTS (per credit hour)
A	Excellent	4
B	Good	3
C	Satisfactory	2
D	Passing	1
F	Failure	0
S	Satisfactory completion of a course taken under pass/fail, or of a course in which no other letter grade may be assigned.	0
U	Unsatisfactory completion of a course taken under pass/fail, or of a course in which no other letter grade may be assigned.	0
V	Audit (no academic achievement implied)	0
I	Incomplete	0
W	Withdrew	0
NR	Not Reported - assigned when an instructor fails to submit grades by the published deadline, through no fault of the student (effective Summer Quarter, 1988).	0

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The AE undergraduate program requires that the student complete 132 hours in the following areas:

12 hours of humanities that includes ENGL 1101 (3 hours) and ENGL 1102 (3 hours)
Check here for the current approved list of humanities courses.
12 hours of social sciences that includes a course on history (HIST 2111 or 2112) or political science (POL 1101), or public policy (PUBP 3000) or international affairs (INTA 1200), **and** a course on engineering economics (ECON 2100*).
Check here for the current approved list of social sciences courses.
16 hours of mathematics (Math 1501, 1502, 2401, 2403)
8 hours of physics (Phys 2211, 2212)
4 hours of chemistry (Chem 1310)
3 hours of science/technical elective to be selected from an AE-approved list.
3 hours **each** of computer science (CS 1371), CAD (CEE/ME 1770), and materials science (MSE 2001)
3 hours of electronics & circuit theory, and lab (EE 3710 and EE 3741)
8 hours of aerodynamics (AE 2020, 3021, 3051)
10 hours of statics and structures (COE 2001, 3001 AE, 3125, 3145)
6 hours of dynamics and aeroelasticity (AE 2220, 4220)
6 hours of thermodynamics and propulsion (AE 3450, 4451)
10 hours of flight mechanics and control (AE 3515, 3521, 4525)
11 hours of aerospace performance and design (AE 1350, 3310, 4350, 4351)
2 hours of technical writing (LCC 3403-use extra hour for free elective or {AE 3801 with AE 3051-requires one additional free elective} or {LCC 4701 and LCC 4702})
2 hours of PE (HPS 1040 or HPS 1061 or HPS 1062 or HPS 1063)
10 hours of free electives

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A "Petition to the Faculty" form may be completed by a student when asking for an exception to an Institute or School rule or policy. The petition is first reviewed by the AE undergraduate Academic Advisory Council, and must be approved by the Associate Chair for Undergraduate Programs before it is forwarded to the Institute Curriculum Committee. Some examples of exceptions include:

To withdraw from school or a course past the deadline
To be readmitted after being placed on DROP status
To be granted an individual course substitution
To be granted full graduate standing

All "Petition to the Faculty" forms must be completed by the student and signed by all appropriate offices. Instructions for completion are printed on the form. These forms should be submitted to the Registrar's Office in Room 101 of the Tech Tower (Administration Building).

These petitions are reviewed and acted upon by the Undergraduate Curriculum Committee. Dates of the committee meetings are published in the OSCAR (registration bulletin) and results are available the following day. Students should submit the "Petition to the Faculty" and any supporting documentation five working days prior to the committee meeting.

Questions regarding the petition process or results from committee meetings can be obtained by telephoning (404) 894-4180 or via e-mail at comments@registrar.gatech.edu.

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Required Courses and Pre-Requisites

The required courses in the AE undergraduate program are listed below. The credit hours are shown as (lecture-lab-credit). Any prerequisite courses are shown in parentheses. The course entry is linked to a detailed course description on the home department web page (when available), but otherwise may be a link to the brief description in the General Catalog. Since departmental web pages are frequently restructured, some of these links may be broken.

ENGL 1101: English Composition I (3-0-3)
ENGL 1102: English Composition II (3-0-3)
History 2111 or HIST 2112 or POL 1101 or POL 2101 or INTA 1200 (3-0-3)
Math 1501: Calculus I (3-0-2-4)
Math 1502:Calculus II (3-0-2-4)
Math 2401:Calculus III (3-0-2-4)
Math 2403: Differential equations (3-0-2-4)
Physics 2211: Introductory Physics I (3-3-4)
Physics 2212:Introductory physics II (3-3-4)
CHEM 1310: General Chemistry I (3-3-4)
Science/technical elective: to be selected from the AE-approved list
CS 1371: Computing for Engineers(2-3-3)
ECE 3710: Circuits and Electronics (2-0-2) (Pre-req: Phys2212)
ECE 3741: Instrumentation and Electronics Lab (0-3-1) (Pre-req: ECE3710)
ECON 2100: Economic Analysis and Policy formation (3-0-3) ECON 2105 or ECON 2106 can also be used to satisfy this requirement.
MSE 2001: Principles and Applications of Engineering Materials (3-0-3) (Pre-req: Chem1310)
LCC 3403: Technical Communication* (3-0-3) (Pre-req: ENGL 1102)
AE 1350: Introduction to AE (2-0-2)
CEE/ME 1770: Introduction to Engineering Graphics and Visualization (2-3-3) (Co-req: Math1501)
COE 2001 Statics (2-0-2) (Pre-req: Phys 2211, Math1502)
COE 3001 Deformable Bodies (3-0-3) (Pre-req: AE 2120 or COE 2001, Math 2403)
AE 2020 Low Speed Aerodynamics (3-0-3) (Pre-req: AE1350, Phys2211, Math2401)
AE 2220 Dynamics (3-0-3) (Pre-req: AE2120 or COE 2001, Co-req: Math2403)
AE 3021 High Speed Aerodynamics (3-0-3) (Pre-req: AE2020, AE3450)
AE 3051 Experimental Fluid Dynamics (1-3-2) (Pre-req: AE2020; Co-req: AE3450)
AE 3125 Aerospace Structural Analysis (4-0-4) (Pre-req: COE 3001)
AE 3145 Structures Laboratory (0-3-1) (Pre-req: AE3120 or COE 3001)
AE 3310 Introduction to Aerospace Vehicle Performance (3-0-3) (Pre-req: AE2020, Math2403)

