



Energy Science Technology & Policy

Carnegie Mellon University
College of Engineering

Energy Science, Technology and Policy Master's Program

Graduate Student Handbook

Academic Year 2017-`18

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Energy Science, Technology and Policy Master's Program
Carnegie Mellon University
5000 Forbes Avenue, Scott Hall 5103
Pittsburgh, Pennsylvania 15213
Phone: (412) 268-2947
Fax: (412) 268-5650
Email: energy@andrew.cmu.edu
www.cmu.edu/engineering/estp

EST&P GRADUATE STUDENT HANDBOOK

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I) Welcome and Introduction

The Faculty and Staff of the Energy Science, Technology and Policy (EST&P) program welcome you to Carnegie Mellon University (CMU). EST&P is an interdisciplinary Master of Science degree program in the College of Engineering and is an educational initiative of the CMU Scott Institute for Energy Innovation. The two EST&P degrees proudly build upon the significant accomplishments in energy by CMU faculty, researchers, students and graduates.

This handbook will guide and inform your opportunities and choices in the EST&P program. It contains detailed information about EST&P policies, procedures and degree requirements and it supplements [College of Engineering graduate policies](#) and [University policies](#). As you join us in this eighth year of CMU's Energy master's program, we hope you have a productive and rewarding academic year, and that you will not hesitate to contact us with any questions.

A) Why EST&P?

Effective solutions to energy problems will come from engineers and technical managers who understand the interdisciplinary challenges of energy, and who are well informed on the broad issues of energy supply, demand, storage, utilization, policy, sustainability, and the environment. EST&P addresses this need with a professional engineering master's degree based in engineering, aligned with new discoveries in science, attuned to sustainability and the environment, and informed by a broader perspective in economics and public policy. All EST&P graduates share core knowledge from four required courses: Energy Conversion & Supply, Energy Transport & Storage, Energy Demand & Utilization, and Energy Policy & Economics. Engineering depth is assured through a disciplinary concentration choice that sets the template for a third of your coursework. As a professional master's, EST&P is oriented towards professional career preparation and the MS degree is awarded for successful completion of all required coursework. This distinguishes a professional master's from a research master's that is typically two or more years in duration and requires writing / defending a master's thesis.

EST&P graduates pursue diverse careers where they can lead in the development of new technologies and policies for the production, transport, and efficient use of energy. The curriculum is designed to prepare you for a position of responsibility in energy sectors including: traditional energy utilities and suppliers, alternative and renewable energy, power generation and distribution, energy intensive manufacturing, energy efficiency and sustainability practices, consulting companies, government labs, non-profits, and academic institutions.

B) Consumer Information

Students in the EST&P program are self- or family-funded, funded by their employer, or by external scholarships, fellowships, and educational loans. Students are permitted to enroll in project based classes as well as independent study and master's project research courses, but only EST&P-Applied Studies degree students are required to do so. The [CMU HUB website consumer information page](#) provides access to information that current and prospective students of the University may need in order to be informed consumers. The CMU website also provides student consumer information linked on their [Middle States Accreditation](#) pages.

C) Carnegie Mellon University Statement of Assurance

Carnegie Mellon University does not discriminate in admission, employment, or administration of its programs or activities on the basis of race, color, national origin, sex, handicap or disability, age, sexual orientation, gender identity, religion, creed, ancestry, belief, veteran status, or genetic information. Furthermore, Carnegie Mellon University does not discriminate and is required not to discriminate in violation of federal, state, or local laws or executive orders. Inquiries concerning the application of and compliance with this statement should be directed to the vice president for campus affairs, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, PA 15213, telephone 412-268-1018. Obtain general information about Carnegie Mellon University by calling 412-268-2000. This Statement of Assurance can also be found at: www.cmu.edu/policies/administrative-and-governance/statement-of-assurance.html .

D) Acknowledgements

This handbook was prepared with the help and support of our partner engineering departments: Chemical Engineering, Civil & Environmental Engineering, Electrical & Computer Engineering, Engineering & Public Policy, Materials Science & Engineering and Mechanical Engineering. Portions of the text herein are copied with permission from some of their graduate student handbooks. Every attempt is made for EST&P program policies to confirm with [The Word](#) and [College of Engineering graduate policies](#). These include policies on intellectual property, freedom of expression, student privacy, academic disciplinary actions, and academic integrity. Should there be any disagreement between this document and the policies of the College of Engineering and CMU, the College and University documents take precedence.

II) EST&P Administrative Information

The EST&P administrative offices and study lounge are located on the 5th floor of Scott Hall. [Maps of campus](#) are available on the CMU website, and the "Mapyst CMU" campus navigation app is available for Android devices and as a web app. **Directions:** From “the mall” between Baker Hall and Doherty Hall, walk past Wean Hall until you see the Sherman and Joyce Bowie Scott Hall on your right- this is an all glass building. Go through the main doors of Scott Hall and continue walking straight down the hallway in front of you. The EST&P offices are located on your right. The EST&P study lounge (5101) is the first room on the right, office 5103 (Nora/Ashley) is in the middle, and 5105 (Dr. Landis) is at the end of the hall. The 5th floor of Scott Hall is home to the Scott Institute for Energy Innovation.

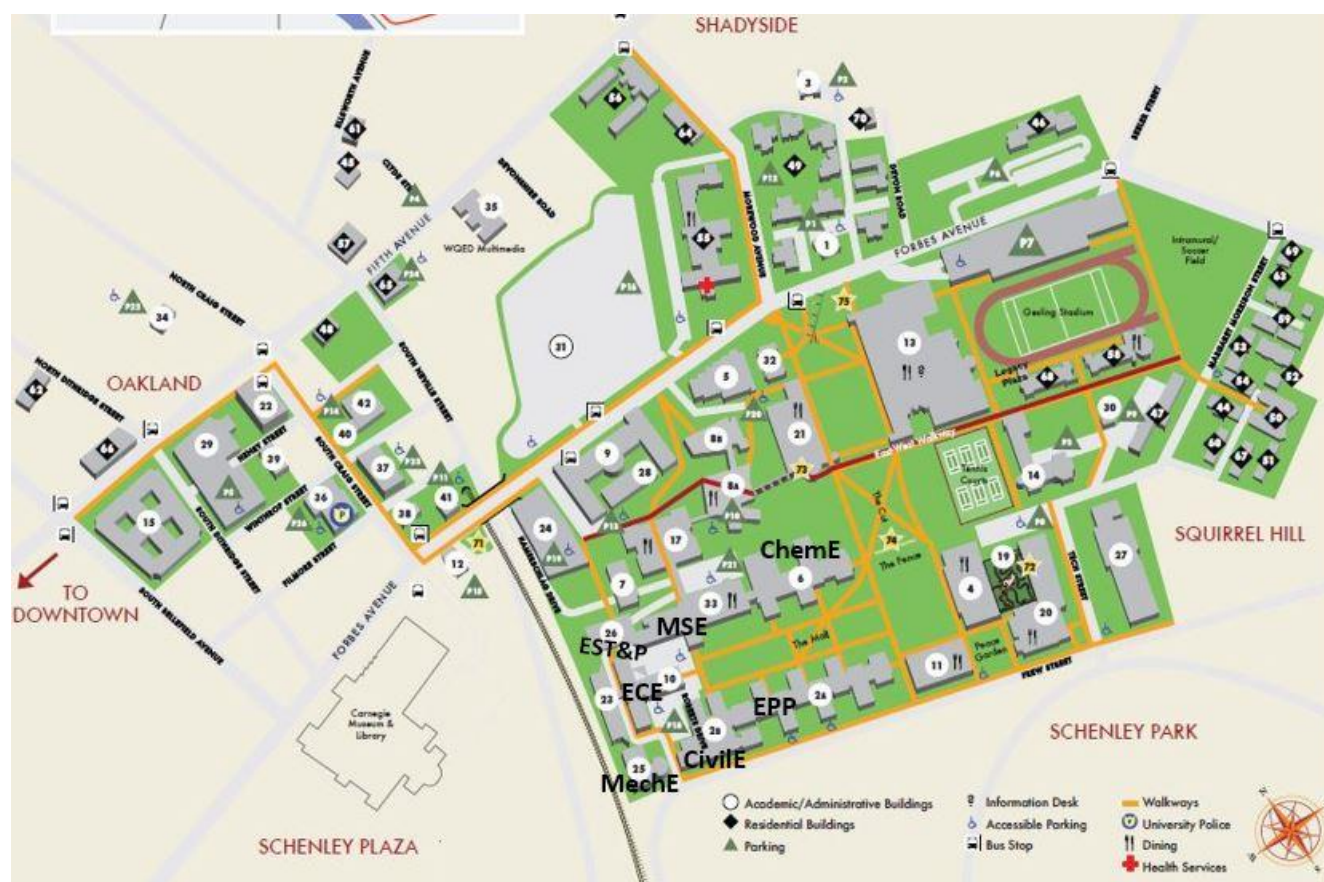
A) EST&P Affiliated Faculty and Staff Contact Information

<u>Last, First Name</u>	<u>Office</u>	<u>Phone</u>	<u>email</u>
Landis, David - Exec. Dir., Prof (39-613)	5105 Scott Hall	412-268-7672	DaveL@cmu.edu
Lomison, Ashley – Program Coordinator	5103 Scott Hall	412-268-2947	alomison@andrew.cmu.edu
Salvador, Paul - MSE Professor (39-610)	149 Roberts Hall	412-268-2702	paulsalvador@cmu.edu
Samaras, Costa - CEE Professor (39-611)	103 Porter Hall	412-268-1658	csamaras@cmu.edu
Siewiorek, Nora – Assoc. Director	5103 Scott Hall	412-268-6072	norann@andrew.cmu.edu
Whitacre, Jay – EPP/MSE Prof. (39-612)	5127 Scott Hall	412-268-5548	whitacre@andrew.cmu.edu
Khan, Neetha – Ombudsperson	A309 Doherty Hall	412-268-2332	neetha@andrew.cmu.edu
Koval, Bryan – Student Life Coordinator	Morewood Grdn.	412-268-2142	bkoval@andrew.cmu.edu
Tsupros, Shaina – Career Consultant	252 West Wing	412-268-2064	stsupros@andrew.cmu.edu

For the extended list of EST&P-associated faculty from the College of Engineering departments, please see the [EST&P About Us: Faculty and Staff](#) page.

College of Engineering Department Locations and Department Head Contacts

College of Engineering	110 Scaife Hall		www.engineering.cmu.edu
Garrett, James H.	412-268-5090		
Dean of Engineering & Thomas Lord Professor of Civil and Environmental Engineering			
Chemical Engineering	1107 Doherty Hall	412-268-2230	www.cmu.edu/cheme
Biegler, Lorenz	1111 Doherty Hall	412-268-2232	
CHE Department Head & Bayer Professor of Chemical Engineering			
Civil & Environmental Engineering	119 Porter Hall	412-268-2940	www.cmu.edu/cee
Dzombak, David	119D Porter Hall	412-268-2946	
CEE Department Head & Blenko University Professor of Civil & Environmental Engineering			
Electrical & Computer Engineering	Hamerschlag Hall	412-268-7400	www.ece.cmu.edu
Kovacevic, Jelena	1106 Hamerschlag	412-268-3299	
ECE Department Head & Schramm Professor of Electrical & Computer Engineering			
Engr. & Public Policy	129 Baker	412-268-2670	www.cmu.edu/epp
Sicker, Doug	129 Baker Hall	412-268-2838	
EPP Department Head			
Materials Science & Engr.	3325 Wean Hall	412-268-2700	www.cmu.edu/engineering/materials
Rohrer, Gregory	3327 Wean Hall	412-268-2696	
MSE Department Head & W.W. Mullins Professor of Material Science & Engineering			
Mechanical Engineering	4th Floor Scaife	412-268-2500	www.cmu.edu/me
Robinson, Allen	401 Scaife Hall	412-268-3657	
MEG Department Head & Raymond J Lane Distinguished Professor of Mechanical Engineering			



B) University Offices

University Police: emergency	412-268-2323	
non-emergency	412-268-6232	www.cmu.edu/police
Student Health Services	412-268-2157	www.cmu.edu/health-services
Counseling & Psychological Services	412-268-2922	www.cmu.edu/counseling
Housing Services	412-268-2139	www.cmu.edu/housing
Dining Services	412-268-2139	www.cmu.edu/dining
Office of International Education	412-268-5231	www.cmu.edu/oie
Intercultural Communications Center	412-268-4979	www.cmu.edu/icc
Sorrells Engineering & Science Library	412-268-2427	www.library.cmu.edu
Career & Professional Dev. Center	412-268-2064	www.cmu.edu/career
Global Communications Center	412-268-9633	www.cmu.edu/gcc
Asst. Vice Provost for Grad. Education	412-268-7307	www.cmu.edu/graduate/programs-services
Enrollment & Finances for Grad Students		www.cmu.edu/hub/new-grad/
Graduate Education		www.cmu.edu/graduate
Graduate Student Assembly		www.cmu.edu/stugov/gsa

Please see Appendix B. for more information relating to University's offices and resources.

