



SYRACUSE UNIVERSITY ENGINEERING & COMPUTER SCIENCE

Undergraduate Student Handbook

2016-2017



October 2016

Dear First-Year Students:

On behalf of the students, faculty, and staff of the College of Engineering & Computer Science, I am delighted to have this opportunity to welcome you into our community. We are all looking forward to working alongside you to help make sure that your experience as an E&CS student is both rewarding and successful.

The next several years will be a challenging and exciting time for you. As you embark on an E&CS undergraduate program that will help prepare you to become a future leader in engineering and computer science, you can look forward to receiving the enthusiastic support of faculty and staff who are firmly committed to your success.

Your success as an E&CS student will be based, in part, upon the choices that you make over the course of the next several years. With that in mind, we have assembled this handbook for your use. Please think of this handbook as a resource guide that is available to you and your faculty advisor as you meet to discuss your academic goals and plans.

Inside this handbook, you will find information on rules, regulations, procedures, and worksheets that relate to your program of study. These materials will help you to keep track of your academic progress and will also provide you with important guidelines for registration, advising, and program-of-study adjustments. You will find that sections of this handbook refer you to a separate document, *The University Bulletin: Academic Rules and Regulations*, which is available online <http://coursecatalog.syr.edu/index.php> .

Perhaps the most important and valuable resource that is available to you is the assistance and support that you find from your advisor and from the staff members of your department and the E&CS Student Records Office. Our door is always open to your thoughts, ideas, concerns, and accomplishments - please feel free to share them with us at any time. For your information, our office is located at 130 Link Hall; telephone number 315-443-5191.

We all wish you the very best for continued success, good health, and happiness.

Warm regards,

A handwritten signature in cursive script that reads 'Julie M. Hasenwinkel'.

Dr. Julie Hasenwinkel
Associate Dean for Academic & Student Affairs

SYRACUSE UNIVERSITY

**COLLEGE OF ENGINEERING
AND
COMPUTER SCIENCE**

**UNDERGRADUATE STUDENT HANDBOOK
2016-2017**

Prepared by Nicole Adkins

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DIRECTORIES

E&CS Student Services Directory

Title	Name	Office Location	Phone Number
Dean's Office Suite			
Dean of Engineering & Computer Science	Dr. Teresa Dahlberg	223 Link Hall	315-443-4341
Assistant to the Dean	Stephanie Vasta	223 Link Hall	315-443-4341
Senior Associate Dean	Dr. Can Isik	223 Link Hall	315-443-3604
Assistant to the Associate Dean	Susan Karlik	223 Link Hall	315-443-3604
Associate Dean for Academic & Student Affairs	Dr. Julie Hasenwinkel	223 Link Hall	315-443-2545
Director Computer & IT Services (help@ecs.syr.edu)	Jim Spoelstra	210 Link Hall	315-443-1227
Fax Number	Dean's Office	223 Lin Hall	315-443-4936
Student Success Center			
Director of First-Year & PRIDE Programs	Kathryn Pynn	121 Link Hall	315-443-2582
Program Coordinator First-Year	Sarah Mack	121 Link Hall	315-443-3513
First Year Student Advisor – A-I	Giovanna Colosi	125 Link Hall	315-443-3978
First Year Student Advisor – J-Z	John Kulak	127 Link Hall	315-443-2582
Director of Career Development & Service Learning	Karen Davis	121 Link Hall	315-443-2582
Career Services Coordinator	Jennifer Squire	121 Link Hall	315-443-2582
Fax Number	Student Success Center	121 Link Hall	315-443-1065
E&CS Admissions Office			
Assistant Dean for Student Recruitment	Kathleen Joyce	123 Link Hall	315-443-1044
Undergraduate Recruitment Specialist	Jonathan Hoster	123 Link Hall	315-443-1044
Graduate Recruitment Coordinator	Terri Monto	123 Link Hall	315-443-1044
E&CS Student Records Office			
Director of Student Records & Study Abroad	Maria Marceau	129 Link Hall	315-443-5191
Assistant to the Director	Nicole Adkins	130 Link Hall	315-443-5191
Office Assistant	Dominique Marceau	130 Link Hall	315-443-1326
Fax Number	Student Records Office	130 Link Hall	315-443-4459

Academic Programs Directory

Department Chairs

Department	Chair Name	Office Location	Phone Number
Biomedical & Chemical Engineering	Dr. Radhakrishna Sureshkumar	329 Link Hall	315-443-1931
Civil & Environmental Engineering	Dr. Sam Salem	151 Link Hall	315-443-2311
Electrical Engineering & Computer Science	Dr. Kishan Mehrotra	4-206 Sci Tech	315-443-2562
Mechanical & Aerospace Engineering	Dr. Young Moon	263 Link Hall	315-443-2341

Program Directors

Department	Program Directors	Office Location	Phone Number
Aerospace Engineering	Dr. John Dannenhoffer	263 Link Hall	315-443-2341
Bioengineering	Dr. Pun To (Doug) Yung	329 Link Hall	315-443-1931
Chemical Engineering	Dr. Katie Cadwell	329 Link Hall	315-443-1931
Civil Engineering	Joan Dannenhoffer, Program Coordinator	151 Link Hall	315-443-2311
Computer Engineering	Dr. Qinru Qiu	4-206 Sci Tech	315-443-2562
Computer Science	Dr. Susan Older	4-206 Sci Tech	315-443-2562
Electrical Engineering	Dr. Prasanta Ghosh	4-206 Sci Tech	315-443-2562
Environmental Engineering	Dr. Cliff Davidson	151 Link Hall	315-443-2311
Mechanical Engineering	Dr. Michelle Blum	263 Link Hall	315-443-2311
Systems & Information Science	Dr. Andrew Lee	4-206 Sci Tech	315-443-2562

Research Centers

Center Name	Office Location	Phone Number
Syracuse Biomaterials Institute	318 Bowne Hall	315-443-9185
The Center for Advanced Systems and Engineering (CASE)	2-212 Sci Tech	315-443-1060
Green Data Center	263 Link Hall	315-443-2341
Syracuse Center of Excellence (COE) in Environmental Energy Systems	727 E. Washington Street	315-443-4445

Computer & Information Technology Services

The College of Engineering & Computer Science (E&CS) provides an extensive list of computing resources for its students. There are E&CS customized PCs in numerous faculty labs and in several public labs. In addition to the standard office productivity tools like word processors and spreadsheet programs, there are a broad range of the latest engineering tools (CAD, FEA, math and simulation) and software development tools. A full list of available software at E&CS can be found at <http://helpdesk.ecs.syr.edu>. Also note software that is available for students to download at little or no cost. The E&CS Windows computing labs use the campus NetID and password and all students have a home directory quota of 100GB. All PCs have DVD Optical Drives and USB ports for portable storage. They are located as follows:

- Link 011 (“MADlab”) – 30 PCs
- Link 201- 18 PCs – Open lab for student use only – no classes scheduled
- Link 202 – 33 PCs
- Link 274 – 35 PCs
- CST 3-116 – 40 PCs
- CST 3-231 – 35 MACs

Computer lab schedules and computer availability are located at <http://helpdesk.ecs.syr.edu>.

All E&CS students who need an Linux access:

- Use Xshell or any SSH terminal emulator to connect to ecs-linux.syr.edu
- Use your Net ID and password to login

Please visit the Online Services at <http://listserv.syr.edu> and review your ListServ subscriptions by using the "Subscriber's Corner". It is to your advantage to be subscribed to your class list, so please ensure that you are.

All E&CS Students	ECS-students@listserv.syr.edu
All E&CS Graduates	ECS-grad@listserv.syr.edu
All E&CS Undergraduates	ECS-undergrad@listserv.syr.edu
All E&CS First Year	ECS-2020@listserv.syr.edu
All E&CS Sophomores	ECS-2019@listserv.syr.edu
All E&CS Juniors	ECS-2018@listserv.syr.edu
All E&CS Seniors	ECS-2017@listserv.syr.edu
All E&CS Fifth Year Seniors	ECS-2016@listserv.syr.edu

*****NOTE:** Subscribing to any of the class lists automatically subscribes you to E&CS UNDERGRAD and ECS-STUDENTS where appropriate. You only need to subscribe to your class' mailing list.

For other information about E&CS computing, please visit <http://helpdesk.lcs.syr.edu>. Email questions and requests can be sent help@ecs.syr.edu or by visiting the CIT Help Desk in 204 Link Hall during business hours.

E&CS Student Societies

SOCIETIES		Contact
AIAA	American Institute for Aeronautics & Astronautics	aiaa@syr.edu
AIChE	American Institute of Chemical Engineers	aiche@syr.edu
AOE	Alpha Omega Epsilon Engineering Sorority	aoepsln@syr.edu
ASCE	American Society for Civil Engineers	asce@syr.edu
ASHRAE	American Society of Heating, Refrigerating & Air Conditioning Engineers	ashrae@syr.edu
ASME	American Society for Mechanical Engineers	asme@syr.edu
BMES	Biomedical Engineering Society	bmes@syr.edu
Chi Epsilon	Civil Engineering Honor Society	chiepsln@syr.edu
EWB	Engineers Without Borders	ewb@syr.edu
IEEE	Institute of Electrical & Electronics Engineers	ieee@syr.edu
NSBE	National Society for Black Engineers	nsbe@syr.edu
Pi Tau Sigma	Mechanical Engineering Honor Society	ptausig@syr.edu
SAE	Society of Automotive Engineers	sae@syr.edu
SASE	Society of Asian Scientists and Engineers	sase@syr.edu
SEE	Society of Environmental Engineers	lcssee@syr.edu
SHPE	Society of Hispanic Professional Engineers	lcsshpe@syr.edu
Sigma Gamma Tau	Aerospace Engineering Honor Society	sigmatau@syr.edu
SWE	Society for Women Engineers	swe@syr.edu
Tau Beta Pi	National Engineering Honor Society	taubeta@syr.edu
Theta Tau	National Engineering Fraternity	thetatau@syr.edu

Information about any Student Organizations, including all non-honor societies above, contact the Office Student Activities:

126 Schine Student Center – <http://studentlife.syr.edu> – (315) 443-2718

Academic Calendar

Fall 2016

Deadline	Date
Registration new and readmitted students	Saturday, August 27 & Sunday, August, 28
First day of classes	Monday, August 29
Late registration & Schedule adjustment	Monday , August 29 - Tuesday, September 6
Labor Day (no classes, University Offices Closed)	Monday, September 5
Add deadline	Tuesday, September 6
Grading options deadline to elect Pass/Fail or Audit	Monday, September 12
Financial deadline to drop a class	Monday, September 19
Midterm	Monday, October 17
Academic drop deadline	Monday, October 24
Registration for Spring semester begins	Wednesday, November 9 – January 24
Withdrawal deadline	Friday, November 18
Thanksgiving Break (no classes)	Sunday, November 20 - Sunday, November 27
Last day of classes	Friday, December 9
Reading days	Saturday, December 10, Sunday, December 11; Tuesday, December 13 and Thursday, December 15 (am only)
Final examinations	Monday, December 12, Wednesday, December 14; Friday, December 16; Tuesday, December 13 and Thursday, December 15 (pm only)

Spring 2017

Deadline	Date
Registration new and readmitted students	Saturday, January 14
Martin Luther King Day (no classes, University Offices Closed)	Monday, January 16
First day of classes	Tuesday, January 17
Late registration & Schedule adjustment	Monday , January 17 – Tuesday, January 24
Add deadline	Tuesday, January 24
Grading options deadline to elect Pass/Fail or Audit	Tuesday, January 31
Financial deadline to drop a class	Tuesday, February 7
Midterm	Tuesday, March 7
Spring Break (no classes)	Sunday, March 12 – Sunday, March 19
Academic drop deadline	Tuesday, March 21
Registration for Summer begins	Wednesday, March 22
Registration for Fall semester begins	Monday, March 30 - Wednesday, May 10
Withdrawal deadline	Tuesday, April 18
Last day of classes	Tuesday, May 2
Reading days	Wednesday, May 3; Saturday, May 6; Sunday, May 7
Final examinations	Thursday, May 4; Friday, May 5; Monday, May 8 – Wednesday, May 10

Summer 2017

UC Summer Session	May 15 – August 11
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E&CS Academic Integrity

All formal education is a partnership between teachers and students. This partnership works best when all involved share common values and goals. To achieve this, students must clearly understand what is expected of them (and what they should expect of themselves) and teachers must reciprocate by making their educational objectives and expectations clear. When these objectives and expectations are fulfilled, all involved can have a rewarding and empowering experience.

Engineering and Computer Science are *professions*. The possession of a B.S. in an engineering or computer science discipline asserts that not only has its possessor mastered core educational requirements but also has experience of working in teams and presenting the resulting data to varied audiences. It is important that understanding of the privileges and responsibilities of an engineering or computer science degree be communicated by faculty and understood by student.

The college follows the Syracuse University Academic Integrity Policies and Procedures, which can be found at the following link. The college Committee on Academic Affairs manages the academic integrity hearings and the chair of that committee serves as the college's Academic Integrity Officer.

View the Academic Integrity Office <http://academicintegrity.syr.edu/>

First-Year Programs and Programs Rooted In Developing Excellence (PRIDE)

At **Syracuse University's College of Engineering and Computer Science (E&CS)**, we are committed to the success of each individual. This commitment to student success is at the heart of E&CS First-Year Programs and Programs Rooted In Developing Excellence (PRIDE). It is a commitment that is found not only in our classrooms, but also in the programs and experiences that we provide to our students. These opportunities support our students' development in the academic, personal, and professional skills that are so critical for success and leadership in today's society.

PRIDE

PRIDE provides programming that meets the needs of and fosters excellence in the educational, professional, and personal development of all undergraduate students. PRIDE is also committed to helping students develop leadership skills through involvement in recognized organizations. The activities, leadership opportunities, and community service projects sponsored by the organizations are important to the students, the college, the University, and the local Syracuse community, as they prepare to be future societal leaders.

Academic Excellence Workshop (AEW)

The **Academic Excellence Workshop (AEW)** is an optional active-learning program offered to students taking Pre-Calculus, Calculus I, II, and III. It has also been expanded to several key engineering foundation courses and higher level mathematics courses.

AEW delivers a unique approach to calculus instruction by supplementing classroom teaching through a highly interactive, small-group session. Trained undergraduate facilitators, who excelled in the course previously, work with six to eight students who have volunteered for the extra time commitment week required by AEW. The facilitators present the AEW participants with a worksheet developed in conjunction with the course instructor that reinforces key principles recently taught in class. The facilitator is trained not to do the work for the students, but to encourage them to work in teams, using the language of the course to solve the problems.

The result is a lively, interactive session where students work together to solve problems that enhance their understanding of the subject material. The goal of AEW is to encourage subject mastery, and not merely memorization. At the same time, students develop strengths in other areas to, including their communication, teamwork, problem solving, and presentation skills.

Pathfinders

Students helping students. That is the goal of the Pathfinders, a group of upperclassmen who assist first-year and transfer students in their transition to life as new members of the SU community. Pathfinders offer guidance, support, and friendship to new students in the first semester and beyond. The Pathfinder program is designed to facilitate positive interaction as well as provide new students with the tools to be successful as a college student in E&CS and at Syracuse University.

Success Coaching Program

Our Success Coaches are here to help you define, clarify, and achieve your personal and academic goals! Your appointments with a Success Coach are tailored to **YOU**: your interests, grades, goals, and talents. Whether you're tackling current academic struggles or seeking ways to enhance your learning experiences, your Success Coach will help you maximize your options. Success Coaches are here to help you make the most of your college experience. The Success Coaches offer both group and individual sessions on an array of topics, such as, how to improve academic performance through study habit development, better time management and improved organizational skills.

Professional Engineering Societies

Student chapters of professional engineering societies focus on student success by providing academic support to members, including tutoring, study circles, and mentoring.

Student societies also promote professional development by hosting guest speakers from industry, and by sponsoring visits to area companies. Other activities include participation in regional and national conferences and competitions where students enjoy additional opportunities to network with their peers from other schools and with professionals from industry. Students often join several societies to share common interests, network, and prepare for life beyond college.

Additional information on E&CS Student Societies can be found at <http://studentactivities.syr.edu>.

Study Groups & Tutoring Services

Study Groups and Tutoring Services are available to help students achieve academic excellence in E&CS through study groups and tutoring for various courses. You can get current information about these groups in the Student Success Center in 121 Link Hall or by viewing the E&CS Student Success Center Guide on the SU Guides app available at <http://guidebook.com>.

It is important for all E&CS students to recognize that good study technique includes studying together. You master course content more thoroughly, with better retention when you explain it to others. Successful students not only join study groups, they start them. We encourage all E&CS students to do both. It is one of our priorities to help students interested in forming study groups. If you would like some assistance, please stop by and let us know of your interest.

