Master’s Program in Energy Science, Technology and Policy
Graduate Student Handbook

Academic Year 2014-`15

Master’s Program in Energy Science, Technology and Policy
Carnegie Mellon University
5000 Forbes Avenue, Doherty Hall A-307
Pittsburgh, Pennsylvania 15213
Phone: (412) 268-2947
Fax: (412) 268-5650
Email: energy@andrew.cmu.edu
http://www.cmu.edu/engineering/estp/
Master’s Program in Energy Science, Technology & Policy (ESTP)
GRADUATE STUDENT HANDBOOK

TABLE OF CONTENTS

I) INTRODUCTION .................................................................................................................3
   A) ABOUT THE ESTP PROGRAM .............................................................................................3
   B) CONSUMER INFORMATION .................................................................................................3
   C) CARNEGIE MELLON UNIVERSITY STATEMENT OF ASSURANCE ..........................................4
   D) ACKNOWLEDGEMENTS .......................................................................................................4

II) ESTP ADMINISTRATIVE INFORMATION ...................................................................4
   A) ESTP AFFILIATED FACULTY AND STAFF CONTACT INFORMATION ....................................4
   B) UNIVERSITY OFFICES .........................................................................................................6
   C) PROFESSIONAL DEVELOPMENT RESOURCES AND OPPORTUNITIES .....................................6
   D) ESTP OFFICE SUITE AND STUDY LOUNGE INFORMATION ..................................................7
   E) UNIVERSITY POLICIES & EXPECTATIONS ...........................................................................8
   F) UNIVERSITY HEALTH REQUIREMENTS .................................................................................9

III) ESTP PROGRAM REQUIREMENTS ..............................................................................9
   A) CURRICULUM AND DEGREE REQUIREMENTS....................................................................10
   B) REGISTRATION AND DEGREE TRACKS ..............................................................................11
   C) PROGRAM, FINANCIAL, AND STUDENT STATUS ISSUES ....................................................12

IV) ACADEMIC STANDARDS AND GRADUATION REQUIREMENTS ......................13
   A) COURSE AND MINIMUM QPA ..........................................................................................14
   B) ACADEMIC PROBATION ....................................................................................................14
   C) GRADUATION REQUIREMENTS AND STATUTE OF LIMITATIONS .......................................15
   D) TIME OFF, VOLUNTARY LEAVE OF ABSENCE, OR WITHDRAWAL .....................................15

V) ACADEMIC INTEGRITY ................................................................................................16
   A) UNIVERSITY POLICY STATEMENT ....................................................................................17
   B) UNIVERSITY POLICY VIOLATIONS ....................................................................................18
   C) ESTP PROTOCOL AND PENALTIES FOR ACADEMIC INTEGRITY VIOLATIONS ....................19

VI) GRIEVANCE RESOLUTION; GRADUATE & UNIVERSITY OMBUDSMAN ......19

VII) ESTP DEGREE REQUIREMENTS CHECK-LIST .......................................................21

VIII) APPROVED ESTP DISCIPLINARY CONCENTRATION COURSES .................22

IX) APPENDIX A. UNIVERSITY RESOURCES .................................................................28
   A) KEY OFFICES FOR GRADUATE STUDENT SUPPORT ...........................................................28
   B) KEY OFFICES FOR ACADEMIC & RESEARCH SUPPORT ..................................................30
   C) KEY OFFICES FOR HEALTH, WELLNESS & SAFETY .........................................................30
   D) THE WORD .....................................................................................................................31

X) ESTP HANDBOOK ACKNOWLEDGEMENT FORM .................................................34
I) INTRODUCTION

Welcome to Carnegie Mellon University, to the College of Engineering, and to the interdisciplinary engineering program in Energy Science, Technology and Policy (ESTP). This handbook is designed to guide and inform students entering the ESTP program. It contains detailed information about ESTP program policies, procedures and degree requirements and supplements the College of Engineering graduate policies and the University policies.

A) About the ESTP Program

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. The ESTP program addresses this need with a professional engineering master’s degree that is 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.

ESTP builds upon the significant accomplishments in energy by Carnegie Mellon University (CMU). Innovations from CMU faculty, researchers, students and graduates have been making an impact on state of the art energy technology and policy for many decades. Graduates of the ESTP program receive a Master of Science degree directly from the CMU College of Engineering (Carnegie Institute of Technology). All ESTP graduates share core knowledge gained in four required courses: Energy Conversion & Supply; Energy Demand & Utilization; Energy Transport & Storage; and Energy Policy & Economics. Engineering depth is assured because each ESTP student selects a concentration in one of six CMU engineering disciplines, and this choice sets the template for more than one third of your graduate coursework. The interdisciplinary nature of the program also allows you to customize energy-related breadth and depth coursework according to your personal and professional objectives.

Graduates of the ESTP program 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 utilities and suppliers, alternative and renewable energy, power generation and distribution equipment, energy intensive manufacturing (such as primary metals, glass, and chemical manufacturing), consulting companies, government labs, non-profits, and academic institutions.

B) Consumer Information

Students in the ESTP program are self-funded, are funded by their employer, or by external scholarships, fellowships, and educational loans. In this coursework-based professional master's program you are permitted to enroll in project based classes as well as some independent study and master’s project research courses, but you are not expected 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 412-268-2056. Obtain general information about Carnegie Mellon University by calling 412-268-2000. The Statement of Assurance can also be found at: http://www.cmu.edu/policies/documents/SoA.html.

D) Acknowledgements
This handbook was prepared with the help and support of the Materials Science and Engineering Department, and portions of the text herein have been copied with permission from the MSE Graduate Student Information handbook. ESTP program policies conform to 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) ESTP Administrative Information

The ESTP administrative offices and study lounge are located on the A-Level 300 wing of Doherty Hall in the A307 suite. Maps of campus are available on the CMU website, and the "Mapyst" campus navigation app is available for Android devices and as a web app. Directions: walking from core campus (The Cut) you enter the Doherty Hall main entrance on the first floor, take the stairs down one flight to A-level, and continue walking "downhill" towards Wean Hall. The last door on your right before you leave Doherty and enter the 5th floor of Wean Hall is labeled A300. Enter the A-300 corridor here, wind your way through the Physics Museum, and ESTP is the last door on the right before the exit.