C) EST&P Study Lounge Information

The Scott Hall 5101 door to the EST&P student study lounge can be accessed by swiping your CMU Student ID. Do NOT prop open the door; this door must remain closed at all times. The kitchen area in the EST&P study lounge will remain available for student use so long as everyone works together to maintain a clean and safe area. CMU custodial services will only empty trash and occasionally vacuum the floor. Do NOT leave cups or dirty dishes in the sink; they represent a health hazard and will eventually be thrown away. Wash your own dishes after use. Do NOT leave food containers, trash, or any personal items in the study lounge. EST&P's professional staff will not clean up after you in the lounge, and each student is responsible to leave the lounge in reasonable order when you leave. Unrestricted access to the study lounge requires responsible adult behavior by each and every EST&P student. If the room is not kept in good condition and becomes a health and safety hazard, then EST&P will have no recourse but to disable the card-swipe lock and only permit access to the study lounge during business hours when EST&P staff are present.

Mailboxes are not available for EST&P student assignment or personal use. If you plan to have something shipped to you at EST&P, please notify the staff in advance and use the following address:

Your Name, c/o EST&P Program
Carnegie Mellon University
5000 Forbes Ave, Scott Hall 5103
Pittsburgh, PA 15213-3890

Printing: As a CMU graduate student you have an assigned Andrew printing quota of \$40 per semester. Please see <https://www.cmu.edu/computing/services/endpoint/printing/quota.html> for printing information. A laser printer is currently available in the EST&P study lounge for limited black and white printing. This printer is a HP LaserJet Pro 400 model M401dne, and you can print by connecting your laptop to the printer's USB cable, or from the on-campus network using the printer's static IP address [172.22.51.11]. Low cost poster printing service is available through the Sorrells Engineering and Science Library in 4400 Wean Hall. Contact the library or see the reference instructions on the [Canvas](#) site- EST&P Professional Resources.

Computing: Each student is assigned a single-sign-on account (Andrew account) that is used to access campus-wide and EST&P computing resources. Andrew accounts can be managed by visiting the Computing Services website at www.cmu.edu/computing/accounts. Students may contact the Computing Services Help Center if you have any IT issues (i.e., computers, phones, printers, etc.) at 412-268-4357 or it-help@cmu.edu.

D) University Policies & Expectations

It is the responsibility of each member of the Carnegie Mellon community to be familiar with university policies and guidelines. In addition to this EST&P graduate student handbook, the following resources are available to assist you in understanding community expectations:

- The Word/Student Handbook: www.cmu.edu/student-affairs/theword
- Academic Integrity Website: www.cmu.edu/academic-integrity
- University Policies Website: www.cmu.edu/policies
- College of Engineering Graduate Student Policy website: <https://engineering.cmu.edu/education/academic-policies/graduate-policies/index.html>
- Graduate Education Website: www.cmu.edu/graduate/policies
- Computing Services Website: www.cmu.edu/computing/guideline
- Carnegie Mellon's policy on alcohol and drugs. All students should be aware of university policies: https://www.cmu.edu/student-affairs/theword/comm_standards/alcohol_drugs.html

International Students must register and attend the mandatory Office of International Education (OIE) international student orientation. If you are unable to attend orientation you may make an appointment to meet with an advisor in the Office of International Education in Warner Hall 3rd floor. You must check in with OIE **by the 10th day of classes** or face administrative withdrawal.

E) Assistance for Individuals with Disabilities

<http://www.cmu.edu/education-office/disability-resources/>

The Office of Disability Resources at Carnegie Mellon University has a continued mission to provide physical and programmatic campus access to all events and information within the Carnegie Mellon community. We work to ensure that qualified individuals receive reasonable accommodations as guaranteed by the Americans with Disabilities Act (ADA) and Sections 503 and 504 of the Rehabilitation Act of 1973. Students who would like to receive accommodations must submit a **Voluntary Disclosure of Disability Form [pdf]** to access@andrew.cmu.edu to begin the interactive accommodation process.

For more information, please see <http://www.cmu.edu/education-office/disability-resources/>. Students with disabilities are encouraged to self-identify with Equal Opportunity Services by contacting Catherine Getchel, 412-268-6121, getchell@cmu.edu to access the services available at the university and initiate a request for accommodations.

F) University Health Requirements

As a full-time student, you must have medical insurance and required immunizations that meet the university's minimum requirements. Please see 2017-2018 student health insurance criteria at www.cmu.edu/health-services/student-insurance.

- All full-time students must meet the university's immunization requirements posted at www.cmu.edu/health-services/immunization. You must complete an online immunization form and/or waiver **by June 30, 2017** documenting that you have either had the required vaccines or have had blood tests proving immunity to certain diseases.

You can complete the immunization form in HealthConnect, accessible at www.cmu.edu/health-services. Failure to submit the online immunization form or meet the requirements before the start of classes will result in disenrollment from classes and removal from university housing.

- Confirm enrollment in the required health insurance plan, or certify compliance with mandatory health insurance coverage at Student Health Services **by September 11, 2017**.

III) EST&P Degree Options and Requirements

The College of Engineering EST&P program offers two coursework based professional master's degrees in energy:

- **M.S. in Energy Science, Technology and Policy (EST&P)** is a degree that requires 96 units of coursework and is completed in two semesters of full-time study
- **M.S. in Energy Science, Technology and Policy - Applied Studies (EST&P-AS)** is a degree requires 120 units of coursework (including 24-units of project) and is completed in three semesters of full-time study

Prospective students apply and receive admission offers directly into one of the EST&P degrees; NOT to one of the affiliated engineering departments. Admitted students cannot make an administrative change between EST&P degrees after accepting admission. The procedure to change between EST&P degrees is the same as requesting a transfer to another CMU degree program: 1.) you must apply to the new degree by the posted admission deadline; 2.) your application will be reviewed by the appropriate admissions committee; 3.) if admission is granted to the new degree then the necessary degree change paperwork is submitted to the registrar and to OIE as appropriate.

EST&P degrees require a minimum of 96-units of coursework in the three categories of Energy Core, Disciplinary Concentration, and Breadth Elective. Additionally, the EST&P-AS degree requires a minimum of 24 additional units of project coursework. The figures on the following two pages graphically illustrate the basic requirements for the two degrees as set out below.

EST&P Core [Energy mini-courses](#) (24 total units of required coursework)

1. 39-610 Energy Conversion and Supply (6 units)
2. 39-613 Energy Transport and Storage (6 units)
3. 39-611 Energy Demand and Utilization (6 units)
4. 39-612 Energy Policy and Economics (6 units)

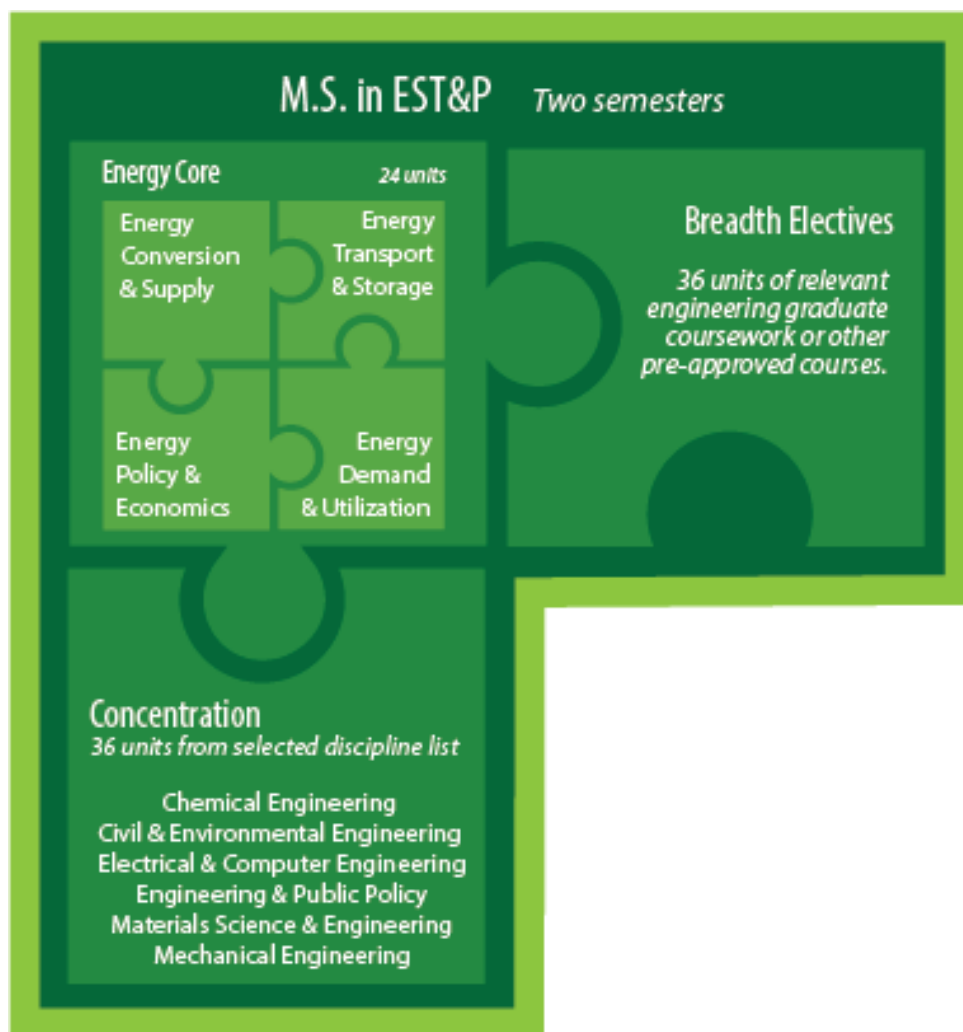
Disciplinary Concentration Course Options (36 units)

EST&P students select one of six disciplinary concentrations when applying for admission, and this choice sets the template for depth coursework. Note that your concentration is not your degree title, and will not appear on your diploma or transcript. If you have concerns regarding your disciplinary concentration, it is your responsibility to consult with your academic advisor. Each participating engineering department has identified the courses that are allowed to fulfill their concentration requirement, and ONLY the listed courses will count towards meeting the disciplinary concentration degree requirement. Concentrations may include both required and elective courses, and vary in structure from department to department. For complete details

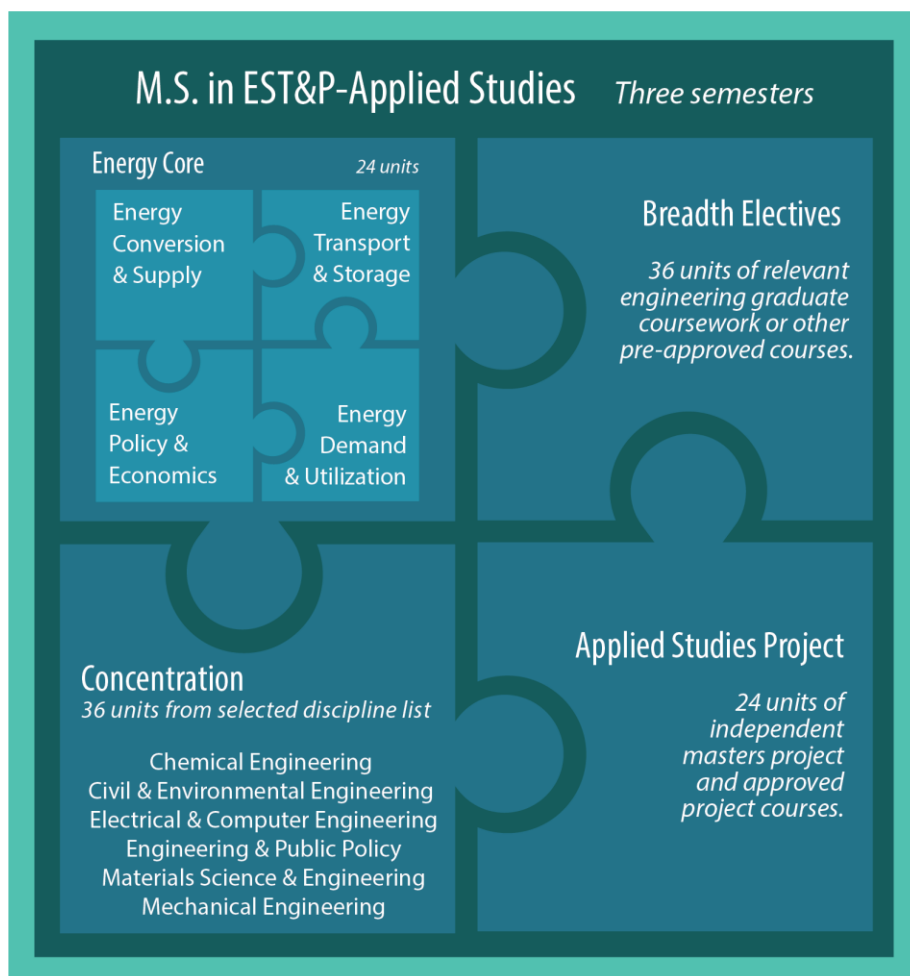
please refer to Appendix A of this Handbook and/or pages on the EST&P Website:
(www.cmu.edu/engineering/estp/degree-programs)