AE 3450 Thermodynamics & Compressible Flow (3-0-3) (Pre-req: Phys2212, Math 2401)
AE 3515 System Dynamics & Control (4-0-4) (Pre-req: AE2220, Math2403)
AE 3521 Aircraft & Spacecraft Flight Dynamics (4-0-4) (Pre-req: AE2020, AE3515)
AE 4220 Structural Dynamics and Aeroelasticity (3-0-3) (Pre-req: AE3122 or 3125, AE3515)
AE 4310 Space Flight Mechanics (3-0-3) (Pre-req: AE 2220; Required co-req for AE 4356)
AE 4350 Aerospace Engineering Design Project I (2-3-3) (Pre-req:AE3310, Co-req: AE 3021, AE3521, AE4451)
AE 4351 Aerospace Engineering Design Project II (2-3-3) (Pre-req: AE4350, AE 3021, AE 3521, AE 4451))
AE 4356 Space Systems Design Project I (2-3-3) (Pre-req: AE 3310, Co-req: AE 4310, AE 4451)
AE 4357 Space Systems Design Project II (2-3-3) (Pre-req: AE 4356, AE 4310, AE 4451)
AE 4358 Rotorcraft Design Project I (2-3-3) (Pre-req: AE 3310, Co-req: CE/ME 1770, CS 1371)
AE 4359 Rotorcraft Design Project II (2-3-3) (Pre-req: AE 4358, AE 3125, AE 3521, MSE 2001)
AE 4451 Jet & Rocket Propulsion (3-0-3) (Pre-req: AE3450)
AE 4525 Control Systems Design Lab (1-3-2) (Co-req: AE3521)
*Name change to LMC 3403 pending. The extra hour from LCC 3403 can be used towards free electives. The Technical Communications requirement can also be met using both LCC 4701 and LCC 4702 (for students pursuing the thesis option) or AE 3801 taken during the same semester as AE 3051 (one addition free elective hour will be required)

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Sample Eight Semester Curriculum

The undergraduate program may be completed over an eight-semester period, provided the student carefully plans his or her curriculum in consultation with the faculty advisor. Below are links to the sample eight semester curriculum. Your advisor may ask to follow a slightly different curriculum based on your qualifications (e.g. AP or transfer credit) and availability of the course.

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Scheduling and Grade Requirements

Only free elective courses may be taken pass/fail. All other curriculum courses must be taken on a credit basis.
NEW: All students registered for any 1000 or 2000 level course will receive a midterm grade for that course. This grade will be either an **S**(atisfactory) or a **U**(nsatisfactory) and will be based on homework, quizzes, tests, etc. While this grade will not directly affect your GPA, it will give you an indication of how well you are doing so that you can take remedial actions as needed. Anyone who receives one or more U grades will be asked to meet with an advisor.
ROTC students may use ROTC courses to satisfy the free elective requirements.
You must earn a grade of C or better in the math or physics courses. A math or physics course with a D or F grade must be repeated during the next semester that the you are in residence.
No more than two D's in required AE & COE courses (with the exception of AE 1350 and AE 1770) are permitted. You will not be allowed to turn in a degree petition unless you have scheduled all the courses required to remove these deficiencies during the graduating semester.

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Scheduling and Grade Requirements

Only free elective courses may be taken pass/fail. All other curriculum courses must be taken on a credit basis.

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Academic Standing

Academic standing is based on both the Term grade point average and the Overall average of the student. The minimum Term and Overall grade point average for a student to be on GOOD standing is as follows **:

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Georgia Tech Grading System

See description of grades.

Read more

Cross Registration

With the approval of the student's major school, a GT student may schedule courses at any of the colleges or universities comprising the Atlanta Regional Consortium for Higher Education (ARCHE"), but only IF SUCH COURSES ARE NOT AVAILABLE in a particular term at Georgia Tech.