For Additional Information Contact:

Kate Pynn, Director
First-Year and PRIDE Programs
Student Success Center
121 Link Hall
(315) 443-2582
1styear@ecs.syr.edu

Student Career Opportunities

Cooperative Education Program

The E&CS Cooperative Education program (Co-op) empowers undergraduate students to take advantage of experiential learning opportunities that have proven to aid them in successfully reaching their post graduate goals. The Co-op program consists of full-time professional work primarily during the summer. This design allows students the opportunity to gain more than six months of paid work experience in their field of study and still graduate in four years. Working during the academic year is an option that students may choose, with the understanding that their ability to graduate on time may be affected. To be eligible, students must be enrolled full time in the College of Engineering and Computer Science.

For Additional Co-Op Information Contact:

Karen Davis, Director

121 Link Hall

(315) 443-2239

Study Abroad Program

In a time of rapidly growing global complexity and opportunity, international study is an increasingly important and relevant component of undergraduate study, especially for students preparing for careers in engineering or computer science. Of all the major professions, engineering and computer science are the most likely to involve international activity. In addition to strong technical skills, employers are increasingly looking for international experience, cross-cultural skills by developing a “global mindset” and perspectives, and an understanding of the world's diversity

For over 20 years, the College, in a partnership with SU Abroad, has been a national leader in providing distinctive international study opportunities. These opportunities include:

- Study at SU Centers during Fall or Spring Semesters at: Florence, Hong Kong, Istanbul, Madrid, Santiago, and Strasbourg
- Study at World Partner Programs at affiliated universities at: Dublin, Hong Kong, Istanbul, London, and Sydney
- Summer Research program in Strasbourg

The College of Engineering and Computer Science’s international study programs give students the opportunity to gain global experience, develop new ways of viewing the world, form lasting friendships abroad, and deepen their connection to other countries, languages and cultures. Students with these experiences gain a competitive edge in today's multinational, multicultural environment.

To participate, students must be in good academic standing with a cumulative GPA of 3.0 and in one of Syracuse University's engineering, computer science or systems & information science programs or in an equivalent program elsewhere. Participants must also meet any language requirements of the host country.

Important Application Deadlines

- Spring semester: October 15th
- Summer semester: February 20th
- Fall semester: February 20th

For further information, contact the College of Engineering and Computer Science Study Abroad Office in 130 Link Hall or Syracuse University Abroad or, SU Abroad office at 106 Walnut Place (suabroad.syr.edu).

For Additional Information Contact:

Maria Marceau
Director
129 Link Hall
Syracuse, NY 13244
(315) 443-5191
mcmarce@syr.edu

WiSE

Women in Science and Engineering at Syracuse University

The **WiSE** program fosters current and future success of women in science, technology, engineering, and mathematics (STEM) through programs designed to address their unique strengths and challenges at every stage from entering freshman to accomplished professional

Student and faculty involvement and commitment make WiSE one of the most successful women's programs at Syracuse University.

Key Goals of WiSE

- Positively impact persistence in STEM for undergraduate women through an emphasis on research.
- Support professional development, degree completion and/or career preparation for women graduate students and post-doctoral fellows.
- Increase resilience, support advancement and improve career and personal productivity and balance for women STEM faculty.
- Build a strong community and social network for women in STEM.

For Additional Information Contact:

Sharon Alestalo
WiSE Program Manager
335 Link Hall
(315) 443-3419
swalesta@syr.edu
www.suwise.syr.edu

Stephanie Wyatt
WiSE Program Assistant
267/269a Link Hall
(315) 443-2313
smwyatt@syr.edu

Campus Office Directory

General Information Number

Main Campus
315-443-1870

School and College Offices

School of Architecture

201 Slocum Hall
315-443-2256
soa.syr.edu

The College of Arts and Sciences

329 Hall of Languages
315-443-3150
thecollege.syr.edu

School of Education

111 Waverly Avenue, Suite 230
315-443-2506
soe.syr.edu

College of Engineering and Computer Science

223 Link Hall
315-443-2545
eng-cs.syr.edu

David B. Falk College of Sport and Human Dynamics

300 MacNaughton Hall
315-443-3144
falk.syr.edu

School of Information Studies

343 Hinds Hall
315-443-2911
ischool.syr.edu

Martin J. Whitman School of Management

721 University Avenue
315-443-2361
whitman.syr.edu

S.I. Newhouse School of Public Communications

316 Newhouse 3
315-443-4722
newhouse.syr.edu

University College

700 University Avenue
315-443-YesU (9378)
yesu.syr.edu

College of Visual and Performing Arts

200 Crouse College
315-443-2517
vpa.syr.edu

Campus Offices

The Advocacy Center

111 Waverly Avenue, Suite 006J
315-443-7273
advocacycenter.syr.edu

Bookstore

Schine Student Center
303 University Place
315-443-9900
bookweb.syr.edu

Bursar Operations

Bowne Hall
315-443-2444
bursar@syr.edu
bursar.syr.edu

Career Services

235 Schine Student Center
315-443-3616
careers@syr.edu
careerservices.syr.edu

Counseling Center

200 Walnut Place
315-443-4715
counselingcenter.syr.edu

Department of Public Safety (includes lost and found)

005 Sims Hall
315-443-2224,
On-Campus Emergency 711
publicsafety.syr.edu

Office of Disability Services

804 University Avenue, Suite 309
315-443-4498
disabilityservices.syr.edu

Financial Aid and Scholarship Programs

Bowne Hall
315-443-1513
finmail@syr.edu
financialaid.syr.edu

Health Services

111 Waverly Avenue
315-443-9005
health.syr.edu

Hendricks Chapel

315-443-2901
hendricks.syr.edu

Higher Education Opportunity Program (HEOP)

804 University Avenue, Suite 009
315-443-3867
oss.syr.edu/heop

Housing, Meal Plan, and ID Card Service Center

206 Steele Hall
315-443-2721, #1
housing@syr.edu
housingmealplans.syr.edu

Information Technology and Services

1-227 Life Sciences Complex

315-443-2677

help@syr.edu

its.syr.edu

Lesbian, Gay, Bisexual, and**Transgender (LGBT) Resource Center**

750 Ostrom Avenue

315-443-3983

lgbt@syr.edu

lgbt.syr.edu

Library

222 Waverly Avenue

315-443-2093

library.syr.edu

Office of Multicultural Affairs

105 Schine Student Center

315-443-9676

oma@syr.edu

multicultural.syr.edu

Recreation Services, Department of

241 Archbold Gymnasium

315-443-4FUN (4386)

recreationsservices.syr.edu

Registrar's Office

106 Steele Hall

315-443-2422

syr.edu/registrar

Renée Crown University Honors Program

306 Bowne Hall

315-443-2759

honors.syr.edu

Office of Residence Life

111 Waverly Avenue, Suite 200

315-443-3637

orl.syr.edu

ROTC, Air Force

122 Lyman Hall

315-443-2461

afrotc.syr.edu

ROTC, Army

122 Lyman Hall

315-443-2462

armyrotc.syr.edu

Slutzker Center for International Services

310 Walnut Place

315-443-2457

lescis@syr.edu

international.syr.edu

Office of Student Assistance

306 Steele Hall

315-443-4357

Student Association

126 Schine Student Center

315-443-2650

sa.syr.edu

Student Employment Services

210 Steele Hall

315-443-2268

seo.syr.edu

Syracuse University Abroad

106 Walnut Place

315-443-3471

suabroad.syr.edu

Tutoring and Study Center

111 Waverly Avenue, Suite 220

315-443-2005

tutoring.syr.edu

Office of Students Rights & Responsibilities

310 Steele Hall

315-443-3728

students.syr.edu/judicial

Syracuse University Statement on Academic Advising

Academic Advising

Academic advising is an essential component of a Syracuse University education. The University is committed to providing the individual advice and assistance that students need at every step throughout their degree programs. A successful system of academic advising is highly dependent upon a shared commitment of students, faculty, and staff to process and availability of timely, accurate information.

Students are responsible for scheduling, preparing for, and keeping advising appointments; for seeking out contacts and information; and for knowing the basic requirements of their individual degree programs. Students bear the final responsibility for making their own decisions based on the best information and advice available and, ultimately, on their own judgment.

Advisors are responsible for developing a thorough knowledge of the degree requirements within the student's program of study and a working knowledge of academic options and resources throughout the University. Advisors are expected to involve students by encouraging them to ask questions, gather information, and explore options so that they may develop a meaningful academic plan. Advisors will be available to students on a regular basis, monitor their advisees' progress, assist in considering career options, and make appropriate referrals to other campus offices.

The University, through its schools and colleges, pledges to support a campus-wide network of faculty, staff, and student peer advisors by providing them with a clear and firm foundation of information regarding policies, procedures, resources, and programs. The University is committed to help faculty and staff develop effective advising and support services, and to make improvements where necessary. The University also acknowledges the important contribution advisors make to the community through appropriate recognition within the institutional reward system.

Academic Dishonesty

The following statement is drawn from the General Academic Rules and Regulations of Syracuse University.

****Please see Pg 15 for the College of Engineering & Computer Science Academic Integrity Policy**

Academic Standard – Plagiarism

The submission of any work by a student is taken as a guarantee that the thoughts and expressions in it are the student's **own except** when properly credited to another.

Violations of this principles include giving or receiving aid in an exam or where otherwise prohibited, fraud, plagiarism, the falsification or forgery of any record, or any other deceptive act in connection with academic work. Plagiarism is the representation of another's words, ideas, programs, formulae, opinions, or other products of the work as one's own, either overtly or by failing to attribute them to their true source. Sanctions for violations will be imposed by the dean, faculty, or Student Standards Committee of the appropriate school or college. Documentation of such academic dishonesty may be included in an appropriate student file at the recommendation of the academic dean.

In keeping with this University regulation, the College of Engineering and Computer Science has adopted the following statement of policy concerning academic dishonesty:

An instructor may respond to a suspected infraction by one of two means:

A. When the infraction is confined to the limits of the course s/he may handle it personally or s/he may refer to the matter to the Associate Dean.

The maximum sanction, which may be assigned by the instructor, is a course grade of F. Lesser sanctions related to evaluation of course work may be assigned by the instructor at his/her discretion. An instructor assigning any sanction will notify the student of his/her right to appeal to the Associate Dean of the College. When the grade, "F", for the course is assigned, it must be reported to the Department Chair and to the Associate Dean who will also notify the student by letter of his/her right to appeal.

It is desirable that a charge of cheating or some other infraction be made in the presence of either the Associate Dean or some other responsible witness.

This is to protect the rights both of the student and of the faculty member involved.

B. When the infraction involves the purchase, distribution, or the sale of the papers, examinations or answers, the matter must be referred to the Associate Dean.

More serious infractions, such as illegal entry or forgery of University documents, will be handled as outlined in the General and Undergraduate Academic Rules Regulations.

Academic Policies and Procedures

Academic Probation and Suspension Policy

Students are placed on academic probation when their academic records fail to meet specific **minimum criteria for progress** toward degree completion.

- 1) Term or cumulative GPA less than 2.0 and Less than 2.0 Mathematics, Science and E&CS course GPA (IST courses for SIS majors)
- 2) Completion of less than 12 credits hours in one semester or 24 credits hours within any 12-month period
- 3) Failure to complete at least 6 credits and term GPA less than 1.5, will result in immediate suspension
- 4) Failure to complete calculus sequence by the end of the sophomore year (MAT 295, 296, & 397) (Does not apply to SIS majors)
- 5) In addition to the above conditions, computer science students only: GPA of less than 2.667 in core courses
- 6) Failure to maintain satisfactory progress toward your degree
- 7) Failure to meet special conditions of previous semester

Students may be suspended from the College of Engineering and Computer Science if they do not achieve the minimum GPA.

HOURS COMPLETED refers to credit hours toward the degree program and includes all transfer credits. Minimum GPA refers to the cumulative grade point average for courses taken at Syracuse University. Students classified as Juniors or Seniors (54 credit hours or more) must have at least a 2.00 cumulative average, whether or not they are transfer students.

For **GRADUATION**, students must have at least a 2.00 cumulative GPA and at least a 2.00 GPA in all E&CS, mathematics, and science course taken at Syracuse University. In addition, students must meet all degree requirements specific to the chosen major.

Students are placed on academic probation when their academic records fail to meet specific minimum criteria for progress toward degree completion. Probationary status is determined by the Associate Dean for Academic Programs in consultation with program directors. The classifications of probation are listed on the next page.

Probationary status is indicated on the student’s record maintained in the Student Records Office. The following are the various levels of probation status:

STATUS AT BEGINNING OF SEMESTER	STUDENT ACTIONS REQUIRED	SPECIAL CONDITIONS
<p>College Probation (COP)</p> <ul style="list-style-type: none"> • Violation of one or more of the above criteria • A service Indicator of (ECP) was added to your record on MySlice and will be removed at the end of the semester after you meet the special conditions. 	<p>You must meet with:</p> <p>_____</p> <p>On:</p> <p>_____</p> <p>If you are not able to keep this appointment, you must email your Program Director to reschedule within the first 10 days of classes.</p>	<p>You must attain a minimum of 2.50 semester grade point average.</p> <p><input type="checkbox"/> You must complete the following course(s) earning a grade of “C+” or better:</p> <p>_____</p> <p><input type="checkbox"/> You must meet with:</p> <p>_____</p>
<p>Probation – One Semester Trial (PST)</p> <ul style="list-style-type: none"> • GPA less than 1.75 • Violation of 3 or more of the above criteria • A service Indicator of (ECT) was added to your record on MySlice and will be removed at the end of the semester after you meet the special conditions. 	<p>You must meet with:</p> <p>_____</p> <p>On:</p> <p>_____</p> <p>If you are not able to keep this appointment, you must email your Program Directors to reschedule within the first 5 days of classes..</p>	<p>You must attain a minimum of 2.50 semester grade point average.</p> <p><input type="checkbox"/> You must complete the following course(s) earning a grade of “C+” or better:</p> <p>_____</p> <p><input type="checkbox"/> You must meet with:</p> <p>_____</p>
<p>Academic Suspension Ineligible to Register (IRE)</p> <ul style="list-style-type: none"> • GPA less than 1.50 • No improvement while on PST • Violation of 5 or more of the above criteria 		

Probation with Advice to Withdraw

Students are placed on Probation with Advice to Withdraw (**PAW-ECW**) because they are not following an ECS program of study and are taking courses that will enable them to transfer to another school/college at SU. These students must make significant progress toward achieving the desired “Intra-University Transfer (IUT)” guidelines, or they will be suspended.

Students on PAW **may not** return to ECS unless exceptional circumstances have been met and approved by the Associate Dean.

Please see the link below for other school/college IUT requirements:

http://coursecatalog.syr.edu/content.php?catoid=3&navoid=270#Intra-University_Transfer

Advising

All Engineering and Computer Science students are assigned professional or faculty advisors. The advisor signs all academic forms (add/drops, petitions). Each semester, prior to registration, students meet with their advisors to discuss the upcoming semester and to prepare for registration. It is important to plan carefully for this meeting to be sure that you will be taking the appropriate courses. You should also feel free to meet regularly with your advisor during the term to discuss program plans for the next term as well as any problems or concerns you may have.

Please feel free to let your advisor know about the good things that are happening to you (scholarships, awards, activities). The more an advisor knows about you, the better equipped they will be able to advise and to make suggestions and recommendations.

Professional or faculty advisor assignments may be changed for the following reasons:

1. **Student Request** – A student who prefers another advisor should see the Student Records Office in 130 Link Hall.
2. **Student Change of Major** – A student who changes his/her major will have a professional faculty advisor from the new academic unit assigned to them.
3. **Advisor Department** – When faculty advisors leave their academic units or the University, their advisees are reassigned to another advisor in the same program. The new advisor will advise these students until they complete their degree requirements.
4. **Advisor on Leave of Absence** – If faculty advisors are unable to meet with their advisees during registration or during the academic year, their students are assigned temporary advisors. This is not a permanent assignment; when regular advisors return they will resume their advising duties.

Advanced Credit Examinations

Matriculated Syracuse University students may earn credit in an SU course by taking an Advanced Credit Examination. The examination must be approved by the department chair concerned, the student's advisor, and the Associate Dean. It is administered and graded by a member of the faculty. Only A, B, and C grades are acceptable as passing grades. Both credits and grade points are recorded on the student's transcript. By University policy, this option may not be used to repeat a course and flag the first course grade.

For more information, including examination fees, refer to the General Academic Rules and Regulations and to the booklet on Tuition, Fees and Related Policies <http://bursar.syr.edu/wp-content/uploads/2016/06/2016-2017-Tuition-and-fees-booklet.pdf> .

Advanced Placement Examinations

Syracuse University is authorized to award academic credit to students who have successfully passed examinations administered by Advanced Placement Program of the College Entrance Examination Board (CEEB). Scores from these examinations must be sent from the agency administering the examination directly to the College. Since the award of credit for AP courses depends on academic major, students should contact their academic advisors or the Student Records Office (130 Link Hall) for additional information.