A) ESTP Affiliated Faculty and Staff Contact Information

<table>
<thead>
<tr>
<th>Last, First Name</th>
<th>Office</th>
<th>Phone</th>
<th>email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berges, Mario</td>
<td>113 Porter Hall</td>
<td>412-268-4572</td>
<td><a href="mailto:marioberges@cmu.edu">marioberges@cmu.edu</a></td>
</tr>
<tr>
<td>Khan, Neetha</td>
<td>3317 Wean Hall</td>
<td>412-268-2332</td>
<td><a href="mailto:neetha@andrew.cmu.edu">neetha@andrew.cmu.edu</a></td>
</tr>
<tr>
<td>Landis, David</td>
<td>A309 Doherty</td>
<td>412-268-7672</td>
<td><a href="mailto:DaveL@cmu.edu">DaveL@cmu.edu</a></td>
</tr>
<tr>
<td>Landis, David</td>
<td>A308 Doherty</td>
<td>412-268-2974</td>
<td><a href="mailto:alomison@andrew.cmu.edu">alomison@andrew.cmu.edu</a></td>
</tr>
<tr>
<td>Pekarcik, Jeanna</td>
<td>3325 Wean Hall</td>
<td>412-268-2700</td>
<td><a href="mailto:jossler@andrew.cmu.edu">jossler@andrew.cmu.edu</a></td>
</tr>
<tr>
<td>Picard, Yoosuf</td>
<td>144 Roberts Hall</td>
<td>412-268-3044</td>
<td><a href="mailto:ypicard@cmu.edu">ypicard@cmu.edu</a></td>
</tr>
<tr>
<td>Samaras, Costa</td>
<td>103 Porter Hall</td>
<td>412-268-1658</td>
<td><a href="mailto:csamaras@cmu.edu">csamaras@cmu.edu</a></td>
</tr>
<tr>
<td>Siewiorek, Nora</td>
<td>A308 Doherty</td>
<td>412-268-6072</td>
<td><a href="mailto:norann@andrew.cmu.edu">norann@andrew.cmu.edu</a></td>
</tr>
<tr>
<td>Whitacre, Jay</td>
<td>4323 Wean Hall</td>
<td>412-268-5548</td>
<td><a href="mailto:whitacre@andrew.cmu.edu">whitacre@andrew.cmu.edu</a></td>
</tr>
</tbody>
</table>
For the extended list of ESTP-associated faculty from the College of Engineering Departments, please see the [ESTP About Us: Faculty and Staff](#) page.

**College of Engineering Department Locations and Department Head Contacts**

<table>
<thead>
<tr>
<th>Department</th>
<th>Location</th>
<th>Phone</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Garrett, James H.</td>
<td></td>
<td>Dean of Engineering &amp; Thomas Lord Professor of Civil and Environmental Engineering</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>1107 Doherty Hall</td>
<td>412-268-2230</td>
<td><a href="http://www.cmu.edu/cheme/">http://www.cmu.edu/cheme/</a></td>
</tr>
<tr>
<td></td>
<td>Biegler, Lorenz</td>
<td>1111 Doherty Hall</td>
<td>412-268-2232</td>
</tr>
<tr>
<td></td>
<td>CHE Department Head &amp; Bayer Professor of Chemical Engineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dzombak, David</td>
<td>119D Porter Hall</td>
<td>412-268-2946</td>
</tr>
<tr>
<td></td>
<td>CEE Department Head &amp; Blenko University Professor of Civil &amp; Environmental Engineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kovacevic, Jelena</td>
<td>1106 Hamerschlag</td>
<td>412-268-3299</td>
</tr>
<tr>
<td></td>
<td>ECE Department Head &amp; Schramm Professor of Electrical &amp; Computer Engineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sicker, Doug</td>
<td>129 Baker Hall</td>
<td>412-268-2838</td>
</tr>
<tr>
<td></td>
<td>EPP Department Head</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rohrer, Gregory</td>
<td>3327 Wean Hall</td>
<td>412-268-2696</td>
</tr>
<tr>
<td></td>
<td>MSE Department Head &amp; W.W. Mullins Professor of Material Science &amp; Engineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>4th Floor Scaife</td>
<td>412-268-2500</td>
<td><a href="http://www.cmu.edu/me/">http://www.cmu.edu/me/</a></td>
</tr>
<tr>
<td></td>
<td>Robinson, Allen</td>
<td>401 Scaife Hall</td>
<td>412-268-3657</td>
</tr>
<tr>
<td></td>
<td>MEG Department Head &amp; Raymond J Lane Distinguished Professor of Mechanical Engineering</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![Campus Map](#)
B) University Offices

<table>
<thead>
<tr>
<th>Office</th>
<th>Phone</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Police</td>
<td>412-268-2323</td>
<td><a href="http://www.cmu.edu/police">www.cmu.edu/police</a></td>
</tr>
<tr>
<td>Student Health Services</td>
<td>412-268-2157</td>
<td><a href="http://www.cmu.edu/health-services">http://www.cmu.edu/health-services</a></td>
</tr>
<tr>
<td>Counseling &amp; Psychological Services</td>
<td>412-268-2922</td>
<td><a href="http://www.cmu.edu/counseling/">http://www.cmu.edu/counseling/</a></td>
</tr>
<tr>
<td>Housing Services</td>
<td>412-268-2139</td>
<td><a href="http://www.housing.cmu.edu/">www.housing.cmu.edu</a></td>
</tr>
<tr>
<td>Dining Services</td>
<td>412-268-2139</td>
<td><a href="http://www.cmu.edu/dining/">http://www.cmu.edu/dining/</a></td>
</tr>
<tr>
<td>Office of International Education</td>
<td>412-268-5231</td>
<td><a href="http://www.studentaffairs.cmu.edu/oie">www.studentaffairs.cmu.edu/oie</a></td>
</tr>
<tr>
<td>Intercultural Communications Center</td>
<td>412-268-4979</td>
<td><a href="http://www.cmu.edu/icc">www.cmu.edu/icc</a></td>
</tr>
<tr>
<td>Engineering &amp; Science Library</td>
<td>412-268-2427</td>
<td><a href="http://guides.library.cmu.edu/">guides.library.cmu.edu</a></td>
</tr>
<tr>
<td>Career &amp; Professional Dev. Center</td>
<td>412-268-2064</td>
<td><a href="http://www.cmu.edu/career">http://www.cmu.edu/career</a></td>
</tr>
<tr>
<td>Global Communications Center</td>
<td>412-268-9633</td>
<td><a href="http://www.cmu.edu/gcc/">http://www.cmu.edu/gcc/</a></td>
</tr>
<tr>
<td>Asst. Vice Provost for Grad. Education</td>
<td>412-268-7307</td>
<td><a href="http://www.cmu.edu/graduate/">www.cmu.edu/graduate</a></td>
</tr>
<tr>
<td>Enrollment &amp; Finances for Graduate Students</td>
<td></td>
<td><a href="http://www.cmu.edu/hub/new-grad/">www.cmu.edu/hub/new-grad/</a></td>
</tr>
<tr>
<td>Graduate Education Programs &amp; Services</td>
<td></td>
<td><a href="http://www.cmu.edu/graduate/programs-services/index.html">www.cmu.edu/graduate/programs-services/index.html</a></td>
</tr>
<tr>
<td>Graduate Student Assembly</td>
<td></td>
<td><a href="http://www.cmu.edu/stugov/gsa/">www.cmu.edu/stugov/gsa/</a></td>
</tr>
</tbody>
</table>

See Appendix A. for more information relating to University’s offices and resources.