- [Disciplinary concentration in Chemical Engineering](#)
- [Disciplinary concentration in Civil and Environmental Engineering](#)
- [Disciplinary concentration in Electrical and Computer Engineering](#)
- [Disciplinary concentration in Engineering and Public Policy](#)
- [Disciplinary concentration in Materials Science and Engineering](#)
- [Disciplinary concentration in Mechanical Engineering](#)

EST&P Master of Science Degree



EST&P-Applied Studies Master of Science Degree



Energy Science, Technology & Policy (EST&P) degree	Energy Science, Technology & Policy – Applied Studies (EST&P-AS) degree
Master of Science (M.S.) degree	Master of Science (M.S.) degree
Two semesters of full-time study	Three semesters of full-time study
96 total units of coursework: <ul style="list-style-type: none"> -24 units: required four energy core mini-courses -36 units: disciplinary concentration -approved courses set by each dept. (CHE, CEE, ME, MSE, EPP, ECE) -36 units: breadth electives comprising graduate level engineering courses, and limited pre-approved non-engineering graduate classes (max 18 units: Tepper, Heinz, CS, MCS & Architecture courses related to energy) 	120 total units: 96 coursework + 24 M.S. Project: <ul style="list-style-type: none"> -24 units: required four energy core mini-courses -36 units: disciplinary concentration -approved courses set by each dept. (CHE, CEE, ME, MSE, EPP, ECE) -36 units: breadth electives comprising graduate level engineering courses, and limited pre-approved non-engineering graduate classes (max 18 units: Tepper, Heinz, CS, MCS & Architecture courses related to energy) -24 units of master's project; may include independent study, internship, and pre-approved project courses
Up to 12 units of Master's Project /Independent Study coursework may count as breadth elective but is not required	A minimum of 24 units of 39-660 Master's EST&P Project units (or approved substitute) are required

Breadth Elective Course Options (36 units)

Graduate level College of Engineering classes or pre-approved graduate level classes at Carnegie Mellon may be selected as [breadth electives](#). Students are encouraged to take breadth elective courses from outside the department associated with their disciplinary concentration. Up to 12 units of upper-level undergraduate credit (400 or 500 level) can be applied toward the breadth elective requirement, when the course is needed as preparation for a graduate class. Classes at the 300 level and below do not count towards the EST&P degree. If you choose to take courses outside the College of Engineering, **advance written Advisor approval is required**. Your advisor will check that you are not taking more than the limit of 18 units of breadth elective from outside the college, and that you are within the limit of one SCS course per semester.

A maximum of 12 units of directed research / independent study / master's project coursework can be applied toward the 36-unit breadth elective requirement. A letter grade must be assigned for the course and **advance written approval by the supervising faculty member and EST&P advisor is required prior to registration**. A master's project approval request form is available on Canvas. It must be submitted to the EST&P Academic Advisor by the fifth day of classes, and written (email) response will be provided within four business days. This form requires a 1-page plan of study describing the project topic, expected outcomes, deliverables and the method of evaluation. This form must be signed by both the student and the supervising College of Engineering faculty member. The completed form will then allow the student to be registered for the appropriate number of units of EST&P master's project course number 39-660. Where a similar process or course number exists in the supervising faculty member's home department, that procedure may optionally be followed. However, copies of the completed departmental form must be submitted to the EST&P office to be included with your permanent records.

EST&P-AS Project Requirements and Options (24 units)

The EST&P-AS degree includes a 24-unit project requirement for the three-semester degree. In order for independent study project units to count towards the degree, a **student must submit an EST&P master's project approval form that is signed by the supervising faculty member and then approved by an EST&P advisor**. A letter grade must be assigned in the project coursework which is to be primarily conducted on campus. To summarize, project options for EST&P-AS students include but are not limited to the following:

1. With advance approval from the EST&P advisor, regularly scheduled project-intensive engineering classes may count towards meeting the EST&P-AS project 24-unit requirement. An up-to-date list is available on Canvas, and includes for example:

- 24-722 Energy System Modeling
- 24-618 Computational Analysis of Transport Phenomena
- 12-761 Sensing & Data Mining in Smart Structures and Systems
- 12-718 Environmental Engineering, Sustainability and Science Project
- 12-745 Advanced Infrastructure Systems Project
- 39-605 / 39-606 Engineering Design Projects
- 10-601 / 10-701 Machine Learning (project section)
- 18-500 ECE Design Experience, 12 units (this undergrad capstone project also counts as the allowed 12 units of undergraduate coursework)

2. Students on summer internship may register and pay for three or more units of 39-660 EST&P Masters Project or equivalent. These units will count towards the Applied Studies project

requirement; advance approval is required, a final report must be submitted, and project / course supervision will be provided by an EST&P advisor or affiliated faculty member.

3. Students may negotiate independent project opportunities by securing agreement for supervision from a College of Engineering faculty member. The previously described process is followed to sign up for 39-660 EST&P Master's Project units or a similar Masters Project or Independent Study course in the supervising faculty member's department may be substituted.

A) Registration, Full-Time Status & Curricular Practical Training

Course registration is accomplished through CMU's Student Information Online (SIO) system accessible through the HUB website. Students are responsible for enrolling in required core courses, pre-approved disciplinary concentration courses, and pre-approved breadth electives. Register as early as possible to reduce the chances of being wait-listed in a desired course. Refer to the University calendar for official registration dates (mid-November for Spring registration; mid-April for Fall registration - www.cmu.edu/hub/calendar.html).

Before you begin online registration, please carefully review the degree and course requirements summarized here and in Sections VIII and IX (Appendix A). The EST&P Executive Director and Associate Director serve as the academic advisors for the program, and are available to help you choose courses that meet both stated degree requirements and your personal / professional objectives. Please pay careful attention to required courses in your disciplinary concentration, and be aware that most graduate courses are taught only once per academic year.

Students typically begin the program in the Fall Semester and graduate at the end of Spring semester (2 semesters; EST&P degree,) or the following Fall semester (3 semesters; EST&P-AS degree). However, the program can also be completed entering in the Spring semester. Students may apply for admission to either the EST&P degree or EST&P-AS degree. The EST&P degree requires 96-units of coursework completed in two semesters of full-time study and the EST&P-AS degree requires 96-units of coursework plus 24-units of master's project coursework (120 total units) completed in three semesters of full-time study. EST&P-AS is for students desiring: 1.) an experience-based professional study program offering practice-based activities including master's project coursework, or independent/directed study, or internship 2.) project coursework plus additional classes or self-study needed to remove a material deficiency, for example when a student's undergraduate degree is different from their selected EST&P disciplinary concentration.

Full-time student status: EST&P is a full-time degree program in which students complete their degree in two full-time semesters of 48 units per semester. Students in the EST&P Applied Studies degree complete their degree in three semesters of full-time study with a typical course load of 42 units per semester. Unless admitted as a part-time degree-seeking student, all EST&P students are required to register as a full-time student each semester taking at least 36 units.

Part-time student status: Part-time MS ESTP enrollment is an option available for students who have applied and received admission to a part-time degree program of study. This option is made available for students who would like to pursue an MS ESTP degree while maintaining external employment. Note that immigration regulations do not allow Carnegie Mellon University to issue F1 visa documents to a part-time MS degree-seeking student.

Curricular Practical Training: International students who are considering a Curricular Practical Training (CPT) internship in the United States are advised that students who begin in the Fall semester are eligible for a CPT summer internship after two full-time semesters of study in the US. During your CPT internship, you must register for a minimum of three units of Masters Project/ Internship coursework. These units will count towards your degree and you must pay the tuition bill for these units at the part-time per-unit tuition rate. Pre-completion OPT (Optional Practical Training) is available as a summer internship alternative to CPT. Summer course registration is not necessary, but you must apply early in spring semester in order to receive timely OPT approval. Note that an international student who enters EST&P in the Spring semester is not eligible for a CPT summer US internship off-campus because student visa rules require two semesters of full-time study be completed prior to internship eligibility. International students must consult with the Office of International Education (OIE) for eligibility before seeking an internship or signing an offer contract.

B) Program, Financial, and Student Status Issues

Graduate Transfer Credits - Up to 12 units of graduate work completed at other universities, with a grade point average in each course of 3.0 or better, may be considered for transfer credit, provided that such course work is part of a graduate program leading to the degree sought. Such transfer credit is not granted prior to admission to EST&P and must be approved after the student has satisfactorily completed at least 36 units of graduate courses at Carnegie Mellon. Transfer credit requests will be handled on a case by case basis, with special consideration to whether the transfer credits can be applied toward the EST&P degree requirements. Approval of transfer credits to CMU is no guarantee that courses can count towards the EST&P 96-unit requirement, and transfer credits will not substitute for EST&P's core classes.

Cross-Registration/PCHE - All full-time Carnegie Mellon graduate students have the option of taking one course at any of the ten PCHE intuitions. CMU's policy on cross-registration can be found here: www.cmu.edu/hub/registration/undergraduates/cross/

Financial Support - EST&P tuition is charged at the standard College of Engineering masters student rate, and students are billed each semester for one-half of the academic year graduate tuition. The current College of Engineering's graduate tuition and fees are posted on the [HUB website Graduate Tuition & Fees page](#). An EST&P degree student will complete the program in two semesters of full-time study so must pay full-time tuition for two semesters (one academic year). An EST&P-AS degree student will complete the program in three semesters of full-time study so will pay for three semesters of full-time tuition (most likely with a modest increased rate for the 3rd semester tuition). The overall cost of attendance is estimated for the College of Engineering including activity & technology fees, transportation, off-campus housing, health insurance, etc. on the Hub website [Itemized College of Engineering Cost of Attendance](#) page. Students in the EST&P program are self-funded, are funded by their employer, or by external scholarships, fellowships, and educational loans. General information on [financial assistance for engineering graduate students](#) is available on the College of Engineering site, and some additional information about [graduate student fellowships and assistantships](#) is also available.

CMU Canvas System - Most instructors use the CMU Canvas web service to manage course communications, assignments, and reference materials. Carnegie Mellon's Canvas homepage is: <https://cmu.instructure.com/>. EST&P uses Canvas for program and professional communications and you will automatically be enrolled in the **EST&P Professional Resources ('17-'18)** site. Please check this site frequently as it contains important program forms, program

and course information and career related postings. It will be updated throughout the academic year with announcements, calendar of events, professional resources about jobs and internships, program news and updates, energy links, and a discussion board. You are expected to check Canvas weekly and respond to requests for Canvas submissions appropriately. You will also use Canvas to submit onboarding forms required by the program, course syllabi for the repository, and to submit your resume if you wish to be included in the EST&P Resume Book.

Financial Aid - Graduate students should consult the graduate student financial aid information found on The HUB website: www.cmu.edu/finaid/basics/graduate/aid.html . Students will find the Graduate Financial Aid Guide, information about funding options and how to apply for financial aid and other helpful links. Those who find themselves in need of immediate funds for emergency situations should contact the Office of the Dean of Student Affairs (see also Appendix B) www.cmu.edu/student-affairs/index.html

Emergency Loans - The Office of [the Dean of Student Affairs](#) offers short-term emergency loans for supplies, medication, food or other unexpected circumstances. The loans are interest-free and for short periods of time (not longer than a month).