Academic credit for AP examinations is indicated in the student's record. Advanced Placement Examinations are scored 1 through 5. A score of at least 4 is required for the award of up to 8 credits. These credits count just as if the student has taken the corresponding course while in

college although no grades are assigned. The credits are counted toward the total required for the degree.

****Please see page 40 for the AP Table.**

Auditing Courses

Students may audit courses with the approval of the appropriate department and subject to the restrictions made by the instructor.

Students auditing courses may not be responsible for fulfilling the academic requirements of the course and, therefore, do not receive academic credit for auditing courses. Audited courses appear on student transcripts with a grade of AU, which means no academic credit was earned. Audited courses do not affect the calculation of the grade point average, nor do they count toward hours for graduation. Tuition charges for audited courses are published annually by the Bursar's Office in the booklet <http://bursar.syr.edu/wp-content/uploads/2016/06/2016-2017-Tuition-and-fees-booklet.pdf>

Students must decide by the end of the second week of classes whether or not they wish to audit a course. They may not rescind their selection of the audit option after the first two weeks of classes. Students may drop or withdraw from an audited course in accordance with standard procedures. See the Student Records Office in 130 Link Hall if you need assistance.

Change of Major

In order to select or change a major, students must obtain a formal approval from the department chair or program director of the new major. Students may do this by obtaining a Change of Major Petition in the Student Records Office or the E&CS <http://eng-cs.syr.edu> , and following the procedure below:

1. Meet with Chairperson or Program Director of the new major.
2. Complete a Petition Form clearly stating the current Major and the new major.
3. Obtain the signature of the Chairperson or the Program Director of the new major. A review of the student's file may be necessary before making a decision. If the petition is approved, the Chairperson will assign a new faculty advisor to the student.

Corrected Grades

Once a grade has been reported, it may not be changed except to correct a clerical error. If an error has been made in reporting the grade, the instructor must submit a Change of Grade Form with accompanying documentation of the need for the change to the Chair of department in which the course was taught. The form will then be sent to the student's home college and finally submitted to the Registrar's Office. UNDER NO CIRCUMSTANCES MAY A STUDENT HAND-CARRY A CHANGE OF GRADE FORM

Dean's List

The minimum semester grade point average for the Dean's list is 3.40. Students earning Dean's List standing are notified each semester by a congratulatory notice from the Dean's Office; the name will be posted in their hometown local newspaper and will be posted online. The Dean's List will be generated one week after semester grades are posted on Myslice. To be eligible for Dean's List recognition, the students must have earned a minimum of 12 graded credits and must have no missing or incomplete grades.

Flagging Courses

Students who transfer into the College of Engineering and Computer Science and who have accumulated courses that cannot be included in the new program of study may petition to have these courses flagged for exclusion from the calculation of the grade point average (GPA) following admission to the College. The flagged courses and grades are not deleted from the transcript. Students should be aware such action could affect their eligibility for TAP awards. The consequences with regard to TAP eligibility could be positive or negative. Students are advised to consult with a financial aid counselor BEFORE initiating the action of flagging courses.

Any course with a D or F may be retaken. A course may be flagged up to two times: the higher of the two (or three) grades will be counted in the GPA. For courses retaken more than once, the lower grade may be flagged by petition.

Graduate Level Courses

E&CS students may register for graduate level courses (600 level) under the following conditions:

1. A senior whose overall academic record normally would qualify him or her for admission to the Graduate School may enroll in a 600-level course for undergraduate credit by petition and must have the approval of:
Instructor, Department Chairperson and Associate Dean
2. Graduating seniors who anticipate enrolling in the Graduate School of Syracuse University may submit a petition to the Graduate School to request graduate credit.
Courses taken for graduate credit may not be applied toward an undergraduate degree.

Graduation Honors

Graduation honors are based on the following cumulative grade point averages:

Cum Laude.....3.400
Magna Cum Laude.....3.600
Summa Cum Laude.....3.800

Students must complete at least 60 credit hours at Syracuse University in order to be eligible for graduation honors.

Incompletes

The symbol of I (Incomplete) may be granted to a student only if it can be demonstrated that it would be unfair to hold the student to the normal time limits of the course. Illness or other exceptional circumstances are the usual basis for consideration. To receive an Incomplete, a student must complete a Request for Incomplete Form, available in the Student Records Office. The form becomes a contract between the student and the course instructor, specifying the reasons for granting the Incomplete and the conditions and time limit for removing it.

An Incomplete grade is calculated as an F in the grade point average immediately. A student may graduate with Incompletes outstanding provided the cumulative average equals or exceeds 2.0 and the number of earned credits meets the requirements for the degree. This decision should be made with great care; once a student has graduated, s/he can not remove the Incomplete from her/his transcript. It remains a part of the permanent record.

Incompletes are not removed by re-registering for the course. Even though an instructor may require a student to repeat certain elements of a course to remove an Incomplete, the student should not register for the course a second time.

Further information concerning the removal of an incomplete can be found in the Academic Rules and Regulations, in the Undergraduate course catalog.

Independent Study

Students who wish to explore a special problem or study an area in which a formal course does not exist must submit a plan of study using the Proposal for Independent Study Form. The plan must be approved by the supervising instructor or faculty sponsor, the student's faculty advisor, the course department chair, and the Associate Dean for Academic Programs. The form must be submitted to the Registrar's Office in 106 Steele Hall. Students should check carefully with their faculty advisors and with the Associate Dean prior to registering for an Independent Study to be sure that the course will be accepted toward the completion of requirements for a degree.

Intra-University Transfer (IUT)

1) Transfer Into the College of Engineering and Computer Science. (IUT-IN)

Students who wish to transfer to any program within the College of Engineering and Computer Science should have a strong record of achievement and demonstrated success in key technical courses. Specifically, it is critical for the applicant to excel in following and meet GPA requirements:

- Complete at least one of MAT 295, 296 or 397 with a grade of B- or better
- Complete at least one set of PHY 211/221 or CHE 150/151 with a grade of B- or better
- A minimum 3.0 cumulative grade point average

2) Transfer into Computer Science (CIS) programs only:

Students who wish to major in CIS must also complete the following:

- CIS 252 with a grade of at least a B (3.0), along with the above requirements

Obtain an Intra-University Transfer Form (IUT) from the Student Records Office, 130 Link Hall or on-line: <http://www.syr.edu/registrar/forms/index.html>

Submit the completed IUT Form. If there are any special circumstances that should be noted at the time the application is reviewed, they should be attached to the application.

At the end of each semester and following receipt of the latest grades, applications are reviewed by the Associate Dean and the appropriate Academic Chair. The schedule for review is as follows:

Applications for	Reviewed	Student notification
<i>Fall Semester</i>	<i>Dec-Jan</i>	<i>January</i>
<i>Spring Semester</i>	<i>May</i>	<i>June</i>

3) Transfer Out of the College of Engineering and Computer Science. (IUT-OUT)

- Obtain an Intra-University Transfer Form (IUT) from the Student Records Office, 130 Link Hall or online: <http://www.syr.edu/registrar/forms/index.html>
- Check with the college/school into which you wish to transfer. Many have special requirements and application deadlines.
- Obtain the signature of the accepting (new) Dean.
- Submit the IUT form to the Registrar's Office, 106 Steele Hall

4) Transfer To University College (Part-time Study)

Please note the following special rules and regulations regarding an IUT into University College (UC).

- Students registered on the Main Campus during the spring semester may not transfer to UC for the purpose of summer study.
- Students who have completed eight regular semesters as a full-time student may petition to complete the remaining eleven or less credit hours at UC tuition rates and still receive a Main Campus diploma. These students do not transfer to UC.

Leave Of Absence and Withdrawal

Students desiring to take a Leave of Absence from the University must initiate such action in the Student Records Office, 130 Link Hall. Students should indicate the approximate date they intend to return to the University.

If a student takes a Leave of Absence before midterm, all courses are dropped from the transcript. Only the effective date of the leave of absence is recorded on the transcript.

After midterm, courses for which the student was registered remain on the transcript and grades of WD are recorded. Following the deadline to receive a WD, an F grade is recorded for all courses unless an approved petition has been filed with the Registrar's Office. Students who take a leave of absence may not receive incomplete grades in courses for which they were registered. Only grades of WD or F can be recorded on the transcript.

Missing Grades

Missing grades (grades not reported by the instructor) do not calculate into the student's grade point average. The student should contact his/her instructor to determine why a grade is missing from the record. If the instructor cannot be located, the student should see the Chair of the department in which the course was taught.

To report a missing grade, the instructor submits a Missing Grade Report to the Chair of the department in which the course was taught. The form will then be sent to the student's home college and finally submitted to the Registrar's Office. **UNDER NO CIRCUMSTANCES MAY A STUDENT HAND-CARRY A MISSING GRADE REPORT.**

Never Attended- (NA)

The grading symbol "NA" is used when a student has registered for a course and one of the following conditions applies:

- the student never attended the course
- the student stopped attending the course so early in the semester that no basis for evaluation exists.

The "NA" means that student failed to exercise his/her responsibility to withdraw officially from the course.

Pass/Fail Option

For students in Engineering majors: only social science, humanities, and free elective courses at the 300 level or higher may be taken pass/fail. Elective courses that must be taken from a specified list may not be taken pass/fail. The total hours of pass/fail courses permitted cannot exceed 18 credit hours.

For students in Computer Science major: only free elective courses may be taken pass/fail.

Petitions

Petition forms may be obtained in the Student Records Office, 130 Link Hall or online <http://www.syr.edu/registrar/forms/index.html> . When petitioning, students must obtain the following signatures (in this order), unless otherwise noted below:

1. Faculty Advisor
2. Department Chair or Program Director
3. Associate Dean

Example: you may petition to take a course in place of another; or you may petition to take an overload of courses, more than 19 credits; or you may petition to fulfill your Social Science/Humanities requirements with only Social Sciences, etc.

Students are responsible for checking with the Registrar's Office and/or the Student Records Office to make sure the petition has been processed.

Petitions should be written as clearly and concisely as possible. They should contain all pertinent information since, in many cases, they are used in place of an interview. If the intention of the petition is not clear, it may be returned to the student for further clarification, and thus, delay the processing.

Readmission/Termination of Leave of Absence

Students who have taken a leave of absence or been withdrawn from the University must apply for readmission through the E&CS Student Records office 130 Link Hall, Syracuse, NY 13244, (315) 443-5191. **Readmission** is contingent on space availability in the college and in the program to which the student seeks readmission. It is also dependent on the student's ability to demonstrate potential for completing the program of study successfully.

A student suspended for academic reasons is eligible to apply for readmission after at least one calendar year has elapsed from the date of the suspension. A student suspended for other reasons is eligible to apply for readmission according to the terms of the suspension. Students may be placed on academic probation for the first semester after reentering the University.

If the Leave of Absence from the University was for health reasons, the attending physician must submit a medical evaluation of the student's present state of health to the Office of the Vice President for Student Affairs, 306 Steele Hall, Syracuse, NY 13244-1120, (315) 443-4357. Health clearance must be granted by Student Affairs before an application for readmission can be considered.

Registration

Syracuse University uses a computerized registration system known as MySlice. E&CS undergraduate students are put on Advising Hold and must meet with their advisor before they can register.

Repeating a Course

It is not necessary to petition to retake a course that was failed. Equivalent courses taken at other institutions are not counted as repeated courses. Courses may not be repeated after a student receives an undergraduate degree.

Any course with a D or F may be retaken. A course may be flagged up to two times: the higher of the two (or three) grades will be counted in the GPA. For courses taken more than once, the two earlier grades may be flagged by petition.

New York State TAP Recipients

REPEATED COURSES/TAP ELIGIBILITY

For purposes of TAP eligibility, a student must be enrolled full time (a minimum of 12 credits per semester). In some circumstances, the credits for repeating a course in which a student has already received a passing grade may not be included in the determination of full time enrollment for TAP purposes. If you have questions about this determination, you may contact the TAP coordinator in the Bursar's Office, 443-2444.

Please Note:

WE HAVE BEEN REQUESTED BY THE OFFICE OF STUDENT ASSISTANCE TO ALERT STUDENTS TO THE FOLLOWING STATEMENT REGARDING REASONABLE ACADEMIC PROGRESS:

"University, state, and federal regulations require that students receiving financial aid make reasonable academic progress toward a degree. This entails completing one-sixth of the program of study for each year of attendance. Financial aid progress regulations are established separately and may differ from your college's academic progress regulations. If you suspect your aid could be in jeopardy you should make an appointment with your Financial Aid Counselor."

Registration for More Than 19 Credit Hours (overload)

Undergraduate students who wish to register for more than 19 credits must present an approved petition to the Bursar's Office. The petition, available from the Student Records Office, 130 Link Hall, must be approved by the student's advisor and the Associate Dean.

Juniors and seniors with a grade point average of at least 3.5 or higher cum GPA, with no outstanding incomplete grades and registered as a fulltime student at Syracuse University for the preceding two semesters, may take an overload without added tuition by completing the above petition.

Honors students may sign up for this credit overload in the Honors Office. (For more information see the most current version of Tuition, Fees, and Related Policies).

Schedule Adjustment

Adding Courses during the first week of classes

During the first week of the semester (see Academic Deadlines in section I), students may change their schedules (adding and/or dropping courses) using MySlice on the web at www.MySlice.syr.edu. If a student is on **advising hold**, he/she must meet with his/her advisor, and fill out and advising form. These forms are available in the Student Records Office.

The Faculty or Professional Advisor signature is required on the E&CS Advising Form for all undergraduate students in E&CS programs of study.

The advisor will keep a copy of the form in the student's folder. Student will drop off a copy of the E&CS Advising Form to the Student Records Office who will then process the removal of the advising hold within a 24 hour period.

Dropping a Course after the first week of classes

Students may drop courses up to the Academic Deadline for Dropping Courses. The add/drop form is used for this purpose. Forms are available at the Student Records Office, or from the Registrar's Office, 106 Steele Hall.

The following signatures/stamps are required on the add/drop form:

1. Advisor
2. Course Instructor
3. E&CS stamp, provided by Student Records Office in 130 Link Hall

The form must be delivered to the Registrar's Office, 106 Steele Hall. Courses dropped by the deadline date are not recorded on the student's transcript and are not counted in the calculation of the grade point average.

PLEASE NOTE: If you fail to complete a course (as a result of dropping, withdrawing, failing, or receiving an incomplete grade) you **will not** be able to register for additional courses for which the uncompleted course is a prerequisite.

ALSO NOTE: Courses with start and end dates different from those published in the Time Schedule of Classes may have different add/drop deadlines. For example, during the summer sessions, the last day to drop a course with a tuition refund is one week after the first day of classes. See the booklet, "Tuition, Fees, and Related Policies" for a complete statement of the University's policy regarding the effect of add/drops on tuition charges.

Summer Courses

Students wishing to take summer courses at Syracuse University should contact University College, Division of Continuing Education, 700 University Ave, Syracuse, NY 13244, (315) 443-4174 for enrollment information.

Students wishing to obtain transfer credit for summer courses taken at another university must meet the requirements below:

1. Complete a Transfer Credit Approval Petition prior to taking the course
 - The Petition must contain:
 - ❖ The name of the school
 - ❖ The Name, number of the course & number of credits for each course
 - ❖ A description of each course from an official catalog, bulletin, or school website.
 - ❖ The equivalent S.U. course.
 - ❖ Any special circumstances, i.e., students who plan to transfer into the college of E&CS should state this clearly
 - Obtain the advisor's and department chairperson of the students major signature
 - Return the petition to the Student Records Office
2. Receive a grade of **C** or better (pass/fail grades are not acceptable)
3. No petition is needed if the course has been previously approved. See the list of approved courses in the Transfer Credit database http://lcs3.syr.edu/forms/transfer_credit.asp.
4. Have an official transcript showing the course taken sent to:

Syracuse University
College of Engineering & Computer Science
Student Records Office
130 Link Hall
Syracuse, New York
13244-1240
P:315-443-5191***F:315-443-4459
Attn: Maria Marceau

Students should check the regulations of the school they are planning to attend as early as possible since many schools require written permission for non-matriculated students to register.

Withdrawal from a Course

Students may withdraw from a course up until two weeks before the last day of classes. A WD will appear on the student's record but will not be counted in the grade point average.

Withdrawal petitions are available in the Student Records Office. The petition must be completed by the student and then the following signatures must be obtained:

1. Course Instructor
2. Student's Advisor
3. Associate Dean for Academic Programs

Submit a withdrawal petition to the Registrar's Office, 106 Steele Hall.

Withdrawal petitions will not be accepted after the deadline.

All University Requirements

English Courses for Foreign Students

All international students (and all students whose English is not their primary language) must take the English Language Assessment (ELA) upon arrival at Syracuse University. The results will determine what sequence of Writing or English courses must be taken. The sequence becomes a requirement for graduation in the College of Engineering and Computer Science and meets the University writing requirement. This sequence may result in extra credit hours required for graduation.

NOTE: Remedial English courses (ENL 201,202,203,205,207) do not count towards degree requirements.