C) Professional Development Resources and Opportunities

Carnegie Mellon University and the ESTP program offer students numerous professional development opportunities and benefits including, but not limited to: conference funding, professional development allocation, service project scholarship, career fairs, professional networking opportunities, career counseling, and Graduate Student Assembly (GSA) representation.

1. **ESTP Professional Development Allocation**: Each ESTP student is eligible to receive up to $100 in professional development expense reimbursement over the time they are enrolled in the ESTP program. Expenses MUST be preapproved and allocated by the ESTP directors, and must meet CMU guidelines for allowable non-employee expense reimbursement. Typical allowed expenses include printing of CMU business cards, energy conference student-registration fee, poster printing and the like.

2. **Service Projects**: A limited number of service project scholarships are offered to incoming ESTP students with exceptional qualifications. Service Project offers are made by the admissions committee prior to the acceptance of admission; students commit 80 hours of service during the semester and will receive a corresponding ~15% reduction in their semester tuition. Service project recipients must be full-time ESTP students, and with satisfactory performance a service project may be extended for one additional semester.

3. **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 $1000 per group. The open application periods and deadlines are listed on the [graduate education website](http://www.cmu.edu/graduate/programs-services/index.html).

4. **ESTP Conference Supplemental Reimbursement**: There are opportunities throughout the academic year to attend energy related conferences and represent the ESTP program. If you are interested in attending a conference on behalf of the ESTP program, you must submit a conference application for review by the ESTP office. Your professional
development allocation will be used as part of any awarded conference funding, and preference is given to supplement GSA conference funding awards.

5. *The Carnegie Mellon Career and Professional Development Center* provides career preparation resources, including guidance in preparation of resumes and cover letters, interviewing skills, and career networking and career fair opportunities. Be sure to sign up for TartanTRAK for full access to CPDC resources.

6. *The CMU Graduate Education office* provides numerous programs and services of value to ESPT professional master’s students. Check their [Professional Development page](#) for up-to-date listing of events.

7. *ESTP has sponsored student-run Energy Career Symposium events in 2013 and 2014*. If there is sufficient student interest to support the event ESTP will do so again in 2014 (tentative date is February 9, 2015)

8. *OTHER OPPORTUNITIES*, as will be announced during the academic year. These may include opportunities to serve as a Course Assistant for an engineering class, special assignments to support ESTP development and marketing, etc. When available, ESTP 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. ESTP 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 ESTP student group if you are represented, and these funds can be used to support social and educational events as decided by the ESTP students.
   a. The ESTP GSA election will be held during orientation on August 21, 2014. Interested candidates will have the opportunity to give a brief speech. Present students will vote and majority rules.
   b. The ESTP GSA representative has several expectations including but not limited to attending GSA meetings, organize at least one social event a semester (i.e., rock climbing, bowling, ice skating, etc.), sit on funding award committee, act as a liaison between ESTP program staff and students, recruit helper and/or form a subcommittee for the Energy Career Symposium and other student events.

D) *ESTP Office Suite and Study Lounge Information*

The A-307 front door to the ESTP office suite is open Monday through Friday from 8am to 5pm when ESTP staff are present. After business hours your CMU student ID will work in the card swipe to give you access to the study lounge and log your entrance to the area. Do not prop open the door after-hours, and do not leave study lounge windows open when you are not in the lounge.

A limited number of lockers are available in the ESTP office for student use. ESTP will issue a request for lockers at the beginning of each semester, and will use a lottery method to assign lockers if there are more requests than available space. Students assigned a locker are encouraged to secure it with a lock. ESTP administration is not responsible for any items lost or stolen from the lockers or study lounge.

The kitchen area in the ESTP study lounge is available for student use as long as everyone works together to clean and maintain the area. CMU custodial services will only empty trash and occasionally vacuum the floors. Do not leave dirty dishes in the sink; they represent a health hazard and will eventually be thrown away. Do not leave food containers, trash, or any personal items in the study lounge. The ESTP 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. Continued access and use of the study lounge is predicated on responsible behavior by each and every ESTP student. If the room is not kept in good condition and becomes a health and safety hazard, then ESTP will be forced to disable the card-swipe lock and only permit access to the study lounge during business hours when ESTP staff are present.

Mailboxes are not available for ESTP student assignment. To receive campus mail, please use the following address:
Your Name, c/o ESTP Program
Carnegie Mellon University
5000 Forbes Ave, Wean Hall 3325
Pittsburgh, PA 15213-3890

Printing: As a CMU graduate student you have an assigned Andrew printing quota of $40 per semester. Please see [http://www.cmu.edu/computing/clusters/printing/quota.html](http://www.cmu.edu/computing/clusters/printing/quota.html) for computer cluster and printing information. A laser printer is currently available in the ESTP study lounge for limited black and white printing. This printer is a HP LaserJet Pro 400 model M401dne, and you can download printer drivers by selecting your operating system at [http://h20565.www2.hp.com/portal/site/hpsc/public/psi/swdHome/?lang=en&cc=us&sp4ts.oid=5307051](http://h20565.www2.hp.com/portal/site/hpsc/public/psi/swdHome/?lang=en&cc=us&sp4ts.oid=5307051). It is recommended to connect to this printer using TCP/IP; the printer is on the CMU network with fixed IP Address: 128.2.55.49.

Computing: Each student is assigned to a single-sign-on account (Andrew account) which is required to access campus-wide and ESTP computing resources. Andrew accounts can be managed by visiting the My CMU portal, which is available by authenticating at [https://my.cmu.edu](https://my.cmu.edu). Note also that you can manage your email account, download licensed software, reset passwords, review your quotas, and other useful IT activities under the COMPUTING tab on your my.cmu page. 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 advisor@andrew.cmu.edu.