Taxes - The deadline for local, state, and federal taxes is April 15. Questions about your tax status should be addressed to the [IRS](#) or the [Pennsylvania Department of Revenue](#). Although subject to federal taxes, student stipends are generally not assessed local or state taxes.

Full-Time Registration and Course Overloads – Full-time CMU student status requires registering for a minimum of 36 units. Students enrolled in the EST&P degree must take 48-units per semester in order to complete the 96-unit degree requirement in two semesters. The typical course load for an ESTP-AS student is 42 units per semester to complete the 120-unit degree requirement in three semesters. An EST&P student's schedule is over-loaded when it exceeds 48 units per semester. Although courses taken as official audit or pass/fail do not count towards your degree requirements, they do count toward your full-time or overload status. To be eligible for an overload exceeding 48 units per semester, you must petition your academic advisor for advance approval. Your advisor will require a minimum Quality Point Average (QPA) of 3.6 or above in your prior CMU/EST&P semester. International students are advised that a semester course load below 48 units for EST&P or 42 units for EST&P-AS can affect your student visa status because you are not making normal progress towards degree completion. Please consult with the Office of International Education (OIE) and your EST&P academic advisor. As required by F1 visa rules, international students must maintain full-time student status (i.e., registering for at least 36 units) in all semesters including their last semester and must make normal progress toward degree completion each semester.

Courses taken as "Audit" or "Pass-Fail" will not count toward EST&P degree requirements. Officially auditing a course means being present and participating in a class without receiving academic credit or a letter grade. You must first register for the course and then may file a request for audit that requires program and instructor approval. The units of audited courses count toward your maximum course load units, but do not count toward degree requirements. A successfully completed audit course will appear on your transcript with an 'O' audit designation instead of letter grade. The scope and extent of a student's participation must be arranged and approved by the course instructor in advance. Auditors are expected to attend class as though they are regular class member. Some faculty may require you to submit homework and to participate in team project work. Students who do not attend the class regularly, or prepare themselves for class, or meet other instructor audit requirements will receive a blank grade.

Under **limited circumstances**, you may be permitted to convert a course registration to Pass-Fail or Audit with appropriate advisor and instructor approval. To receive EST&P advisor approval you must submit a completed petition form explaining why you are taking coursework that does not count towards the degree. PLEASE NOTE that EST&P policy is to DECLINE advisor approval of Course Audit and Pass/Fail forms for any student registered for an overload schedule of more than 48 units. If you decide you cannot complete a class for letter grade, then your recourse is to drop the class in SIO prior to the deadline.

Deferred Admission Policy – At the time of admission offer, EST&P applicants may petition to defer admission for one semester or one academic year. A petition form will be provided and the written (email) decision will be returned to you within 14 days. After this deadline to accept or defer admission has passed, you must reapply for admission if you wish to be reconsidered. In such cases, EST&P will sponsor your application fee, and will re-use any official tests scores, transcripts, and other documentation sent in support of your application if you so choose.

Master's Thesis - Energy Science, Technology and Policy is a coursework-based professional master's program, and a Master's Thesis option is not available.

IV) Academic Standards and Graduation Requirements

A) Course and Minimum QPA

For the 96-unit EST&P degree or the 120-unit EST&P-AS degree, all courses that are counted towards the degree requirements must be taken for credit with a letter grade assigned. All courses taken as audit or with pass/fail grading DO NOT COUNT towards the 96 or 120-unit degree requirement. For each course taken, the policies and procedures of the instructor, the department, and college in which the course is offered must be followed by EST&P students. The grade assigned by the course professor / instructors is final and cannot be changed. The decision to use plus or minus grading is at the discretion of each course instructor. Mid-semester grades are optional, and Final Grades are posted online to SIO at the end of each semester.

Carnegie Mellon graduate students are graded on a letter grade scale, which can optionally include plus or minus designations at the discretion of the course instructor. The letter grades assigned should be interpreted as:

- A -- Excellent; student work exceeds expectations
- B -- Good; work is acceptable for an EST&P student
- C -- Marginal; student work is not up to EST&P program standards
- D -- Unacceptable work for an EST&P student, does not count towards the degree

EST&P students in either degree must maintain a minimum overall QPA of 3.0 or above (in all courses that count towards the EST&P degree) in order to remain in good academic standing and satisfy the requirements of the Master's Degree. Students with QPAs lower than 3.0 at the end of a semester are notified by an EST&P Program Advisor that they are on academic probation and must increase their QPA to 3.0 or better during their next full-time academic semester.

No course with a grade lower than C may be counted toward the Master's Degree requirements. When calculating the QPA to meet graduation requirements, the average grade of the 96 course units that meet the EST&P Core + Concentration + Breadth degree requirements shall be at least B. If a student has taken more than 96 total units within these categories, then the student may

choose any 96 units of the first 120 units attempted to compute the grade average, providing that the selected 96 units meet EST&P Core + Concentration + Breadth degree requirements. For a student in the Applied Studies degree this rule is amended to allow selection of any 120 units of the first 144 attempted to compute the grade average, providing the courses selected meet all degree requirements.

Students must independently maintain a minimum QPA of 3.0 or above in all required courses. Required courses are the four EST&P Core classes (39-610, 39-611, 39-612, 39-613), plus any additional courses required for the student's selected disciplinary concentration. If a grade of C or lower is earned in any required course, the student will be immediately placed on academic probation and must retake that course and pass with a grade of B or better prior to graduation.

B) Academic Probation

At the end of each semester when grades have been posted, the academic performance of each student is reviewed. Courses that negatively affect the QPA cannot be removed from the requirement unless another completed course can replace the course with the lower grade. The QPA for academic review is computed based on the guidelines for graduation requirements.

Any student with a Core QPA of less than 3.0, with a Cumulative QPA of less than 3.0, or with a QPA of less than 3.0 in the most recent full semester completed, is immediately placed on academic probation. The student will receive an electronic notification (email) of their academic probation status, including a description of the specific terms of their probation and the timeframe and requirements to remove probation. All students on probation are subject to the following sanctions:

- Cannot receive a service scholarship or program support during a probation semester
- Cannot be selected to receive awards, travel / conference funding, etc.
- May not formally represent EST&P as an officer or other positions in a student club or campus organization

In most cases a student on academic probation will automatically be removed from probationary status at the end of the subsequent enrolled semester if their Cumulative and Core QPA calculations improve to the required 3.0 standard. If an EST&P student has a Core or Cumulative QPA lower than 3.0 during an initial or subsequent semester, the student may be permanently dropped from the EST&P program and will not graduate. If this occurs, the student will have an opportunity to appeal to the Provost. Unless the decision is overturned, the student is not entitled to a refund of tuition or student fees.

C) Graduation Requirements and Statute of Limitations

It is the responsibility of each student to ensure that she or he has completed all the necessary coursework for graduation. The EST&P Executive Director and Associate Director are available to advise students during the semester, but only the student can be held responsible for failure to meet graduation requirements. Note that the EST&P curriculum and graduation requirements may be revised from time to time. However, the requirements in effect at the time of a student's matriculation will dictate the graduation requirements that he or she must follow.

All units required for a master's degree in the College of Engineering, whether earned in residence or transferred from another institution, must be recorded on the transcript within six years of the date the student enrolled in the program. This statutory period can be extended by the College of Engineering's Associate Dean for Graduate and Faculty Affairs for special circumstances that do not make it possible for the student to complete the requirements within

the statutory period. Any request for a waiver of the statute of limitations for master's degree studies must be approved by the EST&P Executive Director and by the College of Engineering's Associate Dean for Graduate and Faculty Affairs. The waiver request must explain the exceptional circumstances that warrant an extension. For cases in which a waiver is granted, the waiver will cover specific courses and will specify a time period for completion of the program.

D) Leave of Absence, Withdrawal & Enrollment Verification

Students in the EST&P program are expected to attend all classes and participate in program activities. This excludes any defined academic break periods, and official University holidays. For the most up-to-date University calendar please see www.cmu.edu/hub/calendar.html.

Leave of absence - A student may need to take a temporary leave of absence for many reasons; this is done by filing a Leave of Absence form with the HUB after securing the appropriate signature approvals. The leave will take effect on the date that the form is signed by the Dean of Engineering. Return from a voluntary leave of absence requires program approval through a Request for Return from Leave of Absence form. Students in good standing in all courses, and with no current or pending academic action when taking a Leave of Absence, will be reinstated with the same standing as prior to the leave. Students in poor standing, on academic probation, or with academic integrity violation at the time of their Leave of Absence, must submit a written request for re-instatement. This request will be evaluated by the EST&P admissions committee, who will respond in writing to the request within two weeks. Requests for reinstatement must be submitted within the time limit imposed by the 6-year statute of limitations.

Withdrawal - A student who decides to leave the university with no intentions of returning is required to file a Withdrawal form with the HUB. A student cannot return from a Withdrawal. For more information visit the University's [Student Leave](#) and [Student Return](#) policies.

Enrollment Verification - Enrollment Services is the only University office that can provide an official letter of enrollment, official transcript, or enrollment verification. Enrollment verification can be requested online through [The HUB](#). If necessary, you can request the EST&P program to provide a letter certifying your disciplinary concentration as this information is not specified on either your diploma or transcript.

V) Academic Integrity

Carnegie Mellon maintains the highest ethical standards, and makes continuous effort to identify and create the kind of academic environment that its members wish to enjoy. As a CMU graduate student you are an important participant in our University partnership that includes all faculty, staff, administrators, undergraduates, and graduate students. Thus, you are responsible for academic integrity, honesty, and fairness as is the responsibility of all university community members.

The [CMU Office of Research Integrity and Compliance website](#) describes the university's position on ethical research, and this applies to research and project work you conduct as part of your degree coursework. "Carnegie Mellon University is responsible for the integrity of research conducted at the university. As a community of scholars, in which truth and integrity are fundamental, the university must establish procedures for the investigation of allegations of misconduct of research with due care to protect the rights of those accused, those making the allegations, and Carnegie Mellon University. Furthermore, federal regulations require the

university to have explicit procedures for addressing incidents in which there are allegations of misconduct in research. Research misconduct is defined as fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results...”

In support of the university’s position, EST&P encourages EVERY incoming student take the CMU/CIT recommended training offered by the Collaborative Institutional Training Initiative (CITI). Furthermore, **ALL students in the EST&P-AS degree, and EST&P degree students taking Independent Study or Master’s Project course work, are REQUIRED to complete the training by the end of their first semester- December 8, 2017**, and to submit their certificate of successful completion to the EST&P Program Coordinator. The CIT Graduate Student Policy provides the following instructions, “For CIT graduate students, the CITI physical science module package is recommended rather than the module package for engineers, although both are acceptable. The courses are available at CITI’s website at www.citiprogram.org/ . Select Carnegie Mellon University as your participating institution when you create your account. This topic is described fully in the CIT Graduate Student Policy page under [Responsible Conduct of Research \(RCR\)](#).

REQUIRED Plagiarism Quiz: The University of Indiana has an exceptional website that provides examples and a quiz to determine if you understand the difference between proper and improper attribution of text. **All EST&P students are required** to complete this quiz before the end of the first week of classes, and print and submit the certification provided when the quiz is passed. Certifications will be submitted via the EST&P Canvas site and collected by the EST&P Admissions and Program Coordinator. Submitting this certification indicates that you have learned and understand the approved processes for text attribution. You will be held responsible for this information if a conflict arises in the academic year. Please complete the plagiarism quiz using the following link: www.indiana.edu/~istd/plagiarism_test.html

Academic Integrity violations may arise when a student misinterprets course syllabus instructions prohibiting group collaboration on graded homework, or from blatant falsification of submitted work. Both situations result in disciplinary action, so please review carefully the policy on academic integrity at www.cmu.edu/academic-integrity/. While you should view the threat of disciplinary action as a serious one, it is equally important that you take up the ideal of Academic Integrity as foundational to your educational experience at CMU. We encourage you to embrace this part of the intellectual thread that binds you with the University community. Accordingly, the complete CMU Statement on Academic Integrity is quoted here.

[Policy on Academic Integrity](#) - DATE OF ISSUANCE: This policy was approved by President’s Council on April 11, 2013 and replaces the University’s Policy on Cheating and Plagiarism, which was originally issued to campus on June 16, 1980 as Organization Announcement #297, and then revised in 1990.

“ABSTRACT: Academic credit awarded to an individual should represent the work of that individual. Therefore, students at Carnegie Mellon are expected to produce their own original academic work. Collaboration or assistance on academic work to be graded is not permitted unless explicitly authorized by the course instructor(s). The citation of all sources is required. When collaboration or assistance is permitted by the course instructor(s), the acknowledgement of any collaboration or source of assistance is likewise required. Failure to do so is dishonest and is the basis for a charge of cheating, plagiarism, or unauthorized assistance. Such charges are subject to disciplinary action.