Writing Courses

Writing Studio I and II (WRT 105,205) are required for all students. Some students may satisfy the requirement by scoring 4 or 5 on the Advanced Placement English Language & Composition Exam of the CEEB or by earning 6 credits in SU's Project Advance English course.

ENL 211 and 213, fulfill Syracuse University's writing requirement for undergraduate students. Thus, after completing these courses, a student has taken the equivalent of WRT 105 and 205 and is ready to enroll in any other writing course that may be required.

All-College Requirements

Introduction to Engineering and Computer Science

All first-year E&CS students are required to complete ECS 101, Introduction to Engineering and Computer Science. You will be registered for a section of this course by the major you have chosen or by the designation, undeclared. The section for each major is taught by a faculty member from that major; the sections for undeclared students are taught by senior faculty members in the College who have a broad, general knowledge of the majors. In the course, you will receive an introduction to each major offered in the College. In addition, you will spend the semester working with other students and a faculty instructor in developing a baseline of mathematical and scientific skills which you will apply in future course work.

Mathematics

All E&CS students **except Comp E & Comp Sci** are required to complete the following calculus courses, MAT 295, MAT 296, and MAT 397. All programs of study require additional mathematics courses beyond these three courses.

Natural Sciences

All E&CS students are required to complete at least one semester of calculus-based physics. All programs of study require additional natural science courses beyond the physics course.

Physical Education Courses (PED)

Physical Education Courses are not required.

For Aerospace or CIS Majors: PED courses may be used for free-elective credit only.

Remedial Courses

The following courses are considered by the College Faculty to be remedial and credit for these courses will not be counted toward the total credit hour requirement for graduation:

ENL 201 – Intermediate English for Non-Native Speakers
ENL 202 – Intermediate English for Non-Native Speakers
ENL 203 – Speaking and Listening for Non-Native Speakers of English
ENL 205 – Intensive Intermediate English for Non-Native Speakers
ENL 207 – Advanced Integrated Skills for Non-Native Speakers of English
MAT 193 – Algebra Infused Pre-Calculus
MAT 194 – Pre-Calculus

ROTC Courses

An ROTC course, which is cross-listed, with another Syracuse University course is treated in the same manner as the cross-listed course and may thus be used to satisfy degree requirements. ROTC courses, which are not cross-listed, will not count toward degree requirements. For CIS students, the courses, which are not cross-listed, may be used for free-elective credit.

Senior Year

Degree Works is available on MySlice, this is a web-based tool to help students and advisors monitor a student's progress toward degree completion.

Degree Works combines Syracuse University's degree requirements and the coursework a student has completed into an easy-to-read worksheet that helps to show a student what courses and requirements still need to be completed.

Responsibility for the verification of information in this report rests with you, the student. Final verification of all degree requirements are done by your department and Student Records Office.

This should be done prior to registration for the final semester. It is advisable that you do a preliminary check before registration for the final two semesters.

File Diploma Request

When an undergraduate student attains Junior standing (54 credits or more), the File Diploma Request link becomes available under Student Services in MySlice. Students must use this link to specify the term in which they intend to graduate and to provide information for their diploma. Students must also contact their home school or college to review all graduation requirements.

Diplomas & Status Verification

Graduating students notify the University of their intent to graduate through the File Diploma Request process, accessed through MySlice. This process must be completed to ensure inclusion in the degree certification review process and receipt of commencement information and, eventually, a diploma. Any questions or problems about diplomas should be directed to the Diploma Office, 106 Steele Hall, (315)443-2222.

During the interim period between certification and the receipt of the diploma, students may request a letter verifying their degree from the Student Records Office, 130 Link Hall. After you have received your diploma your degree can be verified through the [National Clearinghouse](#).

Graduation

All students must have a minimum cumulative GPA of 2.00 and at least a 2.00 GPA in all ECS, Math & Science courses taken at Syracuse University. In addition, students must meet all degree requirements specific to their chosen major. Seniors graduating in May or August may attend the May Commencement Ceremony. December graduates attend graduation ceremonies held in the following May. For more information concerning commencement, contact the Special Events Office, 210 Women's Building, 443-4631.

In addition to commencement, there is an annual College Convocation for seniors and their parents. All graduates are welcome to attend this event. Information about the E&CS Convocation will be available during the Spring Semester.

Professional Engineer Exam

The fundamentals of Engineering Exam is the first part of the licensing process in New York State. The exam is given twice a year. For more information please visit the Student Success Center, 121 Link Hall, 443-2582.

Undesignated/Free Electives

Any course approved by the faculty advisor may be assigned to the undesignated or free area. These may be technical or social science/humanities courses. **For engineering majors**, physical education and remedial courses may not be included.

Advance Placement Examinations

Exam Subject/Title	Minimum Score	Awardable Credit	Equivalent SU Course	Recommending School/College	Additional School/College Requirements or Qualifications
Art/Drawing	5	3	Studio Elective	Visual and Performing Arts	<i>Visual and Performing Arts</i> Does not count toward Art and Design Freshman Foundation studio courses.
Art/2-D Design	5	3	Studio Elective	Visual and Performing Arts	<i>Visual and Performing Arts</i> Does not count toward Art and Design Freshman Foundation studio courses.
Art History	3	6	HOA 105,106	Arts and Sciences	
Biology	4	8	BIO 121, 123 and 124	Arts and Sciences	
Chemistry	3 or 4 5	3 8	CHE 103 CHE 106/107 & 16/117	Arts and Sciences	<i>Arts and Sciences</i> Only a score of 5 counts as a sequence in natural sciences and mathematics. Pre-medical students should consult with health professions advising before accepting AP chemistry credit.
Chinese	3 4	4 4	CHI 102 CHI 201	Arts and Sciences Arts and Sciences	<i>Public Communications</i> Must also place out of CHI 102 (with a score of 3) or CHI 201 (with a score of 4 or 5) on the placement exam.
Comparative Government & Politics	4	3	PSC 123	Arts and Sciences	
Computer Science A or Computer Science AB	3	3	CPS 196	Engineering and Computer Science	<i>Engineering and Computer Science</i> Students will receive this credit only upon approval of their department chair.
English Language and Composition	4	6	WRT 105-205	Arts and Sciences	<i>Education</i> (Inclusive) will accept a score of 3 only after a grade of B+ or higher is earned in an SU writing course.
English Literature and Composition	4	6	ETS151 (or 117 or 118 or 152 or 153) and WRT 105	Arts and Sciences	<i>Arts and Sciences</i> Students scoring 4 or better will receive 3 credits for ETS 151 . Such students who subsequently elect to take ETS 151 may transfer the credit to one of the following: ETS 117 , 118 , 152 , or 153 . 3 additional credits are awarded for WRT 105
Environmental Science	3	3	EAR 200	Arts and Sciences	
European History	4	6	HST 111,112	Arts and Sciences	
French Language & Culture	3	4	FRE 102	Arts and Sciences	<i>Public Communications</i> Must also place out of FRE 102 on the placement examination
German Language & Culture	3	4	GER 102	Arts and Sciences	<i>Public Communications</i> Must also place out of GER 102 on the placement examination
Human Geography	4	3	GEO 105 or 171	Arts and Sciences	
Latin	3 4 5	4 4 7	LAT 102 LAT 201 LAT 201,320	Arts and Sciences	<i>Public Communications</i> Must also place out of LAT 102 on the placement examination
Italian Language and Culture	3	4	ITA 102	Arts and Sciences	<i>Public Communications</i> Must also place out of ITA 102 (with score of 3) or ITA 201 (with score of 4 or 5) on the placement exam.
Japanese language and Culture	3 4	4 4	JPS 102 JPS 201	Arts and Sciences	<i>Public Communications</i> Must also place out of JPS 102 (with a score of 3) or JPS 201 (with a score of 4 or 5) on the placement examination
Macroeconomics*	4	3	ECN 102	Arts and Sciences	
Microeconomics*	4	3	ECN 101	Arts and Sciences	
Mathematics—Calculus AB	3 4	3 6 or 4	MAT 285 MAT 285 and 286 or MAT 295	Arts and Sciences	<i>Engineering and Computer Science</i> 4 credits awarded for MAT 295 only, pending results of the math placement examination
Mathematics—Calculus BC	4	8	MAT 295,296	Arts and Sciences	<i>Engineering and Computer Science</i> Up to 8 credits awarded for MAT 295 only, pending results of the math placement examination.
Mathematics—Calculus BC-AB sub-score	3 4	3 6 or 4	MAT 285 MAT285 and 286 or MAT 295	Arts and Sciences	<i>Arts and Sciences</i> Exemption from Quantitative Skills and substitute for MAT 285 in natural sciences and mathematics.
Mathematics Level II†	3	3	MAT 194	Arts and Sciences	
Music Theory	3	3	HOA/MTC 125	Arts and Sciences	
Physics B	3	8	PHY 101,102	Arts and Science	<i>Education</i> (Inclusive) will accept a score of 3 only after a grade of B+ or higher is earned in an SU lab/science course.
Physics C (Mechanics)	3	4	PHY 101 or 211,221	Arts and Sciences	
Physics C (Electricity and Magnetism)	3	4	PHY 102 or 212,222	Arts and Sciences	
Psychology	4	3	PSY 205	Arts and Sciences	
Spanish Language	3	4	SPA 102	Arts and Sciences	<i>Public Communications</i> Must also place out of SPA 102 on the placement examination
Spanish Literature	3 4	4 4	SPA 102 SPA 201	Arts and Sciences	<i>Public Communications</i> Must also place out of SPA 102 (with a score of 3) or SPA 201 (with a score of 4 or 5) on the place examination
Statistics	3	3 or 4	MAT121,221 or STT101	Arts and Sciences	<i>Management</i> Credit accepted as MAS 261
U.S. Government & Politics	4	3	PSC 121	Arts and Sciences	
U.S. History	4	6	HST 101,102	Arts and Sciences	
World History	4	6	HST 121, 122	Arts and Sciences	

Partial List of acceptable Social Science/ Humanities courses:

Social Sciences Division

AAS (African American Studies)	PAF (Public Affairs)	NAT (Native American Studies)
HST (History)	*HNR (Honors)	WGS (Women's & Gender Studies)
PSY (Psychology)	*GEO (Geography)	LAS (Latin American Studies)
*ANT (Anthropology)	PSC (Political Science)	
MAX (Maxwell)	SAS(South Asian Studies)	
SOC (Sociology)	MES (Middle Eastern Studies)	
ECN (Economics)		

Humanities Division

AAS (African American Studies)	LIN (Linguistics)	HOM & HOA (Art & Music Histories)
HST (History)	REL (Religion)	LAS (Latin American Studies)
PHI (Philosophy)	LIT (Literature)	MES (Middle Eastern Studies)
*ANT (Anthropology)	*HNR (Honors)	NAT (Native American Studies)
HUM (Humanities)	All Foreign Languages	SAS (South Asian Studies)
QSX (LGBT)	WGS (Women's & Gender Studies)	
ETS (English Textual Studies)		

See back of curriculum sheets for Major specific requirements

Not a Social Science / Humanities courses

Course Prefix	Course Number
ANT	131
ANT	433
CFS	Any number
GEO	155
GEO	215
GEO	316
GEO	326
GEO	482
GEO	455
HNR	250
HNR	255
HNR	350
HNR	355
HNR	450
HNR	455
PSY	223
PSY	323
PSY	324
PSY	334

For the complete list of exceptions please see the course catalog

<http://coursecatalog.syr.edu/index.php> .

Curriculum Requirements

Aerospace Engineering Curriculum

College of Engineering and Computer Science											
Aerospace Engineering					Name _____						
Fall 2016					SUID _____						
pr=prerequisite, co=corequisite											
Minor/Second Major (if any): _____											
CREDIT	FIRST-YEAR/SOPHOMORE				JUNIOR		SENIOR		VAR		
	GRADE	F	S	F	S	F	S	F		S	+/-
MATHEMATICS (15)											
MAT295	Calculus 1	(4)	4								
MAT296	Calculus 2 (pr: MAT 295 min C-)	(4)		4							
MAT397	Calculus 3 (pr: MAT 296 min C-)	(4)			4						
MAT485	Diff Eqn & Matrix Algebra for Engrs (pr: MAT 397)	(3)				3					
SCIENCES (12)											
CHE106	General Chem Lecture I (co: CHE 107)	(3)	3								
CHE107	General Chem Lab I (co: CHE 106)	(1)	1								
PHY211	General Physics 1 (co: PHY 221, MAT 295)	(3)		3							
PHY221	General Physics Lab 1 (co: PHY 211)	(1)		1							
PHY212	General Physics 2 (pr: PHY 211, 221, co: PHY 222, MAT 296)	(3)			3						
PHY222	General Physics Lab 2 (co: PHY 212, MAT 296)	(1)			1						
WRITING SKILLS/SOCIAL SCIENCE/HUMANITIES (15)											
WRT105	Studio 1: Practices of Academic Writing	(3)	3								
WRT205	Studio 2: Critical Research and Writing (pr: WRT 105)	(3)		3							
SSH Elective	_____	(3)	3								
SSH Elective	_____	(3)		3							
SSH Elective	_____	(3)			3						
PROGRAM CUSTOMIZATION (15)											
Course1	_____	(3)				3					
Course2	_____	(3)					3				
Course3	_____	(3)						3			
Course4	_____	(3)							3		
Course5	_____	(3)								3	
ENGINEERING (23)											
ECS101	Intro. to Engr. & Comp. Sci.	(3)	3								
ECS104	Engr. Comp Tools (co: MAT 295)	(3)		3							
ECS221	Statics (pr: PHY 211, co: MAT 296)	(3)			3						
ECS222	Dynamics (pr: ECS 221, MAT 296)	(3)				3					
ECS325	Mechanics of Solids (pr: ECS 221, co: MAT 397)	(4)				4					
ECS326	Engr. Materials, Prop. & Proc.	(3)			3						
ELE231	Elec. Engr. Fundamentals 1 (pr: MAT 295)	(3)					3				
ELE291	Elec. Engr. Laboratory 1 (co: ELE 231)	(1)					1				
AEROSPACE ENGINEERING (48)											
AEE342	Aerodynamics (pr: MAE 341)	(4)					4				
AEE343	Compressible Flow (pr: MAE 251, MAE 341)	(3)					3				
AEE427	Aircraft Performance & Dynamics (pr: MAE 341)	(4)						4			
AEE446	Propulsion (pr: AEE 343)	(3)						3			
AEE471	Des. & Anal. of Aero. Struct. (pr: ECS 325)	(4)						4			
AEE472	Syn. of Aerospace Systems (pr: AEE 427)	(4)							4		
AEE577	Space Flight (pr: ECS 222)	(3)							3		
MAE251	Thermodynamics (pr: PHY 211)	(4)			4						
MAE284	Intro to Design (pr: ECS 101)	(3)			3						
MAE312	Engineering Analysis (pr: ECS 104, MAT 485)	(3)				3					
MAE315	Mech/Aero Lab I (pr: ECS 325, co: MAE 341)	(3)				3					
MAE321	Dynamics of Mech. Systems (pr: ECS 325, ECS 222, MAT 485)	(3)					3				
MAE322	Control Systems for MAE (pr: MAT 414 or 485, co: MAE321)	(3)					3				
MAE341	Fluid Mechanics (pr: ECS 221, MAT 397, PHY 211)	(4)				4					
TOTAL CREDITS			128	17	17	17	17	17	16	14	13

AEROSPACE ENGINEERING
Curriculum Notes
2016-2017

1. There are a total of 24 elective credits in the B.S. AEE program. These credits may be distributed in one of the following two ways:

Option 1: A student may complete any University minor or second major that requires at least 12 credit hours beyond the core AEE curriculum. In addition to, or as part of, this minor or second major, at least 9 credit hours must be taken from the social sciences or humanities (SS/H). Excluding those courses that count towards the minor or second major, a maximum of 6 credit hours that are neither SS/H nor technical electives may be taken as part of the 24 elective credits.

Option 2: A student who does not complete a University minor or second major must take at least 9 credits from the social sciences or humanities (SS/H), at least 6 credits of technical electives, and a maximum of 6 credit hours that are neither SS/H nor technical electives.

2. Technical electives consist of all 300 level and above courses offered by any department within the college of engineering and computer science or by the math or physics departments, except for ECS 391, ECS 392 and any course numbered 300, 400 or 500 that is offered outside of the MAE department. However, in some instances, these courses may be approved by petition. In addition, no more than 3 credit hours of technical electives may be taken outside of the MAE department.
3. Many technical electives in the MAE Department are scheduled on a 2-year rotation, so students should make themselves aware of technical elective offerings starting in their third year.
4. Only courses taken (1) for a letter grade, (2) at the 300-level or greater, or (3) offered by the physical education department may be used to satisfy the requirements for the elective credits that are neither SS/H nor technical electives.