E) 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 ESTP graduate student handbook, the following resources are available to assist you in understanding community expectations:

- Academic Integrity Website: [www.cmu.edu/academic-integrity](http://www.cmu.edu/academic-integrity)
- University Policies Website: [www.cmu.edu/policies/](http://www.cmu.edu/policies/)
- College of Engineering Graduate Student Policy website: [http://engineering.cmu.edu/current_students/graduates/policies.html](http://engineering.cmu.edu/current_students/graduates/policies.html)
- Graduate Education Website: [http://www.cmu.edu/graduate/policies/index.html](http://www.cmu.edu/graduate/policies/index.html)
- Computing Services Website: [http://www.cmu.edu/computing/guideline/](http://www.cmu.edu/computing/guideline/)
- Carnegie Mellon’s policy on alcohol and drugs. All students should be aware of university policies: [http://www.cmu.edu/policies/documents/DrugAlcohol.html](http://www.cmu.edu/policies/documents/DrugAlcohol.html)

Assistance for Individuals with Disabilities: Students with disabilities are encouraged to self-identify with Equal Opportunity Services by contacting Larry Powell, 412-268-2013, lpowell@andrew.cmu.edu to access the services available at the university and to initiate a request for accommodations.
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.

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 2014-2015 student health insurance criteria at www.cmu.edu/health-services/student-insurance/forms.

- All full-time students must meet the university’s immunization requirements
  www.cmu.edu/health-services/immunization/index.html. You must complete an online immunization form and/or waiver 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 http://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. Due: June 30, 2014
- Confirm enrollment in the required health insurance plan, or certify compliance with mandatory health insurance coverage at Student Health Services. Due: September 5, 2014.

III) ESTP Program Requirements

The Master’s program in Energy Science, Technology and Policy is designed for students seeking a distinctive master’s degree that is based in engineering and informed by a broader perspective in economics and public policy. It is a College of Engineering interdisciplinary program and students are admitted directly into the ESTP program and NOT to one of the participating engineering departments. Students must, however, select one of six disciplinary concentration options that are associated with the six College of Engineering departments who cooperate with ESTP (MSE, ECE, CEE, CHE, EPP and MEG). This disciplinary concentration choice sets the requirements for 36 units of ESTP coursework as will be described in the following section.

The ESTP curriculum is comprised of 96 units of coursework and is designed to be completed in a minimum of two semesters (Track-A). A third semester of study is an option (Track-B) for students electing to do master’s project or independent study work, or who need to remove a material deficiency by taking prerequisite coursework. The program is interdisciplinary and draws faculty participation from multiple College of Engineering departments. It covers a wide range of issues from the harvesting and conversion of energy to its distribution, demand and usage. The subjects will be covered from different aspects including:

- Fundamental scientific principles governing and limiting energy conversion and transport
- Technological, regulatory and other barriers that exist today and engineering challenges for enabling future power systems and infrastructure
- Sustainability and environmental issues
- National and global socio-economical questions that govern energy policy and legislature
A) Curriculum and Degree Requirements
ESTP course work is distributed within the three categories indicated in the figure below (core, concentration, and breadth), as will be described in detail in the following text. All students must take the required four ESTP core energy courses.

ESTP Core Energy Mini-courses (24 units)
1. 39-610 Energy Conversion and Supply (6 units)
2. 39-611 Energy Demand and Utilization (6 units)
3. 39-613 Energy Transport and Storage (6 units)
4. 39-612 Energy Policy and Economics (6 units)

Disciplinary Concentration Course Options (36 units)
ESTP students must choose among one of six disciplinary concentrations, and the participating departments have defined the classes permitted to fulfill this requirement. Concentrations may include both required and elective course, and vary in structure from department to department.

For complete details please refer to Appendix A of this Handbook and/or follow page on the ESTP Website: (http://www.cmu.edu/engineering/estp/Degree%20Program/concentrations.html)
- 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

**Breadth Elective Course Options (36 units)**

Upon consultation and **advance approval** by the ESTP academic advisor, 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 course 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 this requirement, when the course is needed as preparation for a graduate class. If you choose to take courses outside of the College of Engineering, **advance written approval is required** for 18 units or more. Classes at the 300 level and below cannot be counted towards the ESTP degree. A maximum of 12 units of directed research / independent study / master’s project coursework can be applied toward the breadth requirement. A letter grade must be assigned for the course and **advance written approval is required**. The master’s project approval form must be submitted to the ESTP Academic Advisor by the first day of classes, and written (email) response will be provided within 4 business days. This form requires a 1-page plan of study describing the topic / expected outcomes, the method of evaluation, and must be signed by both the student and the supervising College of Engineering faculty member.

**B) Registration and Degree Tracks**

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 you might be 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](http://www.cmu.edu/hub/calendar.html)). Before you begin online registration, please carefully review the ESTO degree and course requirements summarized here and in Appendix A. The ESTP Executive Director serves as an academic advisor for the program, and is available to help you create a program that meets both stated degree requirements and your personal / professional objectives. You should pay careful attention to required courses in your disciplinary concentration, and be aware that most graduate courses are taught only once per academic year.

To date most full-time students complete the ESTP degree program in one academic year (two semesters) taking 48 units of coursework per semester. This is the standard ESTP Track-A degree program. Students typically begin with Fall Semester and graduate in the Spring, but the program can also be taken entering in Spring semester and graduating in the Fall. An ESTP Track-B program option is available with advance approval at the time of admission that will extend the ESTP program to three semesters (Fall->Spring->Fall OR Spring->Fall->Spring). Students in Track-B complete the 96 units that meet all ESTP degree requirements, plus independent study and/or supplementary coursework where some of their additional units may not count towards the degree. Track-B is appropriate when 1.) Additional coursework or self-study is needed to remove a material deficiency when a student's undergraduate degree is different from their ESTP disciplinary concentration; or 2.) Additional experience-based
professional study is desired by students doing practice-based activities such as master’s project coursework, independent / directed study, or internship. In addition, a Track-B student staying for three semesters must take at least 12 credits in their third semester.

The selection of Track-A or Track-B must be made at the time of application / admission to ESTP. Students admitted to Track-B may choose to complete all degree requirements in two semesters effectively converting to Track-A. Once you have successfully completed all of the 96-unit degree requirements you will be awarded the ESTP degree. Students who choose Track-A at the time of admission are advised that F1 Visa / I-20 rules prevent you from switching to Track-B once your data has been entered into the SIO/SEVIS systems in preparation for issuing your I-20. This date varies from semester to semester, but will coincide with the week prior to advance registration for the next Academic Year semester (Fall or Spring). A note for international students who are considering a Curricular Practical Training (CPT) internship: Track-B students admitted in the Fall semester are eligible for CPT in the summer following their Spring semester. However, an ESTP student who is admitted for the Spring semester is not eligible for summer CPT because F1 Visa / I-20 rules require two semesters of full-time study be completed prior to CPT eligibility.

