

ENGINEERING, LAW, AND POLICY

Graduate Program Head	Timothy Simpson
Program Code	MELP
Campus(es)	University Park (M.Eng.)
Degrees Conferred	Master of Engineering (M.Eng.)
The Graduate Faculty	View (https://secure.gradsch.psu.edu/gpms/?searchType=fac&prog=MELP)

The MELP program will prepare students from diverse backgrounds in engineering to address societal change, the rapid progress of technology and globalization, and become innovative leaders of change. MELP students will be versed in science and technology policy, legal and regulatory policy, complex systems design, and anticipating technology trends. They will acquire strong technical and analytical skills in systems thinking and an understanding of the convergence between engineering, law and policy for the successful development and implementation of technology-based strategies and solutions.

Admission Requirements

Applicants apply for admission to the program via the Graduate School application for admission (<http://gradschool.psu.edu/prospective-students/how-to-apply/>). Requirements listed here are in addition to Graduate Council policies listed under GCAC-300 Admissions Policies (<http://gradschool.psu.edu/graduate-education-policies/>).

The student cohort should reflect today's international engineering environment, with selective admittance. The admission requirements include:

B.S. or master's degree in Engineering (including Computer Science or related technical field) with a 3.0 minimum undergraduate GPA (or equivalent). Exceptions to the minimum

- 3.0 grade-point average may be made for students with special backgrounds, abilities, and interests. Applicants will be accepted up to the number of places available for new students.
- Submission of a completed online Graduate School application for admission (<http://gradschool.psu.edu/prospective-students/how-to-apply/>), including a Statement of Purpose, resume, and three letters of recommendation.
- Submission of official transcripts from all post-secondary institutions attended (<http://www.gradschool.psu.edu/prospective-students/how-to-apply/new-applicants/requirements-for-graduate-admission/>).

Applicants for fall admission who wish to be considered for financial aid should complete the application process prior to DECEMBER 15 of the preceding year.

Core Application Packet

- Completed official online Graduate School application for admission (<http://gradschool.psu.edu/prospective-students/how-to-apply/>), and payment of nonrefundable application fee.
- Statement of purpose: a 2-3 page essay articulating interest in the program and career and educational goals. Statement of purpose should include:

- An introduction about yourself, indicating interests, goals, and how the M.Eng. in Engineering, Law and Policy degree can help further them.
- Any unique experiences, skills, professional experience, and/or perspectives you will bring to the distinctive learning environment and how these will enhance the Law, Policy, Engineering (LPE) community. Professional engineering experience is preferred. Applicants wishing to enter the program directly from an undergraduate degree may demonstrate experience through summer internships, summer employment, co-op experiences or experience within professional societies or student-led organizations that lead engineering projects or activities.
- Discuss what makes you a strong candidate for the M.Eng. in Engineering, Law and Policy. Make use of supporting examples to demonstrate.
- Make certain the above points are linked with continuity and focus, and demonstrate written communication skills.
- Vita or Résumé. Provide a current résumé or curriculum vitae, which includes your education, employment history, awards and accolades, national and international exposure, publication credits, and leadership roles in any volunteer and/or extracurricular activities.
- Three (3) letters of recommendation that attest to your readiness for graduate study and document the requisite minimum of one year of work experience. Letters must be submitted through the online application. Within the online application you will be asked to enter the names and email addresses of three individuals who will be providing your recommendation. Those individuals will receive a note via email asking them to complete a brief form that will serve as your recommendation. Please inform all recommenders they must submit the form in order for your application to be complete. Recommendations that come from former supervisors should comment on and provide examples of your performance as an intern and/or an employee, including the nature of your work and what you contributed to the company or organization. Letters from personal acquaintances or those who are not familiar with your academic or professional qualifications are not helpful to the admissions committee.
- Official transcripts from all post-secondary institutions attended. (<http://www.gradschool.psu.edu/prospective-students/how-to-apply/new-applicants/requirements-for-graduate-admission/>)
- GRE (optional): GRE scores are not required. Applicants do not need to submit GRE scores to be considered for admission, financial aid or merit-based scholarships. Applicants wishing to submit GRE scores are welcome to should they choose. However, not submitting GRE scores will not negatively impact your application in any way. If you decide to submit GRE, only scores received directly from the testing service will be accepted.

Degree Requirements

Requirements listed here are in addition to Graduate Council policies listed under GCAC-700 Professional Degree Policies (<http://gradschool.psu.edu/graduate-education-policies/>).