Bioengineering Curriculum

College of Engineering and Computer Science										
Bioengineering	Name _____									
Fall 2016	SUID _____									
pr= prerequisite, co=corequisite										
Minor/Second Major (if any): _____										
	CREDIT	FIRST-YEAR		SOPHOMORE		JUNIOR		SENIOR		VAR
	GRADE	F	S	F	S	F	S	F	S	+/-
MATHEMATICS (15)										
MAT295 Calculus 1	(4)___	4								
MAT296 Calculus 2 (p: MAT 295 min C-)	(4)___		4							
MAT397 Calculus 3 (p: MAT 296 min C-)	(4)___			4						
MAT485 Diff. Eq. & Matrix Algebra (p: MAT 397)	(3)___				3					
SCIENCES (24)										
CHE106 General Chemistry 1	(3)___	3								
CHE107 General Chemistry Lab 1 (c: CHE 106)	(1)___	1								
CHE116 General Chemistry 2 (p: CHE 106)	(3)___		3							
CHE117 General Chemistry Lab 2 (p: CHE 107, c: 116)	(1)___		1							
CHE275 Organic Chemistry 1 (p: CHE 116)	(3)___			3						
CHE276 Organic Chemistry Lab 1 (p: CHE 117, c: 275)	(2)___			2						
PHY211 General Physics 1 (c: PHY 221, MAT 295)	(3)___		3							
PHY221 General Physics Lab 1 (c: PHY 211)	(1)___		1							
PHY212 General Physics 2 (p: PHY 211,221, c: PHY 222, MAT 296)	(3)___			3						
PHY222 General Physics Lab 2 (c: PHY 212)	(1)___			1						
BIO 327 Cell Biology (p: BIO 121 or BEN 301, CHE 106)	(3)___							3		
WRITING SKILLS/SOCIAL SCIENCE/HUMANITIES (24)										
WRT105 Studio 1: Practices of Academic Writing	(3)___	3								
WRT205 Studio 2: Critical Research and Writing (p: WRT 105)	(3)___			3						
SSH Elective _____	(3)___	3								
SSH Elective _____	(3)___			3						
SSH Elective _____	(3)___				3					
SSH Elective _____	(3)___					3				
SSH Elective _____	(3)___						3			
SSH Elective _____	(3)___							3		
ENGINEERING (18)										
ECS101 Intro. to Engr. & Comp. Sci	(3)___	3								
ECS104 Engr. Comput. Tools (c: MAT 295)	(3)___		3							
ECS221 Statics (p: PHY 211, c: MAT 296)	(3)___			3						
ECS326 Engr. Materials, Prop. & Proc.	(3)___					3				
ELE231 Elec. Engr. Fundamentals 1 (p: MAT 295, PHY 211)	(3)___			3						
ELE232 Elec. Engr. Fundamentals 2 (p: ELE 231)	(3)___					3				
BIOENGINEERING (40)										
BEN212 Exp. Methods in BMCE (p: MAT 296, ECS 104)	(3)___			3						
BEN231 Mass and Energy Balances	(3)___			3						
BEN301 Biol. Prin. for Engineers (p: CHE 275, MAT 397, ECS 104)	(4)___					4				
BEN333 Fluid Transport (p: MAT 397, PHY 212)	(3)___					3				
BEN341 Heat & Mass Transfer (p: BEN 333, MAE 341, or CIE 327)	(4)___						4			
BEN364 Quantitative Physiology (p: BEN 301)	(4)___						4			
BEN465 Biomechanics (p: ECS 221, MAT 485, BEN 364)	(3)___							3		
BEN468 Biomaterials	(3)___								3	
BEN481 Bioinstrumentation (p: ELE 231, 232)	(3)___							3		
BEN485 Bioengineering Laboratory (c: BEN 465, BEN 481)	(4)___							4		
BEN487 Bioengineering Capstone Design	(3)___								3	
BEN575 Process Control (p: MAT 485)	(3)___						3			
TECHNICAL ELECTIVES (9)										
Tech Elec _____	(3)___							3		
Tech Elec _____	(3)___								3	
Tech Elec _____	(3)___								3	
TOTAL CREDITS										
	130	17	15	16	18	16	17	16	15	

BIOENGINEERING
Curriculum Notes
2016-2017

1. Bioengineering students must complete a minimum of **9 credits of Technical Electives** from mathematics, natural sciences, and engineering courses not included in the required bioengineering curriculum. These courses are intended to be challenging (200-level or higher), although relevant AP credits and introductory biology courses (BIO 121 and BIO 123/124) may also count. The breadth of technical elective options is intended to be flexible to allow students to develop skill-sets for their chosen careers. It is highly recommended that students work with academic advisors to identify technical electives to build towards their long-term career objectives. Technical electives are subject to academic advisor and program director approval, and courses not included in the description above may be approved by petition if found to have sufficient technical content.

2. Bioengineering students must complete a minimum of **18 credits Social Sciences, Humanities, or Foreign Language** using any one of the following options:
 - Option 1:** Complete a minimum of 18 credits from the Social Sciences List* and/or Humanities List* and/or of a foreign language†.

 - Option 2:** Petition to use completion of the Engineering and Computer Science Management minor to complete the Social Science and Humanities elective requirement.

*The Humanities List and Social Sciences List of approved courses are published by the College of Arts and Sciences in the Undergraduate Catalog for Advising (coursecatalog.syr.edu). Students should confirm that a course intended to fulfill this requirement is in one of these lists.

*Please note that the following courses are **NOT** social sciences or humanities: ANT 131, ANT 431, ANT 433, all CFS, GEO 155, GEO 215, GEO 316, GEO 326, GEO 482, GEO 455, HNR 250, HNR 255, HNR 350, HNR 355, HNR 450, HNR 455; PSY 223, PSY 252, PSY 323, PSY 324, PSY 334. This list is not exhaustive.

*Students may count *ECS 392- Ethical Aspects of ECS* towards their Social Science and Humanities elective requirements.

†Foreign language grammar and/or oral practice courses may not be in student's native language. Foreign language courses focused on literature, culture, or linguistics in a student's native language are acceptable.

Chemical Engineering Curriculum

College of Engineering and Computer Science														
Chemical Engineering					Name _____									
Fall 2016					SUID _____									
pr= prerequisite, co=corequisite					(CREDIT)	FIRST YEAR		SOPHOMORE		JUNIOR		SENIOR		VAR
Minor/ Second Major (if any): _____					GRADE	F	S	F	S	F	S	F	S	#-
MATHEMATICS (15)														
MAT295 Calculus 1	(4)_____	4												
MAT296 Calculus 2 (pr: MAT 295 min C-)	(4)_____		4											
MAT397 Calculus 3 (pr: MAT 296 min C-)	(4)_____			4										
MAT485 Diff. Eq. & Matrix Alg. (pr: MAT 397)	(3)_____				3									
SCIENCES (29)														
CHE106 General Chemistry 1	(3)_____	3												
CHE107 General Chemistry Lab 1 (co: CHE 106)	(1)_____	1												
CHE116 General Chemistry 2 (pr: CHE 106)	(3)_____		3											
CHE117 Gen. Chemistry Lab 2 (pr: CHE 107, co: CHE 116)	(1)_____		1											
CHE275 Organic Chemistry 1 (pr: CHE 116)	(3)_____			3										
CHE276 Org. Chemistry Lab 1 (pr: CHE 117, co: CHE 275)	(2)_____			2										
CHE346 Phys. Chem. 1 (pr: CHE 116, MAT 296 co: PHY 212)	(3)_____							3						
CHE347 Phys. Chem. Lab 1 (pr: CHE 275/276, co: CHE 346)	(2)_____							2						
CHE356 Physical Chemistry 2 (pr: CHE 346)	(3)_____									3				
PHY211 General Physics 1 (co: PHY 221, MAT 295)	(3)_____		3											
PHY221 Gen. Physics Lab 1 (co: PHY 211)	(1)_____		1											
PHY212 Gen. Phys. 2 (pr: PHY 211,221, co: PHY 222, MAT 296)	(3)_____			3										
PHY222 General Physics Lab 2 (co: PHY 212)	(1)_____			1										
WRITING/SOCIAL SCIENCES/HUMANITIES (27)														
WRT105 Studio 1: Practices of Academic Writing	(3)_____	3												
WRT205 Studio 2: Critical Research and Wrt (pr: WRT 105)	(3)_____				3									
WRT307 Adv. Wrt Studio: Prof. Wrt (pr: WRT 205)	(3)_____							3						
SSH Elective _____	(3)_____	3												
SSH Elective _____	(3)_____				3									
SSH Elective _____	(3)_____				3									
SSH Elective _____	(3)_____									3				
SSH Elective _____	(3)_____									3				
SSH Elective _____	(3)_____											3		
ENGINEERING (9)														
ECS101 Intro. to Engr. & Comp. Sci.	(3)_____	3												
ECS104 Engr. Comput. Tools (co: MAT 295)	(3)_____		3											
ECS326 Engr. Materials, Prop. & Proc.	(3)_____							3						
CHEMICAL ENGINEERING (36)														
CEN212 Exp. Methods in BMCE (pr: MAT 296, ECS 104)	(3)_____				3									
CEN231 Mass and Energy Balances	(3)_____			3										
CEN252 Chem. Engr. Thermodynamics 1 (pr: CEN 231)	(3)_____				3									
CEN311 Chemical Engineering Lab 1 (co: CEN 341)	(2)_____								2					
CEN333 Fluid Transport (pr: MAT 397, PHY 212)	(3)_____							3						
CEN341 Fund. Of Heat & Mass Transfer (pr: CEN 333)	(4)_____								4					
CEN353 Chem. Engr. Thermodynamics 2 (pr: CEN 252)	(3)_____							3						
CEN412 Chemical Engineering Lab 2 (pr: CEN 341)	(2)_____									2				
CEN542 Mass & Heat Transf. Operations (pr: CEN 341)	(3)_____									3				
CEN574 Process Design (pr: CEN 353, 587)	(4)_____											4		
CEN575 Process Control (pr: MAT 485)	(3)_____								3					
CEN587 Chemical Reaction Engr. (pr: CEN 341, CHE 356)	(3)_____									3				
TECHNICAL ELECTIVES (12)														
Tech Elective _____	(3)_____									3				
Tech Elective _____	(3)_____										3			
Tech Elective _____	(3)_____											3		
CEN Tech Elective _____	(3)_____												3	
TOTAL CREDITS		128	17	15	16	18	17	15	17	13				

CHEMICAL ENGINEERING
Curriculum Notes
2016-2017

3. Chemical engineering students must complete a minimum of **12 credits of Technical Electives** from mathematics, natural sciences, and engineering courses not included in the required chemical engineering curriculum. All technical electives are subject to approval by the student's academic advisor and program director. Courses not included in the description above may be approved by petition if found to have sufficient technical content. **At least one technical elective must be in chemical engineering.**

4. Chemical engineering students must complete a minimum of **18 credits Social Sciences, Humanities, or Foreign Language** using any one of the following options:
 - Option 1:** Complete a minimum of 18 credits from the Social Sciences List* and/or Humanities List* and/or of a foreign language†.

 - Option 2:** Petition to use completion of the Engineering and Computer Science Management minor to complete the Social Science and Humanities elective requirement.

*The Humanities List and Social Sciences List of approved courses are published by the College of Arts and Sciences in the Undergraduate Catalog for Advising (coursecatalog.syr.edu). Students should confirm that a course intended to fulfill this requirement is in one of these lists.

*Please note that the following courses are **NOT** social sciences or humanities: ANT 131, ANT 431, ANT 433, all CFS, GEO 155, GEO 215, GEO 316, GEO 326, GEO 482, GEO 455, HNR 250, HNR 255, HNR 350, HNR 355, HNR 450, HNR 455; PSY 223, PSY 252, PSY 323, PSY 324, PSY 334. This list is not exhaustive.

*Students may count *ECS 392- Ethical Aspects of ECS* towards their Social Science and Humanities elective requirements.

†Foreign language grammar and/or oral practice courses may not be in student's native language. Foreign language courses focused on literature, culture, or linguistics in a student's native language are acceptable.

Civil Engineering Curriculum

College of Engineering & Computer Science									
Civil Engineering					Name _____				
Fall 2016					SUID _____				
pr= prerequisite, co=corequisite									
Minor/Second Major (if any): _____									
CREDIT	FIRST-YEAR		SOPHOMORE		JUNIOR		SENIOR		VAR
GRADE	F	S	F	S	F	S	F	S	+/-
MATHEMATICS (15)									
MAT295 Calculus 1	(4)	4							
MAT296 Calculus 2 (pr: MAT 295 min C-)	(4)		4						
MAT397 Calculus 3 (pr: MAT 296 min C-)	(4)			4					
MAT485 Diff. Equations & Matrix Algebra (pr: MAT 397)	(3)				3				
SCIENCES (16)									
CHE106 General Chemistry I	(3)	3							
CHE107 General Chemistry Lab I (co: CHE 106)	(1)	1							
PHY211 General Physics 1 (co: PHY 221, MAT 295)	(3)		3						
PHY221 General Physics Lab 1 (co: PHY 211)	(1)		1						
PHY212 General Physics 2 (pr: PHY 211, 221, co: PHY 222, MAT 296)	(3)			3					
PHY222 General Physics Lab 2 (co: PHY 212)	(1)			1					
Select one of the following two courses:									
EAR110 Dynamic Earth (4)									
EAR203 Earth System Science (4)									
WRITING SKILLS (9)									
WRT105 Studio 1: Practices of Academic Writing	(3)	3							
WRT205 Studio 2: Critical Research and Writing (pr: WRT 105)	(3)			3					
WRT307 Adv Writing Studio: Professional Writing (pr: WRT 105, 205)	(3)				3				
SOCIAL SCIENCE/HUMANITIES (18)									
(See curriculum notes)									
SSH Elective _____	(3)	3							
SSH Elective _____	(3)		3						
SSH Elective _____	(3)			3					
SSH Elective _____	(3)		3						
SSH Elective _____	(3)					3* or 3			
SSH Elective _____	(3)							3	
ENGINEERING (19/20)									
ECS101 Intro. to Engr. & Comp. Sci.	(3)	3							
ECS221 Statics (pr: PHY 211, co: MAT 296)	(3)			3					
ECS222 Dynamics (3) (pr: ECS 221, MAT 296)	(3)				3				
ECS325 Mechanics of Solids (pr: ECS 221, co: MAT 397)	(4)				4				
CIE/ECS 326 Engineering Materials	(3)							3	
Select One of the Following 2 Courses:									
CIE442 Treatment Proc. In Envir. Engr (pr: CIE 327, CIE 341)							4** or 3		
CIE463 Intro to Sustainable Engr									
CIVIL ENGINEERING (44)									
CIE273 Geomatics and BIM (pr: MAT 295, co: MAT 296)	(3)			3					
CIE274 Civil & Environmental Engr. Systems (pr: CHE 106, MAT 296)	(3)				3				
CIE327/MAE341 Fluid Mechanics (pr: MAT 397, ECS 221)	(4)					4			
CIE329 Prob, Stats and Risk for Civ & Env Engr (pr: MAT 485)	(4)						4		
CIE331 Analysis of Structures and Materials (pr: ECS 325)	(3)					3			
CIE332 Design of Concrete Structures (pr: CIE 331)	(3)						3		
CIE337 Intro to Geotechnical Engineering (pr: ECS 325)	(4)					4			
CIE338 Foundation Engineering (pr: CIE 337)	(3)						3		
CIE341 Intro to Environmental Engr. (pr: CIE 274)	(3)					3			
CIE352 Water Resources Engr. (pr: CIE 327 or MAE 341)	(4)						4		
CIE401 Construction Engineering & Project Management	(3)							3	
CIE443 Transportation Engineering	(3)							3	
CIE475 Capstone Design	(4)								4
ELECTIVES (6)									
Free Elective _____	(3)								3
Tech Elective _____	(3)								3
TOTAL CREDITS	127-128	17	18	17	16	17	17-18	12	13

**CIVIL ENGINEERING
Curriculum Notes
2016-2017**

SS/HUM ELECTIVES

All CIE students are required to complete at least 18 credits of SS/HUM electives. A *minimum* of one course (or 3 credits) must be chosen from each of the three groups of designated courses listed below. The remaining three SS/HUM electives (or 9 credits) can be selected from the lists below or, in addition to the lists, may be chosen from:

- any College of Arts and Sciences courses that are listed on their Humanities and Social Sciences lists in the SU Bulletin – Undergraduate Course Catalog
- any foreign language courses (except student's native language)
- ECS 391 – Legal Aspects of ECS
- ECS 392 – Ethical Aspects of ECS.