Students at Carnegie Mellon are engaged in intellectual activity consistent with the highest standards of the academy. The relationship between students and instructors and their shared commitment to overarching standards of respect, honor and transparency determine the integrity of our community of scholars. The actions of our students, faculty and staff are a representation of our university community and of the professional and personal communities that we lead. Therefore, a deep and abiding commitment to academic integrity is fundamental to a Carnegie Mellon education. Honesty and good faith, clarity in the communication of core values, professional conduct of work, mutual trust and respect, and fairness and exemplary behavior represent the expectations for ethical behavior for all members of the Carnegie Mellon community.

A) University Policy Statement

In any manner of presentation, it is the responsibility of each student to produce her/his own original academic work. Collaboration or assistance on academic work to be graded is not permitted unless explicitly authorized by the course instructor(s). Students may utilize the assistance provided by Academic Development, the Global Communication Center, and the Academic Resource Center (CMU-Q) unless specifically prohibited by the course instructor(s). Any other sources of collaboration or assistance must be specifically authorized by the course instructor(s).

In all academic work to be graded, the citation of all sources is required. When collaboration or assistance is permitted by the course instructor(s) or when a student utilizes the services provided by Academic Development, the Global Communication Center, and the Academic Resource Center (CMU-Q), the acknowledgement of any collaboration or assistance is likewise required. This citation and acknowledgement must be incorporated into the work submitted and not separately or at a later point in time. Failure to do so is dishonest and is subject to disciplinary action.

Instructors have a duty to communicate their expectations including those specific to collaboration, assistance, citation and acknowledgement within each course. Students likewise have a duty to ensure that they understand and abide by the standards that apply in any course or academic activity. In the absence of such understanding, it is the student's responsibility to seek additional information and clarification.

B) University Policy Violations

Cheating occurs when a student avails her/himself of an unfair or disallowed advantage which includes but is not limited to:

1. Theft of or unauthorized access to an exam, answer key or other graded work from previous course offerings.
2. Use of an alternate, stand-in or proxy during an examination.
3. Copying from the examination or work of another person or source.
4. Submission or use of falsified data.
5. Using false statements to obtain additional time or other accommodation.
6. Falsification of academic credentials.

Plagiarism is defined as the use of work or concepts contributed by other individuals without proper attribution or citation. Unique ideas or materials taken from another source for either written or oral use must be fully acknowledged in academic work to be graded. Examples of sources expected to be referenced include but are not limited to:

1. Text, either written or spoken, quoted directly or paraphrased.

2. Graphic elements.
3. Passages of music, existing either as sound or as notation.
4. Mathematical proofs.
5. Scientific data.
6. Concepts or material derived from the work, published or unpublished, of another person.

Unauthorized assistance refers to the use of sources of support that have not been specifically authorized in this policy statement or by the course instructor(s) in the completion of academic work to be graded. Such sources of support may include but are not limited to advice or help provided by another individual, published or unpublished written sources, and electronic sources. Examples of unauthorized assistance include but are not limited to:

1. Collaboration on any assignment beyond the standards authorized by this policy statement and the course instructor(s).
2. Submission of work completed or edited in whole or in part by another person.
3. Supplying or communicating unauthorized information or materials, including graded work and answer keys from previous course offerings, in any way to another student.
4. Use of unauthorized information or materials, including graded work and answer keys from previous course offerings.
5. Use of unauthorized devices.
6. Submission for credit of previously completed graded work in a second course without first obtaining permission from the instructor(s) of the second course. In the case of concurrent courses, permission to submit the same work for credit in two courses must be obtained from the instructors of both courses.”

C) Penalties for Academic Integrity & Community Standards Violations

Violations will be handled on a case by case basis. In addition to the course-level action imposed by the instructor, students will be subject to the same sanctions as with academic probation:

- Cannot receive a service scholarship or program support; any service projects or awards provided by EST&P will be rescinded immediately, including retroactive rescinding of awards received in previous semesters
- Cannot be selected to receive awards, travel/conference funding, etc.
- May not formally represent EST&P as an officer or other positions in a student club or campus organization

In accordance with university policy, a student who violates the academic integrity and community standards policy will not be permitted to drop the course in which the offense occurred in order to avoid the penalty. If the student attempts to drop the course, he/she will be re-enrolled. If the student retakes the course or an equivalent course to fulfill the program requirement or prerequisite, he/she will be charged additional tuition. Students who want to appeal an academic integrity action must state in writing to the Provost their intention to do so within one week of the penalty date in questions, and then must submit their written appeal to the Provost no later than two weeks after said penalty date. Appeals must be in writing, with appropriate documentation.

In extreme cases where the first violation is particularly deplorable as determined by the EST&P Executive Director and Associate Director, a student may be permanently dropped from the EST&P program. Upon a second academic integrity violation, the student will immediately be dropped from the EST&P program.

University-wide Academic Disciplinary Protocol - Procedures for dealing with allegations of these policy violations are detailed in the university's Academic Disciplinary Action Procedures for Graduate Students: www.cmu.edu/academic-integrity/documents/academic-disciplinary-actions-overview-for-graduate-students.2013.pdf which is published as part of The WORD student handbook. Periodic review of these procedures will be overseen by the Dean of Student Affairs or her/his designee in consultation with Faculty Senate and the relevant student governing bodies. Any amendments to these procedures are subject to the approval of Faculty Senate. Additional guidelines and procedures for graduate students may exist at the college/department/program level, in which case they are communicated in the college/department/program graduate student handbook.

VI) Grievance Resolution; Graduate & University Ombudsman

Graduate students are expected to discuss any concerns or grievances with members of their academic program, including the Executive Director, Associate Director, and/or academic advisor as appropriate. If a student wishes, the Associate Dean for Graduate and Faculty Affairs of the College of Engineering is available for consultation. All such discussions will be considered confidential provided no laws are broken and unless otherwise told by the graduate student.

If resolution of an academic grievance or concern cannot be obtained within their academic departments, graduate students may file a formal appeal of academic actions to the Associate Dean for Graduate and Faculty Affairs of the college. If a resolution cannot be reached by this process, an appeal may be made to the Provost at the request of either the student or the college.

A summary of the graduate student appeal and grievance procedures is available at the following link: www.cmu.edu/graduate/policies/appeal-grievance-procedures.html

Within the EST&P program, students are encouraged to work the Executive Director and Associate Director when problems arise. However, situations may occur where students need advice on some aspect of their activities or interactions with others in the EST&P program, yet may not feel it is appropriate to speak with their advisor or another member of the faculty. While close friends and family are important resources in such situations, it is also true that their scope of experience might not include working toward a Master's degree in Engineering at CMU. For this reason, EST&P relies on a Graduate Ombudsperson from our administrative home department. The Materials Science and Engineering Ombudsperson is Neetha Khan and you may contact her at neetha@andrew.cmu.edu. She is available to consult with students about any situation that affects their work and, where appropriate, offer advice or attempt to resolve a problem. Conversations with the Ombudsperson are confidential (provided no laws are broken and unless otherwise told by the graduate student) and the Ombudsperson will not communicate information to the EST&P program office, Executive Director or Associate Director, Engineering Department Heads, or other faculty/staff members without the student's consent.

The Assistant Vice Provost for Graduate Education, Suzie Laurich-McIntyre, is the university Ombudsman for graduate students. You may contact her at 412-268-7307 or suzannel@andrew.cmu.edu. The Ombudsman's role is to provide support for graduate students under complete confidentiality (provided no laws are broken and unless otherwise told by the graduate student). The Ombudsman will assist and support graduate students to help clarify issues and suggest possible solutions to problems as well as direct students to the appropriate departmental and college processes and resources for handling conflicts.

VII) EST&P Student Roles and Responsibilities

You are responsible to track your progress towards completion of EST&P degree requirements by monitoring course registration and degree progress in Student Information On-Line (SIO). In addition, please check your Andrew email daily and Canvas pages frequently for communications from your professors and from EST&P program staff. When questions arise first consult this student handbook, official CMU website, EST&P Canvas, and other appropriate official references. If further clarification is needed, consult with EST&P staff. Your fellow classmates are NOT official sources concerning whether a specific course will count towards your degree requirements as he/she might have different circumstances than your own. You must have prior written advisor approval to count any course not specifically on an approved list in this document or on the EST&P website. A few general guidelines:

- Be respectful of your fellow students, professors and EST&P staff member's time. If you are late for, or miss your confirmed appointment a new appointment will likely need to be scheduled.
- Take responsibility for your own learning, wellbeing, and decision-making. Be an active member in the many and various communities: EST&P, GSA, Carnegie Mellon, the energy profession, etc.
- Be aware that making a request does not mean it will be granted.

A) Attendance Requirements and Timeframes

Students must be physically present and attend class at the start of each semester. As a courtesy to others, students should drop a course as soon as they decide not to take it. This will allow a waitlisted student to be enrolled and will limit the disruption to any team-based projects. It is not uncommon to be waitlisted from the time of registration up until the tenth day of class. This is common practice across the university to ensure that students within their home department have priority to register for courses they must take in order to graduate. **CMU students are not permitted to register for two courses that conflict in time.** Delays caused by failing or dropping a class, or academic probation due to poor grades, are not allowable reasons for extension of a program of study. All EST&P students must attend final exams as scheduled by the university and individual course instructors; neither the EST&P program nor course instructors have control over the university exam schedule. Please keep this in mind when arranging travel at the end of a semester; having purchased airline tickets is not an acceptable excuse for missing a final exam.

Timing of requests: Please allow a minimum of 24 hours (one business day) to process a required form or to respond to an email request. EST&P Staff can occasionally accommodate a "last minute" request, but cannot guarantee to be available for immediate response should you bring a form to be signed right before attending an information session where it is due.

B) Academic Advisor

The role of the Academic Advisor is complex and can vary from student to student, but at least two characteristics can be identified: mentor and evaluator. The Advisor is responsible for evaluating the student's progress, and for jointly working with the student toward a successful outcome. Make an appointment with your advisor when you need specific information on course options and degree progress, or need professional advice. Your advisor will do his/her best to provide information and point you to resources relevant to your issue or concern. A few additional points:

- Your Advisor will not “make a decision for you”. The Advisor might be able to provide some positive and negative aspects towards a particular decision path, but ultimately the decision is up to the student regarding the issue at hand or inquiry.
- The EST&P Advisor is a cooperative partner along with other CMU resources helping each student stay on track towards academic and professional career success
- A conversation with your advisor that takes place in the hallway or EST&P lounge does not count as “written approval”. Written approval is defined as either a signed form, notes in the official student file, a letter or an email.

Change of Advisor – The Executive Director and Associate Director serve as academic advisors for all EST&P students. It is the responsibility of both the Advisor and Student to seek accommodations of differences in good faith. If a student wishes to change their academic advisor, this can be done via an email request to the Program Coordinator, who will make the update to the student’s file.

Changing Academic Requirements and Policies -In the relentless pursuit of excellence, the EST&P program may change its requirements from time to time. EST&P uses a “grandfather” policy with regard to these changes; that is, every student has the right to graduate under the policies in effect at the time of entry into the graduate program or to graduate under the policy in force at the time of receiving the degree. It is the responsibility of each student to read and understand the contents of this handbook. This handbook is not exhaustive and is subject to change, clarification and revision at any time.

C) Professional Development Resources and Opportunities

Carnegie Mellon University and the EST&P program offer a number of professional development opportunities and benefits such as: on-campus career fairs, professional networking opportunities, workshops, career counseling, conference registration and travels funds, professional development support, service scholarships, and Graduate Student Assembly (GSA) representation. The following list identifies opportunities and application procedures; note that applying does not guarantee approval or acceptance of your request.

1. *EST&P Professional Development Allocation:* EST&P students may apply to receive up to \$50 per semester in professional development expense reimbursement during each semester of full-time enrollment in the EST&P program. Expenses **MUST** be preapproved and allocated by the EST&P directors, and must meet CMU guidelines for allowable non-employee expense reimbursement. Typical allowed expenses include: student-registration fee for an energy conference, professional certification exams, poster printing and the like.
2. *Business Cards:* You have the option to request CMU business cards during a select period of time that will be announced. The program sponsors the first 100 cards. You can request business cards online [here>>](#).
3. *Service Scholarships:* A limited number of service scholarships are offered to incoming EST&P students with exceptional qualifications. Service scholarship offers are made by the admissions committee at the time of that admission is offered; recipients currently receive ~20% reduction in their semester tuition. Service Scholarship recipients must be full-time EST&P students. Scholarships may be extended for an additional semester if funding is available and if the student is in good academic standing (as judged by QPA and collaboration with faculty). Service scholarships are not offered at any time other than admission; however, see point 8.