C) Program, Financial, and Student Status Issues

Graduate Transfer Credits
Up to 24 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 the graduate program leading to the degree sought. Such transfer credit is not granted prior to admission to the graduate program and must be approved by the department 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 ESTP degree requirements. Approval of transfer credits to CMU is no guarantee that courses can count towards the ESTP 96 unit requirement, and transfer credits will not substitute for ESTP’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: http://www.cmu.edu/hub/registration/undergraduates/cross/

Financial Support
ESTP tuition is charged at the standard College of Engineering (Carnegie Institute of Technology) graduate 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. A typical ESTP (Track A) student will complete the program in two semesters of full-time study so will pay for one academic year of tuition. The full cost of attendance is estimated for the College of Engineering by including activity & technology fees, transportation, off-campus housing, health insurance, etc. on the Hub website Itemized College of Engineering Cost of Attendance page. Track B students will be charged tuition for their third semester, but this will be reduced to a part-time per-unit charge is taking less than 36 units. If electing part-time study during the final semester you are required to take a minimum of 12 units. Full-time tuition is charged when you register for 36 or more units.
As with other coursework based professional master's programs at Carnegie Mellon's College of Engineering, ESTP students are primarily self-funded through personal savings and educational loans, or externally funded through government or private fellowships or by their employer. 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.

**Service Projects**
A limited number of service project scholarships are offered to incoming ESTP students with exceptional qualifications. Service Project offers are made by the admissions committee prior to the acceptance of admission. Students commit 80 hours of service during the semester, and will receive a corresponding ~15% reduction in their semester tuition. Service project recipients must be full-time ESTP students, and with satisfactory performance a service project may be extended for one additional semester.

**Financial Aid**
Graduate students should consult the graduate student financial aid information found on The HUB website: [http://www.cmu.edu/finaid/graduate/index.html](http://www.cmu.edu/finaid/graduate/index.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 Appendix A), [www.cmu.edu/student-affairs/index.html](http://www.cmu.edu/student-affairs/index.html), to inquire about an Emergency Student Loan.

**Full- and Part-Time Student Status**
A full time ESTP student course load is 36 or more units; and a Track-A student must take 48 units per semester in order to complete in two semesters. An ESTP student’s schedule is considered over-loaded when it exceeds 50 units per semester. A student must have a minimum QPA of 3.6 or above in the first semester and advance permission is required from the ESTP Program Advisor for any schedule exceeding 54 units per semester. International students are advised that dropping below 48 units (Track-A) or 36 units (Track-B) will affect their student visa status and must work with the Office of International Education (OIE).

**Deferred Admission Policy**
ESTP allows students to defer admission for one semester only (Fall admits defer to Spring semester, Spring Admits defer to the next Fall semester) using the form provided by the ESTP program. Written (email) approval of the request for deferred admission will be provided within 14 days. If you cannot attend until the following year you must reapply for admission in ApplyYourself. In such cases ESTP will waive the application fee, and will keep on file for re-use any official tests scores, transcripts, etc. sent in support of your application.

**Master’s Thesis**
The Masters in Energy Science, Technology and Policy is a professional master’s program for which there is no Master’s Thesis required.

**IV) Academic Standards and Graduation Requirements**
**A) Course and Minimum QPA**

All courses that are counted towards the 96-unit ESTP course requirement for graduation must be taken for credit with a letter grade assigned. Any courses taken as audit or with pass/fail grading cannot be counted towards the 96-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 ESTP students. The grade will be that assigned by the course professor/instructor. 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 follows:

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

All ESTP students must maintain a minimum overall QPA of 3.0 or above 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 the ESTP Program Advisor that they are on academic probation and must increase their QPA during the next academic year semester. No course with a grade lower than C will be counted toward the Master's Degree requirements. When calculating the QPA to meet graduation requirements, the average grade of the 96 units that meet the ESTP degree requirements shall be at least B. If a student has taken more than 96 total units, 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 all ESTP degree requirements.

Students must also maintain a minimum QPA of 3.0 or above in all required courses. Required courses are the four ESTP Core Classes (39-610, 39-611, 39-612, 39-613), plus an additional course if required by the student’s selected disciplinary concentration. Further, 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, after grades have been posted, the academic performance of each student is reviewed. Courses that negatively affect the core QPA cannot be moved from the core 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. Initially, the student will receive written and electronic notification of their placement on academic probation, including the terms and timeframe to remove probation. The student will be subject to the following penalties:

- Cannot be awarded a service project for the upcoming semester
- Cannot be selected to receive awards, travel/conference funding, etc.
- May not formally represent the ESTP as an officer or other positions in a student club or campus organization
A student on academic probation will automatically be removed from probation at the end of the subsequent enrolled semester if their cumulative and core QPA calculations improve to the required 3.0 standard.

If an ESTP 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 ESTP 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 ESTP Executive Director and Assistant Executive 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 ESTP 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 ESTP 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) Time Off, Voluntary Leave of Absence, or Withdrawal
Students in the ESTP program are expected to attend classes and participate in all program activities during their Track A or Track B status. This excludes any defined academic break periods, and the official University holidays as listed below. For the most up-to-date University calendar please refer to the HUB at http://www.cmu.edu/hub/calendar.html.

University Holidays
- New Year's Day
- Memorial Day
- Independence Day
- Labor Day
- Thanksgiving Day
- Day After Thanksgiving
- Day Before Christmas
- Christmas Day
- Day Before New Year's Day

Leave of absence: A student may need to take a temporary leave of absence for many reasons. Students are required to file 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 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 on no academic action when taking a Leave of Absence, will be reinstated with the same standing as prior to the leave. Students in poor standing, or on academic probation at the time they request a Leave of Absence, must submit a written request asking for re-instatement to the program. This request will be evaluated by the ESTP admissions committee, who will respond in writing to the request within two weeks. All requests for reinstatement must be submitted within the time limit imposed by the 6-year statute of limitations described above.

**Withdrawal:** A student may want to leave the university with no intentions of returning. A student 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.

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 just as it is the responsibility of each of us.

The [CMU Office of Research Integrity and Compliance website](#) describes the university’s position on ethical research: “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, **ESTP recommends that all incoming students** take the CMU / CIT recommended training offered by the Collaborative Institutional Training Initiative (CITI). **All ESTP students with service projects, or taking Independent Study or Master’s Project coursework** are required to complete the training by the end of the first week of classes, and to submit the certificate of successful completion. 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 [https://www.citiprogram.org/](https://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 at the following link: [http://www.cit.cmu.edu/current_students/graduates/policies.html#rcr](http://www.cit.cmu.edu/current_students/graduates/policies.html#rcr).