Group 1: Economics and Social Issues
ECN 203 – Economics Ideas and Issues
ECN 301* – Intermediate Microeconomics
ECN 302* – Intermediate Macroeconomics
ECN 365* – The World Economy
GEO 353 – Environmental Justice
PSC 383 – Civil Society and Democracy
SOC 101 – Introduction to Sociology
SOC 102 – Social Problems
SOC 363 – Urban Sociology
STS/BPS 101 – Introduction to Science, Technology and Society

* requires ECN203 as prerequisite

Group 2: Global Affairs
ECN 365 – The World Economy
GEO 103 – Environment and Society
GEO 105 – World Geography
GEO 272 – World Cultures
GEO 273 – World Political Economy
MAX 123 – Critical Issues for the U.S.
MAX 132 – Global Community
PAF 351 – Global Social Problems
PSC 124 – International Relations
PSC 355 – International Political Economy

Group 3: Public Policy and Policy Studies
ECN/WGS 358 – Economics of US Poverty & Discrimination
GEO 203 – Society and the Politics of Nature
GEO 314 – Hazardous Geographic Environments
GEO 356 – Environmental Ideas & Policy
PAF 101 – An Introduction to the Analysis of Public Policy
PAF 409+ – Intermediate Analysis of Public Policy
PAF 451 – Environmental Policy
PSC 302- Environmental Politics and Policy
PSC 305 – Congressional Politics
PSC 308 – The Politics of US Public Policy
PSC 312 – Urban Government & Politics
PSC 318 – Technology, Politics & Environment

+ requires PAF101 as prerequisite

Technical Electives

Technical Electives MUST be CIE courses numbered 300 and above. They are to be selected in consultation with a student's advisor to advance the student's knowledge in a specific area of interest in civil or environmental engineering.

Free Electives

Any SU or ESF three or four credit course except Physical Education and remedial courses.

Computer Engineering Curriculum

College of Engineering and Computer Science Computer Engineering Fall 2016										Name _____
										SUID _____
pr= prerequisite, co=corequisite										
Minor/Second Major (if any): _____										
CREDIT	FIRST-YEAR		SOPHOMORE		JUNIOR		SENIOR		VAR	
GRADE	F	S	F	S	F	S	F	S	+/-	
MATHEMATICS (21)										
PHI 251 Logic	(3)	3								
MAT295 Calculus 1	(4)	4								
MAT296 Calculus 2 (pr: MAT 295 min C-)	(4)	4								
MAT331 1st Course in Linear Algebra (pr: MAT 296)	(3)		3							
CIS375 Intro to Discrete Mathematics (pr: PHI 251)	(3)		3							
CIS321 Intro. to Probability and Statistics* (pr: MAT 295)	(4)				4					
SCIENCES (12)										
CHE106 General Chemistry I	(3)	3								
CHE107 General Chemistry I Lab (co: CHE 106)	(1)	1								
PHY211 General Physics 1 (co: PHY 221, MAT 295)	(3)	3								
PHY221 General Physics Lab 1 (co: PHY 211)	(1)	1								
PHY212 General Physics 2 (pr: PHY 211, 221, co: PHY 222, MAT 296)	(3)			3						
PHY222 General Physics Lab 2 (co: PHY 212)	(1)			1						
WRITING SKILLS (9)										
WRT105 Studio 1: Practices of Academic Writing	(3)	3								
WRT205 Studio 2: Critical Research and Writing (pr: WRT 105)	(3)			3						
WRT401 Technical Comm. Design Methodology (pr: WRT 105, 205)	(2)						2			
WRT402 Technical Comm. Prototyping & Constr (pr: WRT 105, 205, 401)	(1)							1		
SOC. SCIENCE/HUMANITIES/GEN. ED. (9)										
ECS392 Ethical Aspects of ECS	(3)				3					
SSH Elective _____	(3)	3								
SSH Elective _____	(3)				3					
ENGINEERING (14)										
ECS101 Intro. to Engr. & Comp. Sci.	(3)	3								
ECS102 Intro. to Computing	(3)	3								
ELE231 Electrical Engr. Fundamentals I (pr: MAT 295)	(3)		3							
ELE232 Electrical Engr. Fundamentals II (pr: ELE 231)	(3)			3						
ELE291 Electrical Lab. 1 (co: ELE 231)	(1)		1							
ELE292 Electrical Lab. 2 (co: ELE 232)	(1)			1						
COMPUTER ENGINEERING (35)										
CSE261 Digital Logic Design	(3)			3						
CSE262 Digital System Design and Simulation	(1)			1						
CSE283 Intro. To Object-Oriented Design (pr: ECS 102)	(3)	3								
CSE381 Computer Architecture (pr: CSE 261, CSE 281)	(3)				3					
CSE382 Algorithms & Data Structures (pr: CSE 283)	(3)		3							
CSE384 Systems Programming** (pr: CSE 281 or CSE 283)	(3)			3						
CSE389 Web Sys Arch, and Programming (pr: CIS 351 or CSE 382)	(3)		3							
CSE397 Computer Laboratory 1 (pr: CSE 261, ELE 292)	(3)				3					
CSE398 Computer Laboratory 2 (pr: CSE 397)	(3)					3				
CSE484 Intro to Computer & Network Security (pr: CIS 486 or CSE 486)	(3)				3					
CSE486 Design of Operating Systems (pr: CIS 341, 342, 351 or CSE 281, 382)	(3)					3				
CSE491 Senior Design Project I (pr: CSE 398)	(1)						1			
CSE492 Senior Design Project II (pr: CSE 491)	(3)							3		
TECHNICAL ELECTIVES (18)**										
Tech Elective _____	(3)					3				
Tech Elective _____	(3)						3			
Tech Elective _____	(3)						3			
Tech Elective _____	(3)						3			
Tech Elective _____	(3)							3		
Tech Elective _____	(3)							3		
NON-ENG./COMP. SCIENCE ELECTIVES (12)***										
Arts & Science Elective _____	(3)					3				
Arts & Science Elective _____	(3)				3					
Non-Eng./Comp. Sci. Elective _____	(3)						3			
Non-Eng./Comp. Sci. Elective _____	(3)							3		
TOTAL CREDITS										
	130	17	17	16	18	18	16	15	13	

*CIS321 can be waived if a student takes both MAT521 and MAT525. ** Every year, technical electives will be selected as Group A courses, at least two of them have to be selected ***At least 6 of the 12 credits must be from the College of Arts & Sciences.

**Computer Engineering
Curriculum Notes
2016-2017**

Technical Electives

Students fulfill 18 credits of technical electives by completing at least 6 credits from group A technical electives and the remaining from group B technical electives. Special topic technical courses, which from time to time are offered, may be assigned to either group A or group B as determined by Computer Engineering program committee. Every year the computer engineering program committee will review the list and may make change(s).

Group A (at least 6 credits):

- ❖ Please see the Program Director for a list of courses.

Group B (remaining credits):

Any CSE, ELE, CIS course 300 Level or above can be considered as a Group B elective

The Computer Engineering Program Committee will determine if a specific 'special topics' course can be used to fulfill the technical elective requirement.

Social Sciences and Humanities Electives

This 6-credit requirement for SSH electives may be fulfilled by any combination of courses whose contents are in the social science and humanities area. A glossary of course designations with such contents can be found in the Humanities Division and the Social Sciences Division of the College of Arts and Sciences with the exception of the following Anthropology - Physical courses: ANT 131, 331, 431, 432, and 433. These glossaries are given in The College of Arts and Sciences section of the Undergraduate Catalog.

Non-Engineering/Computer Science Electives

The purpose of this 12-credit requirement of non-engineering/computer science elective courses is to provide students with a broad educational experience in a diversity of subjects.

More specifically, technical courses offered by (or crosslisted with) the College of Engineering and Computer Science (ECS), courses with pass/fail grades, CPS courses, and 100-level courses in CHE, MAT, and PHY cannot be used to satisfy this requirement. IST courses will require permissions from academic advisors.

General Information

Note that you cannot take CIS 554 – Object-Oriented Programming in C++, to fulfill any requirement in the Computer Engineering undergraduate program. This is because a considerable amount of material covered in this course overlaps with the material covered in the core course CSE 283 – Introduction to Object-Oriented Design.

Note that CPS courses cannot be taken to fulfill any of the requirements for the Computer Engineering undergraduate program. These courses are designed for non-majors in Computer Engineering or in Computer Science.

Minors

In order to promote interdisciplinary study and facilitate the pursuit of minors, students may use up to 6 credits of technical electives towards completing minor requirements (in programs other than MAT and ELE). In this case, at least 6 credits of technical electives have to be from Group A (shown above). This special rule applies only when a student actually completes a minor requirement.

Electrical Engineering Curriculum

College of Engineering and Computer Science										
Electrical Engineering					Name _____					
Fall 2016					SUID _____					
pr= prerequisite, co=corequisite										
Track: _____										
Minor: _____										
CREDIT	FIRST-YEAR		SOPHOMORE		JUNIOR		SENIOR		VAR	#-
	GRADE	F	S	F	S	F	S	F		
MATHEMATICS (19)										
MAT295	Calculus 1	(4)	4							
MAT296	Calculus 2 (pr: MAT 295 min C-)	(4)		4						
MAT397	Calculus 3 (pr: MAT 296 min C-)	(4)			4					
MAT485	Diff Eqn & Matrix Algebra for Engrs (pr: MAT 397)	(3)				3				
CIS321	Probability and Statistics (pr: MAT 295)	(4)					4			
SCIENCES (15)										
CHE106	General Chemistry I	(3)	3							
CHE107	General Chemistry I Lab (co: CHE 106)	(1)	1							
PHY211	General Physics 1 (co: PHY 221, MAT 295)	(3)		3						
PHY221	General Physics Lab 1 (co: PHY 211)	(1)	1							
PHY212	General Physics 2 (pr: PHY 211, 221, co: PHY 222, MAT 296)	(3)			3					
PHY222	General Physics Lab 2 (co: PHY 212)	(1)			1					
	Science/Math Elective _____	(3)							3	
WRITING SKILLS (12)										
WRT105	Studio 1: Practices of Academic Writing	(3)	3							
WRT205	Studio 2: Critical Research and Writing (pr: WRT 105)	(3)			3					
WRT307	Adv. Writing Studio: Professional Writing (pr: WRT 205)	(3)				3				
WRT401	Adv. Wrkshp Tech Com: Desgn Mthd (pr: WRT 105, 205)	(2)						2		
WRT402	Adv. Wrkshp Tech Com: Proto. & Constr. (pr: WRT 105, 205, 401)	(1)						1		
SOC. SCIENCE/HUMANITIES/GEN. ED. (18)										
	SSH Elective _____	(3)	3							
	SSH Elective _____	(3)		3						
	SSH Elective _____	(3)			3					
	ECS392 Ethical Aspects of ECS	(3)						3		
	Non-Tech Elective _____	(3)		3						
	Non-Tech Elective _____	(3)							3	
ENGINEERING (10)										
ECS101	Intro. to Engr. & Comp. Sci.	(3)	3							
ECS102	Intro. to Computing	(3)		3						
ECS 204	Mathematical Programming for Engineers	(1)			1					
CSE261	Digital Logic Design	(3)				3				
ELECTRICAL ENGINEERING (36)										
ELE231	Electrical Engr. Fundamentals I (pr: MAT 295)	(3)			3					
ELE232	Electrical Engr. Fundamentals II (pr: ELE 231)	(3)				3				
ELE291	Electrical Engr. Lab. I (co: ELE 231)	(1)			1					
ELE292	Electrical Engr. Lab. II (pr: 291, co: ELE 232)	(1)				1				
ELE314	Intro to Power Engineering (pr: ELE 231)	(3)					3			
ELE324	Electromagnetics I (pr: MAT 397, PHY 212)	(3)					3			
ELE331	Digital Circuits & Systems (pr: ELE 232)	(3)					3			
ELE333	Analog Circuits (pr: ELE 231, 232)	(3)						3		
ELE346	Semiconductor Devices* (pr: PHY 212)	(3)			3					
ELE351	System and Signal Analysis (pr: ELE 232, MAT 296)	(3)					3			
ELE391	Digital Circuits Laboratory (pr: ELE 292, co: ELE 331)	(3)					3			
ELE392	Analog Circuits Laboratory (pr: ELE 292, co: 333)	(3)						3		
ELE491	Senior Design Project 1	(1)							1	
ELE492	Senior Design Project 2 (pr: ELE 491)	(3)								3
TECHNICAL ELECTIVES (18)										
Select Two of the Following 3 Courses:										
ELE312	Control Systems* (3) (pr: ELE 351)	()					3			
ELE325	Electromagnetics II* (3) (pr: ELE 324 or PHY 424)	()					3			
ELE352	Digital Signal Processing (3) (pr: ELE 351)	()								
And Another 4 Technical Electives:										
	Tech Elective _____	(3)							3	
	Tech Elective _____	(3)							3	
	Tech Elective _____	(3)								3
	Tech Elective _____	(3)								3
FREE ELECTIVES (4)										
	Free Elective _____	(3)						3		
	Free Elective _____	(1)								1
TOTAL CREDITS		132	17	17	16	16	19	18	13	16

ELECTRICAL ENGINEERING

Curriculum Notes

2016-2017

1. Electrical Engineering (EE) students must complete 18 credit hours in social sciences/humanities/Non-Technical electives using any one of the following options:
 - Option 1:** Students may use their electives to complete a non-technical minor. Students pursuing this option must plan early in their degree program.
 - Option 2:** Complete the divisional perspective requirements of humanities division and take the remaining electives from the social sciences division.
 - Option 3:** Complete the divisional perspective requirements of social sciences division and take the remaining electives from the humanities division.
2. In the EE program, tracks of specialization (described in the *2016-2017 Syracuse University online Undergraduate Course Catalog*: <http://coursecatalog.syr.edu>) and minors are used to regulate technical electives. A student must complete four technical elective courses in Electrical Engineering or Computer Engineering. At a minimum, two of these courses must complete one EE track. Students need to complete only one EE track (two EE elective courses). If a student chooses to complete two tracks, there are 12 credits of technical electives. If a student chooses to complete one EE track and a technical ECS minor, the technical electives are increased to 21 credits. Courses that are not required for students who complete a technical minor are ELE 346, 325 and 312.
3. First year courses in Physics, Mathematics and computer programming may not be used as unspecified electives.

Footnotes to the Curriculum Table:

- * Students who choose to complete a technical ECS minor may replace these courses with technical electives.

Tracks (Technical Electives)

Tracks are intended to provide a cohesive set of technical electives for electrical engineering students. A track usually consists of a group of four courses (12 credits). In the Department of Electrical Engineering and Computer Science there are three tracks in electrical engineering.

Communications Track:

ELE 351	System and Signal Analysis	3
ELE 352	Digital Signal Processing	3

And two of the following:

ELE 551	Communication Systems	3
ELE 458	Data Networks: Basic Principles	3
ELE 591	Special Topics in Communications	3
ELE 452	Digital Audio Signal Processing	3

Electromagnetics Track:

ELE 324	Electromagnetics I	3
ELE 325	Electromagnetics II*	3

And two of the following:

ELE 424	Fundamentals of RF & Microwaves	3
ELE 425	Microwave Engineering	3
ELE 525	Electromagnetics Compatibility	3
ELE 524	Intro to Applied Optics	3

Power Track:

ELE 324	Electromagnetics I	3
ELE 333	Analog Circuits	3

And two of the following:

ELE 416	Electromechanical Devices	3
ELE 514	Electric Power Systems	3
ELE 417	Power Electronics	3
ELE 418	Sensors and Measurements	3
ELE 591	Distributed Source & Integration in Smart Grid	3

* Students who choose to complete a technical ECS minor may replace these courses (ELE346, ELE325, and ELE312) with technical electives.

Environmental Engineering Curriculum

College of Engineering & Computer Science
 Environmental Engineering
 Fall 2016

Name _____
 SUID _____

pr= prerequisite, co=corequisite

Minor/Second Major (if any): _____

CREDIT	FIRST-YEAR		SOPHOMORE		JUNIOR		SENIOR		VAR	
	GRADE	F	S	F	S	F	S	F		S
MATHEMATICS (15)										
MAT295	(4)	4								
MAT296	(4)		4							
MAT397	(4)			4						
MAT485	(3)				3					
SCIENCES (20)										
CHE106	(3)	3								
CHE107	(1)	1								
CHE116	(3)		3							
CHE117	(1)		1							
PHY211	(3)		3							
PHY221	(1)		1							
GEO383	(4)						4			
Select one of the following two courses:										
EAR110				4*	4					
EAR203										
WRITING SKILLS (6)										
WRT105	(3)	3								
WRT205	(3)				3					
SOCIAL SCIENCE/HUMANITIES (18) (See curriculum notes)										
SSH Elective	(3)	3								
SSH Elective	(3)		3							
SSH Elective	(3)			3**	or 3					
SSH Elective	(3)		3							
SSH Elective	(3)			3						
SSH Elective	(3)					3				
ENGINEERING (16/17)										
ECS101	(3)	3								
ECS221	(3)			3						
ECS325	(4)				4					
CIE561	(3)							3		
Select One of the Following 5 Courses:										
ECS222	()							3 or 4		
CIE/ECS 326										
ELE231										
MAE251										
CHE346										
ENVIRONMENTAL ENGINEERING (35)										
CIE271	(3)			3						
CIE274	(3)				3					
CIE327/MAE341	(4)					4				
CIE329	(4)						4			
CIE337	(4)					4				
CIE341	(3)					3				
CIE352	(4)						4			
CIE442	(4)						4			
CIE472	(3)							3		
CIE475	(4)								4	
ELECTIVES (18)										
Prof. Elective	(3)							3		
Prof. Elective	(3)							3		
Prof. Elective	(3)								3	
Tech Elective	(3)								3	
Tech Elective	(3)							3 or 3		
Free Elective	(3)					3				
TOTAL CREDITS	129-130	17	18	16-17	16-17	17	16	15	13-14	

*If EAR is taken, then take SS/H sophomore spring semester

**If SS/H is taken, then take EAR sophomore spring semester

ENVIRONMENTAL ENGINEERING
Curriculum Notes
2016-2017

SS/HUM ELECTIVES

All CIE students are required to complete at least 18 credits of SS/HUM electives. A *minimum* of one course (or 3 credits) must be chosen from each of the three groups of designated courses listed below. The remaining three SS/HUM electives (or 9 credits) can be selected from the lists below or, in addition to the lists, may be chosen from:

- any College of Arts and Sciences courses that are listed on their Humanities and Social Sciences lists in the SU Bulletin – Undergraduate Course Catalog
- any foreign language courses (except student’s native language)
- ECS 391 – Legal Aspects of ECS
- ECS 392 – Ethical Aspects of ECS.