4. [Graduate Student Conference Funding](#) is available through the Graduate Student Assembly and the Provost's Office, and is managed by the Office of the Assistant Vice Provost for Graduate Education. Preference is given to students making presentations and the award amount is up to \$500 per student with a maximum of \$1,000 per group. The open application periods and deadlines are listed on the [graduate education website](#). Read and follow all the directions, and make sure you can meet all criteria for acceptance including required post-conference activities of reporting and publicity participation.
5. *EST&P Conference Travel Supplemental Reimbursement*: There are opportunities throughout the academic year to attend energy related conferences, present posters or papers, and represent the EST&P program. If you wish to attend and participate in a professional meeting or conference and to represent EST&P, you may request partial support for your travel by submitting a Conference Travel Application to EST&P requesting financial support. This form must be **submitted for review at least three weeks in advance of the travel date**. Awards are contingent on availability of program funds, and priority is given for those making a paper or poster presentation, and for those making cost efficient travel plans. Your professional development allocation will be used as part of any awarded conference funding, and preference is given to supplement GSA conference funding awards. Only one supplemental request for travel support per student will be considered. Submission and approval of a Conference Travel Application is separate from but related to the travel reimbursement process. For both professional development and travel reimbursement process, please contact the EST&P program coordinator for further detail and instructions. Receipts must be submitted within one week of purchase date or return from travel.
6. The Carnegie Mellon [Career and Professional Development Center](#) (CPDC) provides numerous career preparation and job search resources. These include guidance in preparation of resumes and cover letters, interviewing skills, offer negotiation and career networking, and career fair opportunities. CPDC staff hold a weekly office hour in the EST&P study lounge and teach a 3-unit 39-699 course "Career & Professional Development for Engineering Master's Students". Be sure to sign up for [Handshake](#) for full access to CPDC resources.
7. The CMU Graduate Education office provides numerous programs, workshops, and services of value to EST&P professional master's students. Check their [Professional Development page](#) for up-to-date listing of events.
8. *OTHER OPPORTUNITIES*, as will be announced during the academic year. These may include requests for a Course Assistant for an EST&P class or for a Student Ambassador to support EST&P development and marketing, etc. When available, EST&P will advertise these opportunities to all eligible students and provide an application process.
9. *Graduate Student Assembly (GSA)*: The GSA is a University-wide branch of student government that represents all graduate students at Carnegie Mellon. EST&P students elect their own representative to GSA who will serve as their contact regarding GSA issues and events. Moreover, GSA returns a portion of your student fees to the EST&P student group if you are represented, and these funds can be used to support social and educational events as decided by the EST&P students.
 - a. EST&P GSA representatives may be elected by students or appointed by the program office. Current representatives often assist to find their successor, and EST&P asks each GSA representative to sign a responsibilities agreement.
 - b. Responsibilities of the EST&P GSA representative include: attending GSA meetings, organizing at least one social event per semester (i.e., rock climbing,

bowling, ice skating, etc.), sitting on funding award committee, acting as a liaison between EST&P program staff and students, and help with events.

D) Academic Calendar, Course Registration and Prerequisites

EST&P adheres to the official [CMU academic calendar](#). The [Heinz College](#) and the [Tepper School of Business](#) follow their own calendars with dates that differ from the university's calendar for add, drop, audit, and pass/fail deadlines. EST&P students must adhere to these deadlines if they are taking courses from these colleges.

As a graduate student, SIO may allow you to register for courses without having the published prerequisite. However, it is each student's responsibility to have adequate background knowledge to be successful in the courses they take.

E) Safeguarding Educational Equity

CMU Policy Against Sexual Harassment and Sexual Assault - Sexual harassment and sexual assault are prohibited by CMU, as is retaliation for having brought forward a concern or allegation in good faith. The policy can be viewed in its entirety at:

www.cmu.edu/policies/documents/SA_SH.htm. If you believe you have been the victim of sexual harassment or sexual assault, you are encouraged to make contact with any of the following resources:

- Sexual Harassment Advisors, found in appendix A of the Policy Against Sexual Harassment and Sexual Assault;
- Survivor Support Network, found in appendix B of the Policy Against Sexual Harassment and Sexual Assault;
- Sexual Harassment Process and Title IX Coordinators, found in section II of the Policy Against Sexual Harassment and Sexual Assault;
- University Police, 412-268-2323
- University Health Services, 412-268-2157
- Counseling & Psychological Services, 412-268-2922

Maternity Accommodation Protocol - Students whose anticipated delivery date is during the course of the semester may consider taking time away from their coursework and/or research responsibilities. All female students who give birth to a child while engaged in coursework or research are eligible to take either a short-term absence or formal leave of absence. Students in course work should consider either working with their course instructor to receive incomplete grades, or elect to drop to part-time status or to take a semester leave of absence. Students engaged in research must work with their faculty to develop plans for the research for the time they are away. Students are encouraged to consult with relevant university faculty and staff as soon as possible as they begin making plans regarding time away. Students must contact the Office of the Dean of Student Affairs to register for Maternity Accommodations. Students will complete an information form and meet with a member of the Dean's Office staff to determine resources and procedures appropriate for the individual student. Planning for the student's discussion with her academic contact(s) (advisor, associate dean, etc.) will be reviewed during this meeting.

VIII) EST&P or EST&P-AS Degree Requirements Check-List Energy Science, Technology and Policy Master's program

Academic Year 2017-'18

NAME: _____ Andrew ID: _____

Degree (EST&P or EST&P-AS): _____ Disciplinary Concentration _____

CORE COURSES: 24 units required for all EST&P students

Semester	Course #	Units	Title
FALL	39-610	6	Energy Conversion & Supply
FALL	39-613	6	Energy Transport & Storage
SPRING	39-611	6	Energy Demand &Utilization
SPRING	39-612	6	Energy Policy & Economics

DISCIPLINARY CONCENTRATION: 36 units required: must be from approved concentration course list

Semester	Course #	Units	Title

_____ **TOTAL \geq 36 units**

BREADTH ELECTIVES: 36 units required, College of Engineering graduate courses and/or pre-approved CMU graduate courses, with maximum of 12-units undergraduate courses needed as preparation for a graduate class

Semester	Course #	Units	Title

_____ **TOTAL \geq 36 units**

PROJECT COURSES for EST&P-AS Degree ONLY: 24 units required

Semester	Course #	Units	Title

IX) Appendix A. Approved Disciplinary Concentration Courses

Disciplinary concentration in Chemical Engineering (CHE)

REQUIRED: 06-665 Process Systems Modeling (MS level SP: 12 units)

plus 24 additional units selected ONLY from the following list of classes:

<i>M.S. level courses recommended as CHE disciplinary concentration</i>		
06-623	Mathematical Modeling of Chemical Engineering Processes	FA: 12 units
06-625	Chemical and Reactive Systems	FA: 12 units
06-663	Analysis and Modeling of Transport Phenomena	SP: 12 units
<i>PhD courses permitted as CHE disciplinary concentration</i>		
06-702	Advanced Reaction Kinetics	SP: 12 units
06-703	Advanced Fluid Dynamics	FA: 12 units
06-704	Advanced Heat and Mass Transfer	SP: 12 units
06-705	Advanced Chemical Engineering Thermodynamics	FA: 12 units
06-713	Mathematical Techniques in Chemical Engineering	FA: 12 units
06-720	Advanced Process Systems Engineering	SP: 12 units

Graduate engineering classes are generally offered once per year, in either Spring (SP) or Fall (FA) semester. For course descriptions, search CMU Schedule of Classes.

Disciplinary concentration in Civil and Environmental Engineering (CEE)

The CEE disciplinary concentration is defined as 36 units of approved CEE graduate-level courses (other than independent study or graduate project courses). Approved courses are available in sustainability, water quality, air quality, advanced infrastructure systems, mechanics and other areas. **ONLY courses on the following list are approved for the CEE concentration:**

12-704	Probability and Estimation Methods for Engineering Systems	FA: 12 units
12-706	Civil Systems Investment Planning and Pricing	FA: 12 units
12-712	Introduction to Sustainable Engineering	FA: 12 units
12-714	Environmental Life Cycle Assessment	SP: 12 units
12-740	Data Acquisition, Sensing, and Instrumentation	FA-A1: 6 units
12-741	Data Management and Analysis	FA-A2: 6 units
12-745	AIS Systems Project Course	SP: 12 units
12-747	Sustainable Buildings	FA-A1: 6 units
12-749	S. T.: Climate Change Adaptation	SP: 6 units
12-750	Infrastructure Systems	SP: 12 units
12-751 / 651	Air Quality Engineering	SP: 12 / 9 units
12-752	S.T. Data-Driven Building Energy Management	FA-A2: 6 units
12-761	S.T. Sensing and Data Mining for Smart Structures and Systems	SP: 12 units
12-766	S.T. Climate Change, Science and Adaption	SP: 12 units

Graduate engineering classes are generally offered once per year, in either Spring (SP) or Fall (FA) semester. Special Topics (S.T.) are new or infrequent classes that may not be regularly scheduled. For course descriptions, search CMU Schedule of Classes.

Disciplinary concentration in Electrical and Computer Engineering (ECE)

36 units are required, and **ONLY** courses on the following list are approved for the ECE disciplinary concentration:

18-418	Electric Energy Processing: Fundamentals and Applications (counts as undergrad course)	SP: 12 units
18-618	Smart Grids & Future Electric Energy Systems	FA: 12 units
18-631	Introduction to Information Security	FA: 12 units
18-649	Distributed Embedded Systems (occasional)	FA: 12 units
18-730	Introduction to Computer Security	FA: 12 units
18-731	Network Security	SP: 12 units
18-743	Energy Aware Computing	FA: 12 units
18-771	Linear Systems	FA: 12 units
18-777	Complex Large-Scale Dynamic Systems (occasional)	12 units
18-875	Economics and Engineering of Electric Energy Systems	SP: 12 units
18-879M	S.T. in Systems & Controls: Optimization in Energy Networks	SP: 12 units
18-879S	S.T. in Systems & Controls: Networked Control Systems (occasional)	12 units
18-882	S.T. in Energy Systems: Power Electronics	FA: 12 units

Graduate engineering classes are generally offered once per year, in either Spring (SP) or Fall (FA) semester. Special Topics classes (S.T.) are new or infrequent classes that may not be regularly scheduled. For course descriptions, search CMU Schedule of Classes.