**REQUIRED Plagiarism Quiz:** The University of Indiana has an exceptional website that provides examples and a quiz to see if you understand the difference between proper and improper attribution of text. ESTP students are required to complete this quiz before the end of the first week of classes, and print and submit the certification given when the quiz is passed. Certifications will be collected by the ESTP Administrative 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. 
https://www.indiana.edu/~istd/plagiarism_test.html

Academic Integrity problems 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 http://www.cmu.edu/policies/documents/Academic%20Integrity.htm

While you should view the threat of disciplinary action as a serious one, it is equally important that you take up the ideals of Academic Integrity as foundational to your educational experience at CMU. We encourage you to embrace this as part of the intellectual thread that binds you with the entire University community. Accordingly, the CMU Statement on Academic Integrity is quoted here in its entirety.

**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.
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) ESTP Protocol and Penalties for Academic Integrity 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 following penalties:
- Will have any service projects or awards provided by ESTP 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 the ESTP as an officer or other positions in a student club or campus organization

In accordance with the university’s policy, a student who violates the academic integrity 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 ESTP Executive Director and Assistant Executive Director, a student may be permanently dropped from the ESTP program. Upon a second academic integrity violation, the student will immediately be dropped from the ESTP 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: http://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 initially with members of their academic program, including the Executive Director, Assistant Executive 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: http://www.cmu.edu/graduate/policies/appeal-grievance-procedures.html

Within the ESTP program, students are encouraged to work the Executive Director and Assistant Executive Director when problems arise. However, situations may arise where students need advice on some aspect of their activities or interactions with others in the ESTP 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 Carnegie Mellon. For this reason, the administrative home department of the ESTP program relies on a Graduate Ombudsperson. The Materials Science and Engineering Ombudsperson is Neetha Khan and you may contact her at 412-268-2332 or 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 ESTP program office, Executive Director or Assistant Executive Director, Engineering Department Heads, or other faculty 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 8-7307 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) ESTP Degree Requirements Check-List
Master’s Program in Energy Science, Technology and Policy
Academic Year 2014-’15

NAME: ________________________  Student ID #: ________________________

**CORE COURSES:** 24 units required for all ESTP students

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course #</th>
<th>Units</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>FALL</td>
<td>39-610</td>
<td>6</td>
<td>Energy Conversion &amp; Supply</td>
</tr>
<tr>
<td>FALL</td>
<td>39-611</td>
<td>6</td>
<td>Energy Demand &amp; Utilization</td>
</tr>
<tr>
<td>SPRING</td>
<td>39-613</td>
<td>6</td>
<td>Energy Transport &amp; Storage</td>
</tr>
<tr>
<td>SPRING</td>
<td>39-612</td>
<td>6</td>
<td>Energy Policy &amp; Economics</td>
</tr>
</tbody>
</table>

**DISCIPLINARY CONCENTRATION:** 36 units required in accordance with departmental list

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course #</th>
<th>Units</th>
<th>Title</th>
</tr>
</thead>
</table>

___ TOTAL ≥ 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

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course #</th>
<th>Units</th>
<th>Title</th>
</tr>
</thead>
</table>

___ TOTAL ≥ 36 units
VIII) Approved ESTP Disciplinary Concentration Courses

Disciplinary concentration in Chemical Engineering

**REQUIRED:** 06-665 Process Systems Modeling (MS level SP: 12 units)
Alternate required course for AY2014:
06-705 Adv. Chemical Engineering Thermodynamics (PhD level FA: 12 units)

PLUS 24 units selected from the following list of classes:

<table>
<thead>
<tr>
<th>M.S. level courses recommended as CHE disciplinary concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>06-623 Mathematical Modeling of Chemical Engineering Processes FA: 12 units</td>
</tr>
<tr>
<td>06-625 Chemical and Reactive Systems FA: 12 units</td>
</tr>
<tr>
<td>06-663 Analysis and Modeling of Transport Phenomena SP: 12 units</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PhD courses permitted as CHE disciplinary concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>06-702 Advanced Reaction Kinetics SP: 12 units</td>
</tr>
<tr>
<td>06-703 Advanced Fluid Dynamics FA: 12 units</td>
</tr>
<tr>
<td>06-704 Heat and Mass Transfer SP: 12 units</td>
</tr>
<tr>
<td>06-713 Mathematical Techniques in Chemical Engineering FA: 12 units</td>
</tr>
<tr>
<td>06-720 Advanced Process Systems Engineering SP: 12 units</td>
</tr>
</tbody>
</table>
Disciplinary concentration in Civil and Environmental Engineering

The CEE disciplinary concentration is defined as 36 units of approved CEE graduate-level courses (other than independent study or graduate project courses). Courses are selected in consultation with the ESTP advisor considering the student's interests. Courses are available in sustainability, water quality, air quality, advanced infrastructure, mechanics and other areas.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Delivery</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-704</td>
<td>Probability and Estimation Methods for Engineering Systems</td>
<td>FA</td>
<td>12</td>
</tr>
<tr>
<td>12-706</td>
<td>Civil Systems Investment Planning and Pricing</td>
<td>FA</td>
<td>12</td>
</tr>
<tr>
<td>12-711</td>
<td>Advanced Project Management for Construction</td>
<td>SP</td>
<td>12</td>
</tr>
<tr>
<td>12-712</td>
<td>Introduction to Sustainable Engineering</td>
<td>FA</td>
<td>12</td>
</tr>
<tr>
<td>12-714</td>
<td>Environmental Life Cycle Assessment</td>
<td>SP</td>
<td>12</td>
</tr>
<tr>
<td>12-740</td>
<td>Data Acquisition, Sensing, and Instrumentation</td>
<td>FA</td>
<td>6</td>
</tr>
<tr>
<td>12-741</td>
<td>Data Management and Analysis</td>
<td>FA</td>
<td>6</td>
</tr>
<tr>
<td>12-742</td>
<td>Computational Decision Support</td>
<td>FA</td>
<td>6</td>
</tr>
<tr>
<td>12-743</td>
<td>Decision Contexts for Civil Infrastructure Domain</td>
<td>SP</td>
<td>6</td>
</tr>
<tr>
<td>12-744</td>
<td>AIS Systems Project Preparation Course</td>
<td>FA</td>
<td>3</td>
</tr>
<tr>
<td>12-745</td>
<td>AID Systems Project Course</td>
<td>SP</td>
<td>18</td>
</tr>
<tr>
<td>12-749</td>
<td>Special Topics: Climate Change Adaptation</td>
<td>FA</td>
<td>6</td>
</tr>
<tr>
<td>12-750</td>
<td>Infrastructure Systems</td>
<td>SP</td>
<td>12</td>
</tr>
<tr>
<td>12-751 / 651</td>
<td>Air Quality Engineering</td>
<td>SP</td>
<td>12 / 9</td>
</tr>
<tr>
<td>12-752</td>
<td>Special Topics: Data-Driven Building Energy Management</td>
<td>FA</td>
<td>6</td>
</tr>
</tbody>
</table>
**Disciplinary concentration in Electrical and Computer Engineering**