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Petition To The Faculty

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Sample Eight Semester Curriculum

Sample Eight Semester Curriculum

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B.S. Aerospace Engineering

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Other Academic Requirements

Constitution and History Examinations

Georgia law requires that before receiving an undergraduate degree in this state, all students must demonstrate competence in United States and Georgia history and constitutional government. (A student may satisfy this requirement by passing two examinations administered by the Department of Social Sciences or by successfully completing HIST 2111, HIST 2112, POL 1101, PUBP 3000 or INTA 1200.) The most up-to-date information can be obtained from the Registrar at this link.

Read more

Miscellaneous Academic Regulations

General

The information provided below has been assembled by AE from many sources to make it more readily available to students. However, the most current and the **authoritative** source for all information about academic regulations can be found at the Registrar's web page under the Student Tab.

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Academic Support Services

The Office of Success Programs offers a free tutorial service. One-on-one tutoring in calculus, physics and chemistry is available to all students. For information, visit www.success.gatech.edu.

OMED (Office of Minority Educational Development) offers a **free tutorial service available to ALL undergraduates.** Tutoring is available in mathematics, science and many engineering courses. Tutoring sessions are in the Library. For information, call 894-3959.

The School of Mathematics provides a walk-in tutoring service in the Math Lab for any Tech student in a freshman level mathematics course. The Math Lab is located in room 257 of the Skiles Building. The hours are posted each semester.

If you need preparation for the Regents' Examination, the English Department offers courses (ENGL. 0012 and 0015) and a workshop to improve reading and writing skills. Freshman English courses also include a unit on the Examination.

Students having academic and/or personal problems may also seek assistance from the Student Counseling and Career Planning Center. Each semester, the center offers workshops to help Tech students succeed academically, professionally, and personally. Typical programs include life and career exploration, study skills, intercultural studies, stress and anxiety reduction, assertiveness training, and depression and motivational problems. Their telephone number is 894-2575.

Students are also invited to make use of the Center's computerized Systematic Interactive Guidance and Information system (SIGI) for assistance in determining career interests and aptitude and the Computer Assisted Study Skills Instruction (CASSI) for improving study skills. The center also offers personal counseling to assist students in dealing with personal, motivational, or study problems. Counselors are available for individual sessions by appointment. To make an appointment, call 894-2575.

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Students who maintain the necessary high academic scholarship may participate in the five-year cooperative program and receive the degree Bachelor of Science in Aerospace Engineering, Cooperative Plan. Students interested in more information about the co-op program or in applying for admission to the cooperative plan should contact the Cooperative Division Office.

While on work semesters, students in the co-op program may receive academic advice by contacting their AE Advisor (go to the AE web page faculty listing or the APPOINTMENT SCHEDULER). It is important for cooperative students to check periodically with the AE Academic Office (Knight 312) to make sure they are aware of revisions in AE course schedules or curriculum.

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The Dual Degree program was established to allow students to combine a typical liberal arts program with the technological curriculum offered by Georgia Tech. Under this program, a student attends a liberal arts college for three years and then comes to Georgia Tech for two years. Upon completion of the program, the student receives both a bachelor of arts or science degree from the liberal arts college and a bachelor's of science degree in an engineering or science field from Georgia Tech. Participating in this program are most of the colleges and universities of the University System of Georgia, the Atlanta University Center colleges, and other selected colleges and universities from around the nation.

Although Dual Degree students do not formally transfer their credit upon matriculation at Georgia Tech, they are considered as transfer students and must satisfy ***all*** of the requirements of the BSAE program. During the registration period for the first semester of residence at Tech, the Dual Degree student should meet with Dr. Lakshmi Sankar to arrange the initial semester's schedule. Dr. Sankar will evaluate the transcript for compatibility with Georgia Tech Aerospace Engineering Program and recommend a Program of Study.

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Professional and Honor Societies

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Student Organizations:

Student Advisory Council
The Aerospace Engineering Student Advisory Council is composed of students and provides input to the Chair on matters affecting the School.

American Institute of Aeronautics and Astronautics
The AIAA is the professional society for aerospace and other types of engineers worldwide.

American Helicopter Society
The AHS is the professional society for those interested in rotorcraft.

Sigma Gamma Tau
The Honor Society for Aerospace Engineers.

Yellow Jacket Flying Club
This is a student run club for current pilots and those who are interested in learning to fly.

Tau Beta Pi
Highest Engineering Honor - Engineering students who show superior scholar-ship and leadership as well as integrity and breadth of interest, both inside and outside of engineering, are recognized by Tau Beta Pi. Undergraduate students who rank in the top eighth of their junior class are considered for membership.

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The Second Undergraduate Degree option is available for students who have received an undergraduate degree in another discipline at Georgia Tech or from some other school. To earn a BSAE degree, the student must satisfy all of the requirements of the Aerospace Engineering program including a minimum of 36 semester hours in excess of the requirements for the previous degree.

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Read more

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