Disciplinary concentration in Engineering and Public Policy (EPP)

The EPP disciplinary concentration is defined as 36 units of approved EPP graduate-level courses (other than independent study or graduate project courses). **ONLY the following courses are approved to satisfy the EPP disciplinary concentration:**

19-424 (cross-listed/c.l. MEG 24-424)	Energy and the Environment (<i>undergrad course; grad. enrollment limited; counts as 9 of the allowed 12 undergrad units</i>)	FA: 9 units
19-472 (c.l. ECE 18-372)	Fundamentals of Electric Power Systems (<i>undergrad course; counts as allowed 12 undergrad units towards EST&P degree</i>)	12 units
19-617 (CEE 12-750)	Infrastructure Management	
19-624	S.T. Emerging Energy Policies	FA: 12 units
19-625	Sustainable Energy for the Developing World	SP: 12 units
19-626 (occasional)	Climate Science and Policy	12 units
19-638	Smart Grids & Future Electric Energy Systems	FA: 12 units
19-653 (MEG 24-640)	S.T. Climate Change Mitigation	SP: 12 units
19-655A	S.T. Climate Change, Impacts and Adaptation	FA: 12 units
19-655C	S.T. Design, Innovation and Strategy	FA: 12 units
19-656	S.T. CO2 Capture and Sequestration	SP: 6 units
19-683	S.T. Science, Technology & Innovation Policy	FA: 6 units
19-688 (occasional)	Innovation for Energy and the Environment	12 units
19-696	S.T. Sustainable Development & Innovation	FA: 9 units
19-714 (CEE 12-714)	Environmental Life Cycle Assessment	SP: 12 units
19-717 (CEE 12-712)	Introduction to Sustainable Engineering	FA: 12 units
19-724 (MSE 27-724)	Materials for Energy Storage	6 units
19-736 (MSE 27-726)	Energy and Materials in Policy Making	6 units
19-739 (ECE18-875)	Engineering & Economics of Electric Energy Systems	SP: 12 units
19-740 (MEG 24-740)	Combustion & Air Pollution Ctrl	SP: 12 units
19-751 (CEE 12-751)	Air Quality Engineering	SP: 12 units
19-881 /19-882	1. Electric Market Restructuring 2.Low Carbon Electric Pwr	FA/SP: 6

Disciplinary concentration in Materials Science and Engineering (MSE)

REQUIRED: 27-798 Thermodynamics I (FA-A1: 6 units)

27-799 Thermodynamics II (FA- A2: 6 units)

Plus 24 additional units selected ONLY from the following list of classes:

27-705	Nanostructured Materials	SP: 12 units
27-718	Soft Materials	FA: 12 units
27-721	Processing Design	FA: 12 units
27-724	Materials for Energy Storage	SP-A4: 6 units
27-725	Materials in Nuclear Systems	6 units
27-727	Mechanical Behavior in Extreme Environments	SP: 6 units
27-728	Materials for Future Energy Systems	6 units
27-729	Solid State Devices for Energy Conversion	FA: 6 units
27-730	Energy Consumption and Minimization in Metals Production	FA: 6 units
27-750	Advanced Characterization and Microstructural Analysis	SP: 12 units
27-752	Foundations of Semiconductor Nanostructures	12 units
27-765	Special Topics: Materials and Society	
27-766	Diffusion in Materials	FA: 6 units
27-770	Electronic, Magnetic, and Optical Properties	SP: 12 units
27-771	Special Topics: Materials and Devices for Energy Efficiency Applications	SP: 12 units
27-788	Defects in Materials	FA: 6 units
27-794	Chemical Stability of Materials in Extreme Environments	6 units
27-796	Structure of Materials	FA: 6 units
27-797	Bonding of Materials	FA: 6 units

Disciplinary concentration in Mechanical Engineering (MEG or MechE)**REQUIRED:** 24-722 Energy System Modeling (FA: 12 units)**plus 24 units selected ONLY from the following list of classes:**

24-616	Tribology - Friction, Lubrication & Wear	12 units
24-618	Computational Transport Phenomena	SP: 12 units
24-628	Special Topics: Energy Trans & Conv. at Nano Scale	SP: 12 units
24-629	Special Topics: Direct Solar & Thermal Energy Conversion	FA: 12 units
24-640	Special Topics: Climate Change Mitigation	SP: 12 units
24-644	Special Topics: Advanced Power Plant Design	SP: 12 units
24-711	Fluid Mechanics	12 units
24-718	Computational Fluid Dynamics	SP: 12 units
24-721	Advanced Thermodynamics	FA: 12 units
24-730	Advanced Heat Transfer	FA: 12 units
24-731	Conductive Heat Transfer	6 units
24-732	Convective Heat Transfer	6 units
24-733	Radiative Heat Transfer	6 units
24-736	Two-Phase Flow & Heat Transfer	
24-642	Fuel Cell Systems	FA: 12 units
24-740	Combustion and Air Pollution Ctrl	SP: 12 units

X) Appendix B. University Resources

Key Offices for Graduate Student Support

Office of the Assistant Vice Provost for Graduate Education

www.cmu.edu/graduate; grad-ed@cmu.edu

The Office of the Assistant Vice Provost for Graduate Education, AVPGE, directed by Suzie Laurich-McIntyre, Ph.D., Assistant Vice Provost for Graduate Education, provides central support for graduate students in a number of roles. These include: being an ombudsperson and resource person for graduate students as an informal advisor; resolving formal and informal graduate student appeals; informing and assisting in forming policy and procedures relevant to graduate students; and working with departments on issues related to graduate students and implementation of programs in support of graduate student development.

The Office of the AVPGE often partners with the division of Student Affairs to assist graduate students with their Carnegie Mellon experience. Senior members of the student affairs staff are assigned to each college (college liaisons) and are often consulted by the Assistant Vice Provost for Graduate Education and departments on an individual basis to respond to graduate student needs.

The Office of the Assistant Vice Provost for Graduate Education (AVPGE) offers a robust schedule of professional development opportunities. Some are geared towards a specific population (master's students, PhD students at the beginning of their program, graduate students seeking tenure track positions, etc.) and others are open to all graduate students (time management, balancing, staying healthy). A full schedule of programs can be found at: <http://www.cmu.edu/graduate/>.

The Office of the AVPGE also coordinates several funding programs, and academically focused seminars and workshops that advise, empower and help retain all graduate students, particularly graduate students of color and women in the science and technical fields. The fundamental goals of our programs have been constant: first, to support, advise and guide individual graduate students as they work to complete their degrees; second, to contribute to the greatest degree possible to the diversification of the academy. Visit the Graduate Education website for information about:

- Conference Funding Grants
- Graduate Small Project Help (GuSH) Research Funding
- Graduate Student Professional Development: seminars, workshops and resources
- Graduate Women Gatherings (GWG)
- Inter-university Graduate Students of Color Series (SOC)

Office of the Dean of Student Affairs

www.cmu.edu/student-affairs/index.html

The Office of the Dean provides central leadership of the metacurricular experience at Carnegie Mellon. The offices that fall under the division of Student Affairs led by Vice President and Dean of Student Affairs Gina Casalegno, include (not an exhaustive list):

- Athletics
- Career and Professional Development Center
- Cohon University Center
- Counseling & Psychological Services (CaPS)
- Dining Services

- Housing Services
- Office of Community Standards and Integrity
- Office of Student Leadership, Involvement, and Civic Engagement
- University Health Services
- Wellness Initiatives

Graduate students will find the enrollment information for **Domestic Partner Registration** and **Maternity Accommodations** in the Office of the Dean of Student Affairs and on the website. The Office of the Dean of Student Affairs also manages the **Emergency Student Loan** (ESLs) process. The Emergency Student Loan service is made available through the generous gifts of alumni and friends of the university. The Emergency Student Loan is an interest-free, emergency-based loan repayable within 30 days. Loans are available to enrolled students for academic supplies, medication, food or other expenses not able to be met due to unforeseeable circumstances. The Office of Integrity and Community Standards also provides consultation, support, resources and follow-up on questions and issues of Academic Integrity: www.cmu.edu/academic-integrity.

Assistance for Individuals with Disabilities

<http://www.cmu.edu/education-office/disability-resources/>

The Office of Disability Resources at Carnegie Mellon University has a continued mission to provide physical and programmatic campus access to all events and information within the Carnegie Mellon community. We work to ensure that qualified individuals receive reasonable accommodations as guaranteed by the Americans with Disabilities Act (ADA) and Sections 503 and 504 of the Rehabilitation Act of 1973. Students who would like to receive accommodations must submit a [Voluntary Disclosure of Disability Form \[pdf\]](#) to access@andrew.cmu.edu to begin the interactive accommodation process.

For more information, please see <http://www.cmu.edu/education-office/disability-resources/>. Students with disabilities are encouraged to self-identify with Equal Opportunity Services by contacting Catherine Getchel, 412-268-6121, getchell@cmu.edu to access the services available at the university and initiate a request for accommodations.

Eberly Center for Teaching Excellence & Educational Innovation

www.cmu.edu/teaching

Support for graduate students who are or will be teaching is provided in many departments and centrally by the Eberly Center for Teaching Excellence & Educational Innovation. The Eberly Center offers activities for current and prospective teaching assistants as well as any graduate students who wish to prepare for the teaching component of an academic career. The Center also assists departments in creating and conducting programs to meet the specific needs of students in their programs. Specific information about Eberly Center support for graduate students can be found at: www.cmu.edu/teaching/graduatestudentsupport/index.html.

Carnegie Mellon Ethics Hotline

The health, safety and well-being of the university community are top priorities at Carnegie Mellon University. CMU provides a hotline that all members of the university community should use to confidentially report suspected unethical activity relating to financial matters, academic and student life, human relations, health and campus safety or research.

Students, faculty and staff can anonymously file a report by calling 877-700-7050 or visiting www.reportit.net (user name: tartans; password: plaid). All submissions will be reported

to appropriate university personnel.

The hotline is NOT an emergency service. For emergencies, call University Police at 412-268-2323.

Graduate Student Assembly

www.cmu.edu/stugov/gsa/index.html

The Carnegie Mellon Student Government consists of an Executive Branch and a Legislative Branch. This is the core of traditional student government, as governed by the Student Body Constitution. The Executive Branch serves the entire student body, graduate and undergraduate, and consists of one president and four vice-presidents. The Legislative Branch for graduate students, The Graduate Student Assembly (GSA) passes legislation, allocates student activities funding, advocates for legislative action locally and in Washington D.C. on behalf of graduate student issues and needs, and otherwise acts on behalf of all graduate student interests. GSA also contributes a significant amount of funding for conferences and research, available to graduate students through application processes managed by the Office of the Assistant Vice Provost for Graduate Education. GSA also plans various social opportunities for graduate students and maintains a website of graduate student resources on and off-campus, <http://www.cmu.edu/stugov/gsa/resources/index.html>. Each department has representation on GSA and receives funding directly from GSA's use of the student activities fee for departmental activities for graduate students. The department rep(s) is the main avenue of graduate student representation of and information back to the graduate students in the department.

Intercultural Communication Center (ICC)

www.cmu.edu/icc/

The Intercultural Communication Center (ICC) is a support service offering both credit and non-credit classes, workshops, and individual appointments designed to equip nonnative English speakers (international students as well as international students who attended high school and/or undergraduate programs in the U.S.) with the skills needed to succeed in academic programs at Carnegie Mellon. In addition to developing academic literacy skills such as speaking, reading and writing, students can learn more about the culture and customs of the U.S. classroom. The ICC also helps international teaching assistants (ITAs) who are non-native English speakers develop fluency and cultural understanding to teach successfully at Carnegie Mellon and provides ITA testing, required testing indicating a nonnative speaking student has a language proficiency required before being allowed to work with undergraduates in classes, labs or individual meetings.

Office of International Education (OIE)

<http://www.cmu.edu/oie/>

Carnegie Mellon hosts international graduate and undergraduate students who come from more than 90 countries. Office of International Education (OIE) is the liaison to the University for all non-immigrant students and scholars. OIE provides many services including: advising on personal, immigration, academic, social and acculturation issues; presenting programs of interest such as international career workshops, tax workshops, and cross-cultural and immigration workshops; supporting international and cultural student groups such as the International Student Union and the International Spouses and Partners Organization; maintaining a resource library that includes information on cultural adjustment, international education and statistics on international students in the United States; posting pertinent information to students through email and the OIE website, and conducting orientation programs.

Veterans and Military Community

<http://www.cmu.edu/veterans/>

Military veterans are a vital part of the Carnegie Mellon University community. Graduate students can find information on applying veteran education benefits, campus services, veteran's groups at CMU, non-educational resources and international military service information through the Veterans and Military Community website. There are also links and connections to veteran resource in the Pittsburgh community. The Naval ROTC and Veteran Affairs Offices are located at 4615 Forbes Avenue, uro-vaedbenefits@andrew.cmu.edu, 412-268-8747.

Key Offices for Academic & Research Support

Computing and Information Resources

www.cmu.edu/computing

Computing Services provides a comprehensive computing environment at Carnegie Mellon. Graduate students should seek Computing Services for information and assistance with your Andrew account, network access, computing off-campus, campus licensed software, email, calendar, mobile devices, computer security, cluster services and printing. Computing Services can be reached at it-help@cmu.edu.

The Carnegie Mellon Computing Policy establishes guidelines and expectations for the use of computing, telephone and information resources on campus. The policy is supported by a number of guidelines graduate students should know. The policy and guidelines are available at: www.cmu.edu/computing/guideline/index.html.

Research at CMU

www.cmu.edu/research/index.shtml

The primary purpose of research at the university is the advancement of knowledge in all fields in which the university is active. Research is regarded as one of the university's major contributions to society and as an essential element in education, particularly at the graduate level and in faculty development. Research activities are governed by several university policies. Guidance and more general information is found by visiting the Research at Carnegie Mellon website.

Office of Research Integrity & Compliance

www.cmu.edu/research-compliance/index.html

The Office of Research Integrity & Compliance (ORIC) is designed to support research at Carnegie Mellon University. The staff work with researchers to ensure research is conducted with integrity and in accordance with federal and Pennsylvania regulation. ORIC assists researchers with human subject research, conflicts of interest, responsible conduct of research, export controls, intellectual property rights and regulations, and institutional animal care & use. ORIC also consults on, advises about and handles allegations of research misconduct.