Group 1: Economics and Social Issues
ECN 203 – Economics Ideas and Issues
ECN 301* – Intermediate Microeconomics
ECN 302* – Intermediate Macroeconomics
ECN 365* – The World Economy
GEO 353 – Environmental Justice
PSC 383 – Civil Society and Democracy
SOC 101 – Introduction to Sociology
SOC 102 – Social Problems
SOC 363 – Urban Sociology
STS/BPS 101 – Introduction to Science, Technology and Society

Group 2: Global Affairs
ECN 365 – The World Economy
GEO 103 – Environment and Society
GEO 105 – World Geography
GEO 272 – World Cultures
GEO 273 – World Political Economy
MAX 123 – Critical Issues for the U.S.
MAX 132 – Global Community
PAF 351 – Global Social Problems
PSC 124 – International Relations
PSC 355 – International Political Economy

* requires ECN203 as prerequisite

Group 3: Public Policy and Policy Studies
ECN/WGS 358 – Economics of US Poverty & Discrimination
GEO 203 – Society and the Politics of Nature
GEO 314 – Hazardous Geographic Environments
GEO 356 – Environmental Ideas & Policy
PAF 101 – An Introduction to the Analysis of Public Policy
PAF 409+ – Intermediate Analysis of Public Policy
PAF 451 – Environmental Policy
PSC 302- Environmental Politics and Policy
PSC 305 – Congressional Politics
PSC 308 – The Politics of US Public Policy
PSC 312 – Urban Government & Politics
PSC 318 – Technology, Politics & Environment

+ requires PAF101 as prerequisite

Technical Electives

Technical Electives MUST be CIE courses numbered 300 and above. They are to be selected in consultation with a student’s advisor to advance the student’s knowledge in a specific area of interest in civil or environmental engineering.

Free Electives

Any SU or ESF three or four credit course except Physical Education and remedial courses.

PROFESSIONAL ELECTIVES

Professional Electives are courses that advance a student’s professional abilities and form a cohesive and meaningful addition to the required CIE coursework. They are designed to develop and enhance a student’s role as a professional civil or environmental engineer. Professional Electives are *upper-level courses* (300 and above; as well as ECS 222, ELE 231, and MAE 251 that have not been used for degree credits), generally from professional schools at SU and SUNY-ESF, and must be selected in consultation with the student’s academic advisor. Many Professional Electives can be used towards completion of a minor. Approved Professional Electives are courses offered in the following schools/colleges with the indicated prefixes that meet the above stated criteria.

School/College	Course Prefix
Architecture	ARC
Arts and Sciences	AST, BCM, BIO, CHE, ECN, EAR, GOL, MAX, MAT, PAF, PHY
Engineering and Computer Science	All course prefixes
Information Studies	IST
Whitman	ACC, BUA, EEE, FIN, INB, LPP, MAR, O&M, SHR, SOM
Newhouse	COM
VPA	CRS
SUNY-ESF	All course prefixes

Mechanical Engineering Curriculum

College of Engineering and Computer Science

Mechanical Engineering

Fall 2016

Name _____

SUID _____

pr= prerequisite, co=corequisite

Minor/Second Major (if any): _____

	CREDIT GRADE	FIRST-YEAR		SOPHOMORE		JUNIOR		SENIOR		VAR #/-
		F	S	F	S	F	S	F	S	
MATHEMATICS (15)										
MAT295 Calculus 1	(4) _____	4								
MAT296 Calculus 2 (pr: MAT 295 min C-)	(4) _____		4							
MAT397 Calculus 3 (pr: MAT 296 min C-)	(4) _____			4						
MAT485 Diff Eqn & Matrix Algebra for Engrs (pr: MAT 397)	(3) _____				3					
SCIENCES (12)										
CHE106 General Chem for Engrs	(3) _____		3							
CHE107 General Chem Lab (co: CHE 106)	(1) _____	1								
PHY211 General Physics 1 (co: PHY 221, MAT 295)	(3) _____		3							
PHY221 General Physics Lab 1 (co: PHY 211)	(1) _____	1								
PHY212 General Physics 2 (pr: PHY 211, 221, co: PHY 222, MAT 296)	(3) _____			3						
PHY222 General Physics Lab 2 (co: PHY 212)	(1) _____			1						
WRITING SKILLS/SOCIAL SCIENCE/HUMANITIES (12)										
WRT105 Studio 1: Practices of Academic Writing	(3) _____	3								
WRT205 Studio 2: Critical Research and Writing (pr: WRT 105)	(3) _____		3							
ECN203 Economic Ideas & Issues	(3) _____	3								
SSH Elective _____	(3) _____		3							
PROGRAM CUSTOMIZATION (18)										
Course1 _____	(3) _____			3						
Course2 _____	(3) _____					3				
Course3 _____	(3) _____						3			
Course4 _____	(3) _____							3		
Course5 _____	(3) _____								3	
Course6 _____	(3) _____									3
ENGINEERING (26)										
ECS101 Intro. to Engr. & Comp. Sci.	(3) _____	3								
ECS104 Engr. Comp Tools (co: MAT 295)	(3) _____		3							
ECS221 Statics (pr: PHY 211, co: MAT 296)	(3) _____			3						
ECS222 Dynamics (pr: ECS 221, MAT 296)	(3) _____				3					
ECS325 Mechanics of Solids (pr: ECS 221, co: MAT 397)	(4) _____				4					
ECS326 Engr. Materials, Prop. & Proc.	(3) _____			3						
ELE231 Elec. Engr. Fundamentals 1 (pr: MAT 295)	(3) _____					3				
ELE291 Elec. Engr. Laboratory 1 (co: ELE 231)	(1) _____					1				
MAE322 Control Systems for MAE (pr: MAT414 or 485, co: MAE321)	(3) _____						3			
MECHANICAL ENGINEERING (45)										
MAE284 Intro. to Design (pr: ECS 101)	(3) _____				3					
MAE251 Thermodynamics (pr: PHY 211)	(4) _____				4					
MAE312 Engineering Analysis (pr: ECS 104, MAT 485)	(3) _____					3				
MAE315 Mech/Aero Lab I (pr: ECS 325, co: MAE 341)	(3) _____					3				
MAE321 Dynamics of Mech. Systems (pr: ECS 325, ECS 222, MAT 485)	(3) _____						3			
MAE341 Fluid Mechanics (pr: ECS 221, MAT 397, PHY 211)	(4) _____					4				
MAE355 Heat Transfer (pr: MAE 341, co: MAE 251)	(4) _____						4			
MAE333 Data Analysis for Engrs. (pr: MAT 397)	(3) _____					3				
MEE332 Intro. Mach. Des. (pr: ECS 222, ECS 325)	(3) _____						3			
MEE416 Mechanical Engr. Lab (pr: MAE 251, MAE 315, MAE 341, MAE 355)	(3) _____							3		
MEE431 Manufacturing Processes (pr: MAE 284)	(3) _____								3	
MEE471 Design Practice (pr: MEE 332, MAE 284, co: MEE472)	(2) _____									2
MEE472 Syn. Mech. Systems II (co: MEE 471)	(4) _____									4
Select One of the Following 3 Courses:	(3) _____								3	
MAE430 Intro to Design Optimization (3) (pr: MAT 397, MAT 485)										
MAE 571 Applic of Cmptn'l Fluid Dynmcs (3) (pr: MAE 341)										
MAE573 Applic of Finite Elemnt Anlsys (3) (pr: ECS 325, MAT 485)										
TOTAL CREDITS	128	17	17	17	17	17	16	15	12	

MECHANICAL ENGINEERING
Curriculum Notes
2016-2017

1. Mechanical Engineering students must take at least 3 credit hours in the Social Science/ Humanities in addition to ECN203. Further, they must take two Technical Electives (6 credits), one of which must be either MAE430, MAE571, or MAE573, as well as complete one of the following two 18-credit options, for a total of nine (9) Electives (27 credit hours):

Option 1: A University Minor – typically 18 credits coordinated by the offering department; the minor must have fewer than 12 credits of overlap with required MEE courses.

Option 2: A Distribution of Electives – an additional 6 credits of Social Sciences/Humanities, 9 credits of Technical Electives, and a 3-credit Free Elective.
2. Technical Electives are courses at the 300 level or higher taken within the Mechanical and Aerospace (MAE) department. Selected courses from other ECS departments, mathematics, or natural sciences may be accepted as Technical Electives, but no more than 3 credit hours of the Technical Electives can be taken outside the MAE department.
3. Many technical electives in the MAE Department are scheduled on a 2-year rotation, so students should check availability of Technical Electives starting in their third year.
4. Mechanical Engineering students seeking to complete a Mathematics Minor can take a mathematics course as a Free Elective but must still complete one of the 2 options listed above.
5. Mechanical Engineering students seeking to complete the Energy Systems Minor (15 credits) must take an additional 3-credit Social Sciences/Humanities Elective.

Systems & Information Science Curriculum

College of Engineering and Computer Science | School of Information Studies

Systems & Information Science
Fall 2016

Name _____
SUID _____

pr=prerequisite, co=corequisite

Minor/Second Major (if any): _____

CREDIT	FIRST-YEAR		SOPHOMORE		JUNIOR		SENIOR		VAR
GRADE	F	S	F	S	F	S	F	S	+/-

Writing and Communication Skills (9 cr)											
WRT105	Studio 1: Practices of Academic Writing	(3)	3								
WRT205	Studio 2: Critical Research and Writing (pr: WRT 105)	(3)			3						
Select one of the following three courses:											
CRS/CAS325	Presentational Speaking (3)	(3)				3					
IST 444	Info. Reporting & Presentations (3)	(3)									
Arts & Sciences Elec (39 cr) 6 cr Hum, 6 cr SS, 6 cr Nat Sci. & Math, 21 cr (in total) SS and/or Hum and/or VPA											
Humanities	_____	(3)	3								
Humanities	_____	(3)		3							
Soc.Scie	_____	(3)		3							
Soc.Scie	_____	(3)		3							
NS/Math	_____	(3)			3						
NS/Math	_____	(3)				3					
SSH/VPA	_____	(3)					3				
SSH/VPA	_____	(3)						3			
SSH/VPA	_____	(3)							3		
SSH/VPA	_____	(3)								3	
SSH/VPA	_____	(3)								3	
SSH/VPA	_____	(3)								3	
Free Electives (3 cr)											
Free Elec	_____	(3)			3						
Mathematics Foundations (13 cr)											
MAT194	Pre-Calculus	(4)	4								
PHI 251	Logic	(3)		3							
CIS 375	Intro to Discrete Math (pr: PHI 251)	(3)			3						
CIS 223	Statistical Reasoning and Practice (pr: MAT 194)	(3)				3					
SIS Core (32 cr)											
ECS101	Intro to Engr & Comp Sci	(3)	3								
Computing Core (20 Cr)											
ECS102	Intro to Computing	(3)	3								
CIS 252	Intro to Computer Science	(4)		4							
CIS 351	Data Structures (pr: CIS 252)	(4)			4						
CIS/CSE 386	Princ of Computer Systems Des. (pr: ECS 102, CIS 351)	(3)				3					
CIS 453	Software Specifications & Design (pr: CIS 351 or CSE 382)	(3)						3			
CIS 454	Software Implementations (pr: CIS 453)	(3)								3	
Information Management Core (9 cr)											
IST 335	Intro to Information-Based Organ.	(3)			3						
IST 352	Information Analysis of Organ Sys.	(3)				3					
IST 445	Managing Information Sys Projects	(3)					3				
Short Technical Sequence (6 cr)											
Tech Spec	_____	(3)						3			
Tech Spec	_____	(3)							3		
Focus Area (18 cr)											
Elective	_____	(3)				3					
Elective	_____	(3)			3						
Elective	_____	(3)					3				
Elective	_____	(3)						3			
Elective	_____	(3)							3		
Elective	_____	(3)								3	
TOTAL CREDITS			120	16	16	16	15	15	15	15	12

Systems & Information Science Curriculum Notes 2016-2017

SIS Specializations

All SIS students must complete both a *Short Technical Sequence* (6 credits) and a *Focus Area* (18 credits).

The Short Technical Sequence requires a two-course sequence in one of several applied-technology areas: Database Management, Networking, Security Management, Systems, and Web Design Management.

The Focus Area requires 18 credits in a specific domain, which represents a potential area for the application of a student's information management and computing skills.

Students **may not** count the same course towards both their Short Technical Sequence and their Focus Area.

Short Technical Sequence

Students must complete one of the following short technical sequences:

Database Management	
IST 359	Intro to Database Management Systems
<i>And choose one of the following</i>	
IST 469	Advanced Data Admin: Concepts & Database Management
CSE 581	Intro to Database Management Systems

Security Management	
IST 323	Intro to Information Security
CSI 483/CSE 484	Intro to Comp & Network Security

Systems	
GET 439	Enterprise Technologies
CSE 483	Windows Programming

Networking	
IST 233	Intro to Comp Networking
<i>And choose one of the following</i>	
IST 452	Advanced Comp Networking
CIS/CSE/ELE 458	Data Networks: Basic Principles

Web Design & Management	
IST 263	Design Management of Internet Services
<i>And choose one of the following</i>	
IST 479	E Commerce Technologies
IST 523	Graphic Design for the Web

Focus Areas

The following options satisfy the Focus Area requirement:

Information Assurance & Security (IAS)	
IST 323	Intro to Information Security
CIS/CSE 583	Systems Assurance Seminar
<i>And choose four of the following</i>	
IST 425	Enterprise Risk Management
IST 429	Organizational Info Security
IST 471	Internship (3 credit IAS-related internship, subject to approval)
CIS 483/CSE 484	Intro to Comp & Network Security
CIS/CSE 487	Access Control, Security & Trust

*Note: Students who take the Information Assurance & Security focus area **cannot** take the Security Management short technical sequence.*

Global Enterprise Technologies	
GET 234	Effective Collaboration in a Globally Distributed Enterprise (1.5 cr)
GET 365	Business Value of IT (1.5 cr)
GET 434	Global Computing Challenges
GET 239	Enterprise Technologies
<i>And choose three of the following</i>	
GET 433	Multi-tier Application Development
GET 302	Global Financial System Arch.
GET 305	Globalization, Culture & Information Technology
GET 471	Internship (3 credits' worth)

Note: A student who selects carefully from this list can satisfy the requirements for the GET minor.

Any minor (of at least 18 credits) throughout the University, with the following exceptions:

- Computer Engineering
- Computer Science
- Information Management and Technology

Any major throughout the University, with the following exceptions:

- Computer Science
- Information Management and Technology

Computer Science Students

Summary

The current Computer Science (CS) undergraduate curriculum was approved by the faculty of the department of Electrical Engineering and Computer Science in the Spring of 2011.

The requirements for the program of study are divided into three categories: *general education*, *mathematics* and *major*. The general education category has requirements in writing, presentation skills, natural science and engineering, and a requirement for courses offered by the College of Arts and Sciences or the College of Visual and Performing Arts. The major category has two parts—the computer science core, and the upper-division electives.

GENERAL EDUCATION

6	Writing (WRT 105, WRT 205)
3	Presentation Skills
18	Natural Science and Engineering (including ECS 101, 102 and PHY 211, 221)
21	Arts, Humanities, and Social Sciences (including PHI 251, ECS 392)
9	free electives

MATHEMATICS

15 or 16 Mathematics

MAJOR

33 Computer and Information Science core courses

18 upper-division courses

123 or 124 Credit hours total

Table 1: Credit hours required for the CS Bachelor's program.

Important Notes on Course Restrictions

The restrictions on courses listed below are *not* comprehensive. Students unclear about the appropriateness of courses for meeting a distribution requirement must petition for acceptance of the course(s) through the CIS program committee *before* taking the course.