36 Units from the following selection of classes:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Type</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-418</td>
<td>Electric Energy Processing: Fundamentals and Applications</td>
<td>SP</td>
<td>12 units</td>
</tr>
<tr>
<td>18-587</td>
<td>Electrical Energy Conversion, Control and Management</td>
<td>FA</td>
<td>12 units</td>
</tr>
<tr>
<td>18-618</td>
<td>Smart Grids and Future Electric Energy Systems</td>
<td></td>
<td>12 units</td>
</tr>
<tr>
<td>18-630</td>
<td>Introduction to Security and Policy</td>
<td></td>
<td>12 units</td>
</tr>
<tr>
<td>18-649</td>
<td>Distributed Embedded Systems</td>
<td></td>
<td>12 units</td>
</tr>
<tr>
<td>18-730</td>
<td>Introduction to Computer Security</td>
<td></td>
<td>12 units</td>
</tr>
<tr>
<td>18-771</td>
<td>Linear Systems</td>
<td></td>
<td>12 units</td>
</tr>
<tr>
<td>18-777</td>
<td>Complex Large-Scale Dynamic Systems</td>
<td></td>
<td>12 units</td>
</tr>
<tr>
<td>18-819B</td>
<td>S.T. Introduction to Solar Arrays - Modeling Analysis, and Design</td>
<td>SP</td>
<td>12 units</td>
</tr>
<tr>
<td>18-875</td>
<td>Economics and Engineering of Electric Energy Systems</td>
<td>SP</td>
<td>12 units</td>
</tr>
<tr>
<td>18-879M</td>
<td>Optimization in Energy Networks</td>
<td>SP</td>
<td>12 units</td>
</tr>
<tr>
<td>18-879S</td>
<td>Networked Control Systems</td>
<td></td>
<td>12 units</td>
</tr>
<tr>
<td>18-882</td>
<td>Special Topics in Energy Systems: Power Electronics</td>
<td></td>
<td>12 units</td>
</tr>
</tbody>
</table>
Disciplinary concentration in Engineering and Public Policy
The EPP disciplinary concentration is defined as 36 units of approved EPP graduate-level courses (other than independent study or graduate project courses). These will be selected in consultation with the ESTP advisor and considering the student's area of interest.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-424</td>
<td>Energy and the Environment - note: this is an undergraduate course for which graduate student enrollment is limited.</td>
<td>FA: 9 units (undergrad)</td>
<td></td>
</tr>
<tr>
<td>19-472</td>
<td>Fundamentals of Electric Power Systems</td>
<td>12 units (undergrad)</td>
<td></td>
</tr>
<tr>
<td>19-612</td>
<td>Special Topics: Introductory Life Cycle Assessment</td>
<td>SP: 12 units</td>
<td></td>
</tr>
<tr>
<td>19-626</td>
<td>Climate Science and Policy</td>
<td>SP: 12 units</td>
<td></td>
</tr>
<tr>
<td>19-638 (cl. 18-618)</td>
<td>Smart Grids and Future Electric Energy Systems</td>
<td>FA: 12 units</td>
<td></td>
</tr>
<tr>
<td>19-653 (cl. 24-640)</td>
<td>Special Topics Climate Change Mitigation</td>
<td>SP: 12 units</td>
<td></td>
</tr>
<tr>
<td>19-655B</td>
<td>Special Topics: Emerging Shale Gas Policies</td>
<td>FA: 12 units</td>
<td></td>
</tr>
<tr>
<td>19-655C</td>
<td>Special Topics: Design, Innovation and Strategy</td>
<td>FA 12 units</td>
<td></td>
</tr>
<tr>
<td>19-655D</td>
<td>Sustainable Energy for the Developing World</td>
<td>SP: var</td>
<td></td>
</tr>
<tr>
<td>19-656</td>
<td>Special Topics: CO2 Capture and Sequestration</td>
<td>SP: 6 units</td>
<td></td>
</tr>
<tr>
<td>19-683</td>
<td>Special Topics: Innovation Policy Procedures</td>
<td>FA: 12 units</td>
<td></td>
</tr>
<tr>
<td>19-688</td>
<td>Innovation for Energy and the Environment</td>
<td>FA: 12 units</td>
<td></td>
</tr>
<tr>
<td>19-696</td>
<td>Special Topics: Sustainability and Innovation</td>
<td>FA: 9 units</td>
<td></td>
</tr>
<tr>
<td>19-714 (cl. 12-714)</td>
<td>Environmental Life Cycle Assessment</td>
<td>SP: 12 units</td>
<td></td>
</tr>
<tr>
<td>19-717 (cl. 12-712)</td>
<td>Introduction to Sustainable Engineering</td>
<td>FA: 12 units</td>
<td></td>
</tr>
<tr>
<td>19-724 (cl .27-724)</td>
<td>Materials for Energy Storage</td>
<td>6 units</td>
<td></td>
</tr>
<tr>
<td>19-736 (cl .27-726)</td>
<td>Energy and Materials in Policy Making</td>
<td>6 units</td>
<td></td>
</tr>
<tr>
<td>19-739 (cl. 18-875)</td>
<td>Engineering and Economics of Electric Energy Systems</td>
<td>SP: 12 units</td>
<td></td>
</tr>
<tr>
<td>19-740 (cl. 24-740)</td>
<td>Combustion and Air Pollution Ctrl</td>
<td>SP: 12 units</td>
<td></td>
</tr>
<tr>
<td>19-751 (cl. 12-751)</td>
<td>Air Quality Engineering</td>
<td>FA: 12 units</td>
<td></td>
</tr>
<tr>
<td>19-881 / 19-882</td>
<td>Special Topics: Seminar in Electric Power I/II</td>
<td>6 units</td>
<td></td>
</tr>
<tr>
<td>19-883</td>
<td>Special Topics: Seminar in Climate &amp; Energy Decision Making Under Uncertainty</td>
<td>SP: 3 units</td>
<td></td>
</tr>
</tbody>
</table>
Disciplinary concentration in Materials Science and Engineering