Key Offices for Health, Wellness & Safety

Counseling & Psychological Services

www.studentaffairs.cmu.edu/counseling

Counseling & Psychological Services (CAPS) affords the opportunity for students to talk privately about issues that are significant for them in a safe, confidential setting. Students sometimes feel confused about why they are feeling upset and perhaps confused about how to deal with it. An initial consultation with a CAPS therapist will clarify options and provide a recommendation to the appropriate mental health resource at Carnegie Mellon or the larger

Pittsburgh community. CAPS services are provided at no cost. Appointments can be made in person or by telephone, 412-268-2922.

Health Services

www.cmu.edu/HealthServices/

University Health Services (UHS) is staffed by physicians, advanced practice clinicians and registered nurses who provide general medical care, allergy injections, first aid, gynecological care and contraception as well as on-site pharmaceuticals. The CMU student insurance plan covers most visit fees to see the physicians and advanced practice clinicians & nurse visits. Fees for prescription medications, laboratory tests, diagnostic procedures and referral to the emergency room or specialists are the student's responsibility and students should review the UHS website and their insurance plan for detailed information about the university health insurance requirement and fees. UHS also has a registered dietician and health promotion specialists on staff to assist students in addressing nutrition, drug and alcohol and other healthy lifestyle issues. In addition to providing direct health care, UHS administers the Student Health Insurance Program. The Student Health Insurance plan offers a high level of coverage in a wide network of health care providers and hospitals. Graduate students should contact UHS to discuss options for health insurance for spouses, domestic partners and dependents. Appointments can be made by visiting UHS's website or by telephone, 412-268-2157.

Campus Wellness

<http://www.cmu.edu/student-affairs/wellness/>

At the university, we believe our individual and collective well-being is rooted in healthy connections to each other and to campus resources. There are a wide variety of resources, opportunities and people that help students thrive inside and outside the classroom. The BeWell@CMU e-newsletter seeks to be a comprehensive resource for CMU regarding all wellness-inspired events, announcements and professional and personal development opportunities. To sign up for the e-newsletter, text BEWELLATCMU to 22828 and share your preferred email address.

University Police

<http://www.cmu.edu/police/>

412-268-2323 (emergency only), 412-268-6232 (non-emergency)

The University Police Department is located at 300 South Craig Street, Room 199 (entrance is on Filmore Street). The department's services include police patrols and call response, criminal investigations, shuttle and escort services, fixed officer and foot officer patrols, event security, and crime prevention and education programming. Visit the department's website for additional information about the staff, escort and shuttle, emergency phone locations, crime prevention, lost and found, finger print services, and annual statistic reports.

Shuttle and Escort Services

University Police coordinates the Shuttle Service and Escort Service provided for CMU students, faculty, and community. Full information about these services, stops, routes, tracking and schedules can be found online at: <http://www.cmu.edu/police/shuttleandescort/>

Carnegie Mellon University publishes an annual campus security and fire safety report describing the university's security, alcohol and drug, sexual assault, and fire safety policies and containing statistics about the number and type of crimes committed on the campus and the number and cause of fires in campus residence facilities during the preceding three years. Graduate students can obtain a copy by contacting the University Police Department at 412-268-

6232. The annual security and fire safety report is also available online at www.cmu.edu/police/annualreports.

The WORD

<http://www.cmu.edu/student-affairs/theword//>

The WORD is Carnegie Mellon University's student on-line handbook and is considered a supplement to the department (and sometimes college) handbook. The WORD contains campus resources and opportunities, academic policy information and resources, community standards information and resources. It is designed to provide all students with the tools, guidance, and insights to help you achieve your full potential as a member of the Carnegie Mellon community. Information about the following is included in The WORD (not an exhaustive list) and graduate students are encouraged to bookmark this site and refer to it often. University policies can also be found in full text at: <http://www.cmu.edu/policies/>.

Carnegie Mellon Vision, Mission

Carnegie Code

Academic Standards, Policies and Procedures

- Educational Goals

- Academic and Individual Freedom

- Statement on Academic Integrity

- Standards for Academic & Creative Life

 - Assistance for Individuals with Disabilities

 - Master's Student Statute of Limitations

 - Conduct of Classes

 - Copyright Policy

 - Cross-college & University Registration

 - Doctoral Student Status Policy

 - Evaluation & Certification of English Fluency for Instructors

 - Final Exams for Graduate Courses

 - Grading Policies

 - Intellectual Property Policy

 - Privacy Rights of Students

 - Research

 - Human Subjects in Research

 - Office of Research Integrity & Compliance

 - Office of Sponsored Programs

 - Policy for Handling Alleged Misconduct of Research

 - Policy on Restricted Research

 - Student's Rights

 - Tax Status of Graduate Student Awards

Campus Resources & Opportunities

- Alumni Relations

- Assistance for Individuals with Disabilities

- Athletics, Physical Fitness & Recreation

- Carnegie Mellon ID Cards and Services

- Cohon University Center

- Copying, Printing & Mailing

- Division of Student Affairs

- Domestic Partner Registration

- Emergency Student Loan Program

Gender Programs & Resources
Health Services
Dining Services
The HUB Student Services Center
ID Card Services
Leonard Gelfand Center
LGBTQ Resources
Multicultural and Diversity Initiatives
Opportunities for Involvement
Parking and Transportation Services
SafeWalk
Survivor Support Network
Shuttle and Escort Services
Spiritual Development
University Police
Student Activities
University Stores

Community Standards, Policies and Procedures

Alcohol and Drugs Policy
AIDS Policy
Bicycle/Wheeled Transportation Policy
Damage to Carnegie Mellon Property
Deadly Weapons
Discriminatory Harassment
Disorderly Conduct
Equal Opportunity/Affirmative Action Policy
Freedom of Expression Policy
Health Insurance Policy
Immunization Policy
Missing Student Protocol
Non-Discrimination Policy
On-Campus Emergencies
Pets
Political Activities
Recycling Policy
Riotous and Disorderly Behavior
Safety Hazards
Scheduling and Use of University Facilities
Sexual Harassment and Sexual Assault Policy
Smoking Policy
Student Accounts Receivable and Collection Policy and Procedures
Student Activities Fee
Student Enterprises
Workplace Threats and Violence Policy

Statement of Assurance

Last updated: June 16, 2017

Carnegie Mellon's Guide to an Ethical Job Search**GUIDELINES & POLICIES**

The mission of the Carnegie Mellon Career and Professional Development Center (CPDC) is to maximize the career and life potential of our students. One of the ways we accomplish this is by creating opportunities for our students to connect with employers with whom we have developed relationships. Accordingly, we expect all of our student Handshake users to adhere to the following ethical standards. All students are expected to read and familiarize themselves with these policies. Users (students and alumni) who do not follow the guidelines listed below may have privileges suspended, including:

- Limiting access to Handshake
- Forfeiture of on-campus interviewing
- Forfeiture of resume submission privileges

Students are expected to:

- 1. Attend all scheduled campus interviews** - Missing or canceling an interview, without sufficient notification, wastes a time slot that could have been filled by another student (Please see Carnegie Mellon's Interview Cancellation and No-Show Policy below)
- 2. Be on time for campus interviews** - Please arrive in the Career Center, 10-15 minutes before your interview. Being late reflects poorly on you the candidate and disrupts the appointment times of other candidates on the schedule. Beyond the third instance of being late the student will be subject to the CPDC offense policy.

Interview Cancellation and No-Show Policy: If you need to cancel an on-campus interview, you can do so in Handshake before the cancellation end date listed for that interview, as found in the job description. Students who fail to cancel their interview before the interview cancellation date found in Handshake will be subject to the offense policy.

If an emergency occurs and you must cancel after Handshake's cancellation end date, please do so by calling Gerry Marnell in the Career Center at 412-268-2064. Students who do not show up for interviews will be subject to the offense policy. In addition, the student will be required to send a letter of apology to the recruiter. The letter must be approved by the student's career consultant.

- 3. Present qualifications in a truthful manner** - This applies to information on resumes/cover letters and to responses in interviews. Information provided during the interview process can be verified and a false statement could cost the student the job, even after the company has agreed to hire the student. Any instance of providing false information subjects the student to the offense policy.
- 4. Honor all agreements made with recruiters regarding site visits** - When a student accepts a second interview opportunity with a company, he/she sets into motion a series of events: travel arrangements, scheduling, hotel reservations, and a host of other details. If the student subsequently fails to follow through with the site visit without giving the company enough advance notice, it costs the company a considerable amount of wasted time and money, as well as denies another student the opportunity to interview. Not honoring agreements with recruiters

reflects poorly on the university and impacts the organization's actions regarding future recruiting activities at Carnegie Mellon. Students should be aware that employers who incurred expenses related to the interview (i.e. airfare, hotel accommodations, etc.) may require the student to assume those costs. Any occurrence subjects the student to the offense policy.

5. Accept job/internships in an ethical manner - The CPDC has developed the following policy regarding the acceptance of job/internship offers. This policy was created in order to protect students while maintaining fairness to employers. Once a student accepts a position, that student is expected to stop using Handshake immediately, and to discontinue interviewing with other employers. Students are expected to notify other employers with whom they have scheduled or pending interviews of their decision to accept. If the CPDC becomes aware of any student continuing to interview after accepting a position he/she will be subject to the offense policy.

Reneging - The policy regarding reneging was created in order to protect students while maintaining fairness to employers. Once you accept a position, you are expected to stop using Handshake and discontinue interviewing with other employers. You are expected to notify other employers with whom you have scheduled or pending interviews of your decision. We reserve the right to remove your access to Handshake if this is not done within 48 hours of your job acceptance.

Accepting another job offer after you accepted an offer with a previous employer is defined as 'reneging' and is considered dishonest and unethical and carries serious implications. It not only reflects poorly on you but potentially damages Carnegie Mellon's reputation and its relationships with employers. Instances of reneging that are reported by an employer will subject the student to the offense policy. In addition, the student will be required to send a letter of apology to the recruiter. The letter must be approved by the student's career consultant.

Offense Policy

- **First Offense:** Removal of job search and interviewing access on Handshake for six months.
- **Second Offense:** Removal of job search and interviewing access on Handshake for one year.
- **Third Offense:** Removal of job search and interviewing access on Handshake for five years.

Note: Depending on the severity of the offense, the CPDC reserves the right to refer the student's case to the Office of the Dean of Student Affairs for further review and judicial proceedings.

Appeal Process - Any student wishing to appeal his or her revocation of Handshake privileges is entitled to utilize our formal appeal process. To request an appeal contact Judi Mancuso at the CPDC.

XII) Appendix D. EST&P Handbook Acknowledgement Form



**Energy Science
Technology & Policy**
Carnegie Mellon University
College of Engineering

The Energy Science, Technology and Policy (EST&P) program Graduate Student Handbook has been prepared to inform you about program policies, philosophies and practices. Please read this document carefully, and give special attention to the section on academic integrity.

To maintain your status as a master's degree seeking EST&P student you must complete your review of this handbook during the first week of classes and then sign a copy of this acknowledgement

By signing, you affirm that you have read a copy of the 2017 EST&P Graduate Student Handbook, that you understand the information contained therein, and that you agree to comply with the policies and procedures contained in the handbook. Note that this handbook is not intended to cover every situation that may arise during your course of study, and is not a contract between you and the EST&P program. Should there be any disagreements between this document and the written policies of the College of Engineering and Carnegie Mellon University, the College and University documents take precedence. However, the handbook should be followed as your general guide to the goals, policies, practices, and expectations of the Energy Science, Technology and Policy Master's Program.

Sign Handbook Acknowledgement form, here: <https://form.jotform.us/72186695109162>

XIII) Appendix E. Fall 2017 Checklist

Submit these items by the due date.

Should you have any issues, please contact Ashley Lomison, Admissions & Program Coordinator (alomison@andrew.cmu.edu)

Item:	Due Date:
EST&P Student Handbook Acknowledgement Form – Review/Sign/Submit	9/8/17 (Jotform)
Media Consent Form – Review/Sign/Submit	Orientation or 9/8/17 (Jotform)
Plagiarism Quiz – Complete/Submit	9/8/17 (submit to Ashley)
CMU Business Cards - Request online	9/5/17 (Jotform)
Resume for the EST&P Fall Resume Book – Complete/Submit	9/14/17 (Handshake)
Professional Photo Day (one time only)	Time & Location - TBA
CITI's Responsible Conduct of Research (EST&P-AS students or Master's project/ independent study)- Complete/Submit	Before registering for project/independent study courses OR by 12/8/17 (submit to Ashley)