Prior to registration each semester, students *must* meet with their faculty advisors for assistance in choosing appropriate courses.

General-Education Requirements

The intent of the general-education requirements is to ensure that students graduate with knowledge of subjects beyond Computer Science, with particular emphasis on writing skills.

Writing Requirements

The following two courses are required (no grade below C- is acceptable):

WRT 105 *Writing Studio I*

WRT 205 *Writing Studio II*

Presentation Skills Requirement

Students must successfully complete at least one of the following courses:

CRS 255 *Public Advocacy*

CAS 325/CRS 325 *Presentational Speaking*

IST 444 *Information Reporting and Presentation*

Natural Science and Engineering Requirements

Eighteen credits of natural science and engineering courses are required: six in engineering and twelve in science. These engineering courses are required:

ECS 101 *Introduction to Engineering and Computer Science*

ECS 102 *Introduction to Computing*

The twelve credits of science must include a two-semester sequence in a laboratory science, as well as the following courses:

PHY 211 *General Physics*

PHY 221 *General Physics Lab*

A student may take the second physics course (PHY 212) and its associated lab (PHY 222) to satisfy the two-semester requirement; the student would still have to take an additional four credits of science. Possible two-course sequences include the following:

- PHY 211/221 (*General Physics I and Laboratory*)
and
PHY 212/222 (*General Physics II and Laboratory*)
- CHE 106/107 (*General Chemistry Lecture and Laboratory*)
and
CHE 116/117 (*General Chemistry Lecture II and Laboratory*)
- BIO 121 (*General Biology*)
and
BIO 123/124 (*General Biology II and General Biology II Laboratory*)

Additional courses that may be used to complete the science requirement include those in the following departments, except those courses specifically excluded or whose content relates primarily to computing and/or mathematics, or to social and historical issues. Such courses may be appropriate for other distribution requirements.

Anthropology, Physical (ANT 131, 331, 431, 432, 433) Biology (BIO)

Chemistry (CHE)

Earth Sciences (EAR)

Materials Science (MTS)

Physics (PHY)

The following courses **do not** satisfy the science requirement:

Social, Cultural Anthropology (ANT)

Astronomy (AST)

BIO 211

BIO 215

CHE 103, 113

Geography (GEO)

EAR 102, 105

NEU 211

PHY 101/111, 102/112, 105, 106

Arts, Humanities, and Social Sciences Requirements

Students are required to take PHI 251 (*Logic*), ECS 392 (*Ethical Aspects of Engineering and Computer Science*), and fifteen additional credit hours of courses in fine arts, humanities, and/or social sciences. These courses (A/H/SS) are to be drawn from the offerings of the College of Arts and Sciences and the College of Visual and Performing Arts. In general, courses from the following departments may be used:

Art Photography (APH)	Korean (KOR)
African American Studies (AAS)	Latin (LAT)
Applied Music (AMC) American Studies (AMS)	Latin American Studies (LAS)
Anthropology–Social and Cultural (ANT)	Linguistics (LIN)
Arabic (ARB)	Literature in Translation (LIT)
Art (ART)	Middle Eastern Studies (MES)
Ceramics (CER)	Museum Studies (MUS)
Chinese (CHI)	Music History & Literature (MHL)
Communications Design (CMD)	Native American Studies (NAT)
Communication and Rhetorical Studies (CRS)	Public Affairs & Citizenship (PAF)
Drama (DRA)	Philosophy (PHI)
Economics (ECN)	Polish (POL)
English and Textual Studies (ETS)	Political Science (PSC)
Fine Arts (FIA)	Psychology (PSY)
Fiber Arts (FIB)	Printmaking (PRT)
Film (FIL)	Painting (PTG)
Foundation (FND)	Lesbian, Gay, Bisexual and Transgender Studies (QSX)
French (FRE)	Persian (PRS)
Fashion Illustration (FSH)	Portuguese (POR)
Geography (GEO)	Religion (REL)
German (GER)	Russian (RUS)
Greek (GRE)	Sculpture (SCU)
Hebrew (HEB)	Sociology (SOC)
Hindi (HIN)	Social Science (SOS)
History (HST)	South Asian Studies (SAS)
History of Art (HOA)	Spanish (SPA)
History of Music (HOM)	Surface Pattern Design (SPD)
Humanities (HUM)	Studio Arts (STA)
Illustration (ILL)	Kiswahili (SWA)
International Relations (IRP)	Turkish (TRK)
Interior Design (ISD)	Art Video (VID)
Italian (ITA)	Women’s and Gender Studies (WGS)
Japanese (JPS)	Writing (WRT)
Jewish Studies Program (JSP)	

The following courses/departments **cannot** be used:

Art Education (AED)	Earth Sciences (EAR)
Astronomy (AST)	Industrial Design (IND)
Advertising Design(ADD)	Mathematics (MAT)
Anthropology–Physical (see above)	Music Education MUE)
Biology (BIO)	Non-departmental AS (NAS)
Chemistry (CHE)	Physics (PHY)
Cognitive Science (COG)	Science Teaching (SCI)
Communication Sciences & Disorders (CSD)	Undergraduate Research Program (URP)
Computer Art (CAR)	WRT 105, WRT 205

Also excluded are any courses cross-listed in the College of Arts and Sciences and the School of Education, as well as the following courses:

ANT 131, 431, 433	HNR 250, 255, 350, 355, 450, 455
CFS courses	PSY 223, 252, 323, 324, 334
GEO 155, 215, 316, 326, 455, 482, 583	

Free Electives

Any and all courses may be taken as free electives, with the following exceptions:

- CPS courses **do not count** as free-elective credits for CS majors.
- ENL courses **do not count** as free-elective credits.

Mathematics Requirements

Fifteen or sixteen credit hours of Mathematics courses are required. No grade below C- is acceptable. Students *must* take the following three courses:

MAT 295 <i>Calculus I</i>	4 credits
MAT 296 <i>Calculus II</i>	4 credits
CIS 321 <i>Introduction to Probability and Statistics</i>	4 credits

In addition, students *must* also take at least one of the following courses:

MAT 397 <i>Calculus III</i>	(4 credits)
MAT 331 <i>Linear Algebra</i>	(3 credits)

Note: Students may petition to satisfy the 4-credit CIS 321 requirement by completing the 6-credit combination of MAT 521 and MAT 525. This option may be preferable for students pursuing a dual major or minor in mathematics.

Course Requirements for the Major

CIS Core Course Requirements

The following ten courses (33 credit hours) are required. These courses **must** be completed with a core GPA of at least 2.667. No grade below C- is acceptable for a core course.

- CIS 252 *Introduction to Computer Science*
- CIS 375 *Introduction to Discrete Mathematics*
- CIS 341 *Computer Organization and Programming Systems*
- CIS 342 *Introduction to Systems Programming*
- CIS 351 *Data Structures*
- CIS 352 *Programming Languages: Theory and Practice*
- CIS 453 *Software Specification and Design*
- CIS 454 *Software Implementation*
- CIS 473 *Computability Theory*
- CIS 477 *Introduction to Analysis of Algorithms*
- CIS 486 *Design of Operating Systems*



The diagram on the right shows the prerequisite structure of the core courses. As always, check with the course catalog and the course instructor for details.

Upper-Division Course Restrictions

Eighteen credit hours of upper-division courses are required: at least 9 of the 18 credits must be computer science or computer engineering courses. No grade below C- is acceptable for an upper-division elective.

Upper-division courses include the following:

- | | |
|-------------------------------------------------------|----------------------------------------------------------|
| CIS 400 <i>Selected Topics</i> | CSE 381 <i>Computer Architecture</i> |
| CIS 425 <i>Intro to Computer Graphics</i> | CSE 397 <i>Computer Laboratory I</i> |
| CIS 428 <i>Intro to Cryptography</i> | CSE 398 <i>Computer Laboratory II</i> |
| CIS 444 <i>Mobile Application Programming</i> | CSE 483 <i>C# and Windows Programming</i> |
| CIS 451 <i>Modern Programming in Java</i> | CSE 489 <i>Web System Architecture & Programming</i> |
| CIS 458 <i>Data Networks: Basic Principles</i> | CSE 491 <i>Senior Design Project I</i> |
| CIS 467 <i>Intro to Artificial Intelligence</i> | CSE 492 <i>Senior Design Project II</i> |
| CIS 468 <i>Natural Language Processing</i> | CSE 561 <i>Digital Machine Design</i> |
| CIS 471 <i>Optimization Methods</i> | CSE 581 <i>Intro to Database Management Systems</i> |
| CIS 478 <i>Intro to Quantum Computing</i> | |
| CIS 483 <i>Intro to Computer and Network Security</i> | PHI 378 <i>Minds and Machines</i> |
| CIS 487 <i>Access Control, Security, and Trust</i> | PHI 551 <i>Symbolic Logic</i> |
| CIS 488 <i>Intro to Internet Security</i> | PHI 552 <i>Modal Logic</i> |
| CIS 543/ELE 516 <i>Control of Robots</i> | |
| CIS/MAT 545 <i>Finite Mathematics</i> | |
| CIS 551 <i>Modern Programming in Java</i> | |
| CIS 554 <i>Object Oriented Programming in C++</i> | |

In general, students may choose any other CIS course numbered above 300, except those that carry no credit hours. However, the following courses **do not qualify** as upper-division electives:

- CIS 470 *Experience Credit*
- CIS 490 *Independent Study*

CS students may also choose any MAT courses at the 400 level or higher, **except** for the following:

- MAT 421 *Applied Probability and Statistics*
- MAT 485 *Differential Equations and Matrix Algebra for Engineers*
- MAT 521 *Introduction to Probability*

CS students may also choose topics courses (e.g., PHI 460 *Logic and Foundations of Mathematics*); however, they must petition the CIS program committee to have the specific course accepted *before* taking the course.

Representative CIS Undergraduate Programs

Here is a fairly typical CIS undergraduate program for a student who initially places into MAT 295.

First Year	Fall	Spring
	ECS 101	CIS 252
	ECS 102	MAT 296
	MAT 295	PHY 211, PHY 221
	WRT 105	PHI 251
	A/H/SS elective*	
Second Year	CIS 375	CIS 321
	CIS 351	CIS 341, CIS 342
	MAT 397 or MAT 331	CIS352
	A/H/SS elective	WRT 205
		free elective
Third Year	CIS 453	CIS 454
	CIS 477	CIS 473
	CIS 486	upper-division course
	presentation-skills elective	A/H/SS elective
	science elective	science elective
Fourth Year	upper-division course	upper-division course
	upper-division course	upper-division course
	upper-division course	A/H/SS elective
	ECS 392	free elective
	A/H/SS elective	free elective

*Students wishing to preserve the option of transferring to an engineering major at the end of the first semester should take CHE 106/107 in place of the A/H/SS elective.

Here is a fairly typical CIS undergraduate program for a student who initially places into MAT 194.

First Year	Fall	Spring
	ECS 101	CIS 252
	ECS 102	MAT 295
	MAT 194	PHY 211, PHY 221
	WRT 105	PHI 251
	A/H/SS elective*	
Second Year	CIS 375	CIS 321
	CIS 351	CIS 341, CIS 342
	MAT 296	WRT 205
	A/H/SS elective	MAT 397 or MAT 331
		free elective
Third Year	CIS 453	CIS 454
	CIS 477	CIS 473
	CIS486	CIS 352
	presentation-skills elective	A/H/SS elective
	science elective	science elective
Fourth Year	upper-division course	upper-division course
	upper-division course	upper-division course
	upper-division course	upper-division course
	ECS 392	A/H/SS elective
	A/H/SS elective	free elective

*Students wishing to preserve the option of transferring to an engineering major at the end of the first semester should take CHE 106/107 in place of the A/H/SS elective.

Computer Science Curriculum

College of Engineering and Computer Science													
Computer Science					Name _____								
Fall 2016					SUID _____								
pr=prerequisite, co=corequisite													
Minor/Second Major (if any): _____													
CREDIT	FIRST-YEAR		SOPHOMORE		JUNIOR		SENIOR		VAR				
	GRADE	F	S	F	S	F	S	F	S	+/-			
G Writing Skills (6 cr) Minimum Grade C-													
E	WRT105	Studio 1: Practices of Academic Writing		(3)	3								
N	WRT205	Studio 2: Critical Research and Writing (pr: WRT 105)		(3)			3						
Presentational Skills (3 cr) Minimum Grade C-													
Select one of the following three courses:													
	CRS 225	Public Advocacy (3)		(3)			3						
	CRS/CAS325	Presentational Speaking (3)											
E	IST 444	Info. Reporting & Presentations (3)											
D SSHVPA (21 credits)													
U	ECS 392	Ethical Aspects of ECS		(3)					3				
C	PHI 251	Logic		(3)	3								
A	SSHVPA	_____		(3)	3								
T	SSHVPA	_____		(3)		3							
I	SSHVPA	_____		(3)			3						
O	SSHVPA	_____		(3)				3					
N	SSHVPA	_____		(3)					3				
Natural Sciences (12 cr) Two semester lab sequence in Natural Sciences													
	PHY211	General Physics 1 (co: PHY 221, MAT 295)		(3)		3							
R	PHY221	General Physics Lab 1 (co: PHY 211)		(1)		1							
E	Natural Science Elective _____		(4)				4						
Q	Natural Science Elective _____		(4)					4					
M Free Electives (9 cr)													
N	Free Elec _____		(3)			3							
T	Free Elec _____		(3)						3				
S	Free Elec _____		(3)						3				
Mathematics (15-16 cr) Minimum Grade of C-													
	MAT295	Calculus 1		(4)	4								
M	MAT296	Calculus 2 (pr: MAT295)		(4)		4							
A	MAT397/331	Calculus or Linear Algebra (pr: MAT 296)		(4-3)			4 or 3						
J	CIS321	Intro. to Probability & Statistics (pr: MAT 295)		(4)			4						
O Engineering Courses (6 cr)													
R	ECS101	Intro. to Engineering & Computer Sci		(3)	3								
	ECS102	Intro. to Computing		(3)	3								
Comp Sci Core (33 cr) 2.667 GPA & Minimum Grade C-													
	CIS252	Intro. to Computer Science		(4)		4							
	CIS375	Intro. to Discrete Mathematics (pr: PHI 251)		(3)			3						
	CIS341	Comp. Organization & Prog. Systems (pr: ECS 102 or CIS 252)		(3)				3					
	CIS342	Intro. to Systems Programming (pr: CIS 351, co: CIS 341)		(1)				1					
R	CIS351	Data Structures (pr: CIS 252)		(4)			4						
E	CIS352	Programming Lang: Theory & Prac. (pr: CIS 275, CIS 351)		(3)				3					
Q	CIS453	Software Specification & Design (pr: CIS 351 or CSE 382)		(3)					3				
U	CIS454	Software Implementation (pr: CIS 453)		(3)						3			
I	CIS473	Computability Theory (pr: CIS 275, or MAT 275)		(3)						3			
R	CIS477	Intro. to Analysis of Algorithms (pr: CIS 275, CIS 351)		(3)					3				
E	CIS486	Operating Systems (pr: CIS 341, 342, 351 or CSE 281, 382)		(3)						3			
M Upper Division Courses (18 cr) Minimum Grade C- At least 9 credits of Upper Division MUST be in Computer Science													
E	Upper Div _____		(3)					3					
N	Upper Div _____		(3)						3				
T	Upper Div _____		(3)						3				
S	Upper Div _____		(3)						3				
	Upper Div _____		(3)							3			
	Upper Div _____		(3)							3			
TOTAL CREDITS					123-124	16	15	13-14	17	16	16	15	15

GPA WORKSHEET

REQUIREMENTS: Minimum grade of C- in English, Mathematics, Core, and Upper Division Courses

- 123 credits to graduate
- 2.0 Overall GPA to graduate
- 2.667 Core Course GPA
- Restrictions/exclusions as noted in the Undergraduate Handbook

CORE GPA TALLY SHEET:

2) Divide Total Grade Points by Total Course Credits for Core Grade Point Average (GPA).

CORE COURSE	HR	GRD	TOTAL GRD POINTS	TOTAL COURSE CR	CORE GPA	CALCULATION DATE AND INITIALS
CIS252	4					
CIS375	3					
CIS341	3					
CIS342	1					
CIS351	4					
CIS352	3					
CIS453	3					
CIS454	3					
CIS473	3					
CIS477	3					
CIS486	3					
			÷	=		
			÷	=		
			÷	=		
			÷	=		
			÷	=		
			÷	=		
			÷	=		
			÷	=		
			÷	=		
			÷	=		

GRADING CHART: Credit hours X points per grade = Grade Points Earned

GRD	PTS
A	4.000
A-	3.667
B+	3.333
B	3.000
B-	2.667
C+	2.333
C	2.000
C-	1.667
D	1.000
F	0.000

In most cases an excellent approximation can be obtained by taking A-= 11/3, B+=10/3, etc. The correct GPA, however, is that determined by using the table.