**REQUIRED:**
- 27-798 Thermodynamics I (FA: 6 units)
- 27-799 Thermodynamics II (FA: 6 units)

24 units selected from the following list of classes

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Term</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>27-705</td>
<td>Nanostructured Materials</td>
<td>SP</td>
<td>12</td>
</tr>
<tr>
<td>27-718</td>
<td>Soft Materials</td>
<td>FA</td>
<td>12</td>
</tr>
<tr>
<td>27-721</td>
<td>Processing Design</td>
<td>FA</td>
<td>12</td>
</tr>
<tr>
<td>27-724</td>
<td>Materials for Energy Storage</td>
<td>SP-A4</td>
<td>6</td>
</tr>
<tr>
<td>27-725</td>
<td>Materials in Nuclear Systems</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>27-727</td>
<td>Mechanical Behavior in Extreme Environments</td>
<td>SP</td>
<td>6</td>
</tr>
<tr>
<td>27-728</td>
<td>Materials for Future Energy Systems</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>27-729</td>
<td>Solid State Devices for Energy Conversion</td>
<td>FA</td>
<td>6</td>
</tr>
<tr>
<td>27-730</td>
<td>Energy Consumption and Minimization in Metals Production</td>
<td>FA</td>
<td>6</td>
</tr>
<tr>
<td>27-750</td>
<td>Advanced Characterization and Microstructural Analysis</td>
<td>SP</td>
<td>12</td>
</tr>
<tr>
<td>27-752</td>
<td>Foundations of Semiconductor Nanostructures</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>27-765</td>
<td>Special Topics: Materials and Society</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>27-766</td>
<td>Diffusion in Materials</td>
<td>FA</td>
<td>6</td>
</tr>
<tr>
<td>27-770</td>
<td>Electronic, Magnetic, and Optical Properties</td>
<td>SP</td>
<td>12</td>
</tr>
<tr>
<td>27-788</td>
<td>Defects in Materials</td>
<td>FA</td>
<td>6</td>
</tr>
<tr>
<td>27-794</td>
<td>Chemical Stability of Materials in Extreme Environments</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>27-796</td>
<td>Structure of Materials</td>
<td>FA</td>
<td>6</td>
</tr>
<tr>
<td>27-797</td>
<td>Bonding of Materials</td>
<td>FA</td>
<td>6</td>
</tr>
</tbody>
</table>
**Disciplinary concentration in Mechanical Engineering**

**REQUIRED:** 24-722 Energy System Modeling (FA: 12 units)

24 units selected from the following list of classes

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Term</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>24-616</td>
<td>Tribology - Friction, Lubrication &amp; Wear</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>24-628</td>
<td>Special Topics: Energy Trans &amp; Conv. at Nano Scale</td>
<td>SP</td>
<td>12</td>
</tr>
<tr>
<td>24-629</td>
<td>Special Topics: Direct Solar &amp; Thermal Energy Conversion</td>
<td>FA</td>
<td>12</td>
</tr>
<tr>
<td>24-640</td>
<td>Special Topics: Climate Change Mitigation</td>
<td>SP</td>
<td>12</td>
</tr>
<tr>
<td>24-644</td>
<td>Special Topics: Advanced Power Plant Design</td>
<td>SP</td>
<td>12</td>
</tr>
<tr>
<td>24-711</td>
<td>Fluid Mechanics</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>24-718</td>
<td>Computational Fluid Dynamics</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>24-721</td>
<td>Advanced Thermodynamics</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>24-730</td>
<td>Advanced Heat Transfer</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>24-731</td>
<td>Conductive Heat Transfer</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>24-732</td>
<td>Convective Heat Transfer</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>24-733</td>
<td>Radiative Heat Transfer</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>24-736</td>
<td>Two-Phase Flow &amp; Heat Transfer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24-642</td>
<td>Fuel Cell Systems</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>24-740</td>
<td>Combustion and Air Pollution Ctrl</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>
IX) Appendix A. University Resources

A) **Key Offices for Graduate Student Support**

**Office of the Assistant Vice Provost for Graduate Education**

[www.cmu.edu/graduate; grad-ed@cmu.edu](http://www.cmu.edu/graduate; grad-ed@cmu.edu)

The Office of the Assistant Vice Provost for Graduate Education, AVPGE, directed by Suzie Laurich-McIntyre, 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/](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 Student of Color Series (SOC)

**Office of the Dean of Student Affairs**

[www.cmu.edu/student-affairs/index.html](http://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 Dean of Student Affairs Gina Casalegno, include:

- Career and Professional Development Center
- Counseling & Psychological Services (CAPS)
- Housing & Dining Services
- Orientation & First Year Programs (*note: for undergraduate students*)
- Office of International Education (OIE)
- Student Activities
- Student Life.

Holly Hippensteel, Assistant Dean of Student Affairs, serves as the point person in the division for graduate student resources and concerns. Graduate students will find the enrollment information for
Domestic Partner Registration 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 the Dean of Student Affairs 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
Students with disabilities are encouraged to self-identify with Equal Opportunity Services by contacting Larry Powell, 412-268-2013, lpowell@andrew.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.

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, and otherwise acts on behalf of all graduate student interests. GSA also plans various social opportunities for graduate students and maintains a website of graduate student resources on and off-campus, www.cmu.edu/stugov/gsa/resources/index.html. Each department has representation on GSA and 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 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.
Office of International Education (OIE)
www.studentaffairs.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.

B) 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.

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.

C) 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/](http://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. There is a small visit fee to see the physicians and advanced practice clinicians; nurse visits are free of charge. Fees for prescription medications, laboratory tests, diagnostic procedures and referral to the emergency room or specialists are the student’s responsibility. 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. It also covers most of the fees for care at Student Health Services. 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.

**University Police**

[http://www.cmu.edu/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 (additional information included in the Parking and Transportation section of The WORD, see below), 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.

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](http://www.cmu.edu/police/annualreports).

**D) The WORD**


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 their 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:

- 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
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

University policies can also be found in full text at: http://www.cmu.edu/policies/

Last updated: June 24, 2014
X) ESTP Handbook Acknowledgement Form

The Energy Science, Technology and Policy (ESTP) 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 ESTP student you must complete your review of this handbook during the first week of classes and then sign a copy of this acknowledgement statement in the blank below. **Please return the signed original to Ashley Lomison, Administrative Coordinator of the ESTP program, in room A-308 Doherty Hall.**

By signing, you affirm that you have read a copy of the 2014 ESTP 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 ESTP 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.

____________________________________  _________________
(Student Signature)      (Date)

____________________________________  
(Printed Name)

**Sign & return to ESTP Office (A-308 Doherty Hall) before Friday, September 12, 2014**

Master’s Program in Energy Science, Technology and Policy
Carnegie Mellon University
5000 Forbes Avenue, Doherty Hall A-307
Pittsburgh, Pennsylvania 15213
(412) 268-2947
Fax: (412) 268-5650
energy@andrew.cmu.edu
http://www.cmu.edu/engineering/estp/