The Master of Engineering (M.Eng.) degree in Engineering, Law and Policy is a non-thesis professional master's degree that provides training for advanced professional practice. To receive the M.Eng. in Engineering, Law and Policy (MELP) a student must complete a minimum of 30 credits at the 400, 500, or 800 level, with a minimum of 18 credits at

the 500 or 800 level, and at least 6 credits at the 500 level. The MELP residential program aims to provide Penn State graduates, as well as other U.S. and international students, with a competitive advantage when seeking employment at the nexus of science and technology policy, policy analysis, complex systems design, and regulatory compliance. This program also offers experienced engineers, as well as government and industry employers interested in supporting the professional growth of their engineers, the knowledge and skills to be versed in technology policy, regulatory policy analysis and advising, and emerging technology trends for business growth.

Students that pursue the MELP degree will attain broad, interdisciplinary competence and technical, policy and regulatory skills in as little as two semesters of intensive study, one year of full time study, or two years of part time study.

Total required credits for the MELP program is 30 credits.

Code	Title	Credits
Required Courses		
INTAF 502	Science, Technology, and International Policy	3
EDSGN 549	Design Decision Making	3
EDSGN 558	Systems Design	3
LPE 851	Foundations in Public Law	3
LPE 852	Foundations in Private Law	3
LPE 853	Engineering, Law, and Policy Systems	3
Electives		
Culminating Experience		
LPE 854	Engineering, Law, and Technology Policy Practicum (Capstone Course)	3
Total Credits		30

Students must select 9 credits of electives, which may be a) electives in technical focus areas, b) general electives, or c) required core courses in the graduate certificate in International Affairs, International Security Studies, International Public Policy, International Development, or Engineering Leadership and Innovation Management. Electives will be chosen by the student based on their academic background, in consultation with their adviser or company (if they are associated with a sponsoring company) and the MELP program director. Elective courses can be chosen from a list of approved courses maintained by the graduate program office. Other courses may be approved in consultation with the adviser.

The culminating experience for the degree is a capstone course, LPE 854 Engineering, Law and Technology Policy Practicum. This course addresses current pressing issues in innovation, technology policy, and law through the eyes of policymakers. Students work on public-facing projects in interdisciplinary teams applying strategic technology policy, regulatory concepts and systems thinking to real world policy issues. The projects are tailored to meet the current research needs of particular federal and state lawmakers and agencies based on their legislative and regulatory agendas for the year. Students will analyze technology and policy options and conceive, design, and execute a technology policy research project taking into consideration the political, social and institutional context of technological systems. Students deliver an oral presentation, a technology policy tool, and a policy research paper on the project topic for relevant policymakers,

seeking to assist them in their policy decision-making process. This course is designed to provide students with practical work experience, where they learn by doing.

Minor

A graduate minor is available in any approved graduate major or dual-title program. The default requirements for a graduate minor are stated in Graduate Council policies listed under GCAC-600 Research Degree Policies (<http://gradschool.psu.edu/graduate-education-policies/>) and GCAC-700 Professional Degree Policies (<http://gradschool.psu.edu/graduate-education-policies/>), depending on the type of degree the student is pursuing:

- GCAC-611 Minor - Research Doctorate (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/gcac-611-minor-research-doctorate/>)
- GCAC-641 Minor - Research Master's (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/gcac-641-minor-research-masters/>)
- GCAC-709 Minor - Professional Doctorate (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-700/gcac-709-professional-doctoral-minor/>)
- GCAC-741 Minor - Professional Master's (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-700/gcac-741-masters-minor-professional/>)

Student Aid

Refer to the Tuition & Funding (<http://gradschool.psu.edu/graduate-funding/>) section of The Graduate School's website. Students in this program are not eligible for graduate assistantships.

Courses

Graduate courses carry numbers from 500 to 699 and 800 to 899. Advanced undergraduate courses numbered between 400 and 499 may be used to meet some graduate degree requirements when taken by graduate students. Courses below the 400 level may not. A graduate student may register for or audit these courses in order to make up deficiencies or to fill in gaps in previous education but not to meet requirements for an advanced degree.

Learning Outcomes

Through this program, students will acquire the skills to:

1. Develop solutions to complex societal problems by applying systems thinking and principles of engineering system and integrating perspectives from law, policy, engineering, and ethics;
2. Recognize, analyze and explain the fundamental principles of advanced topics in technology, technology policy, and law;
3. Connect local, national, and global problems, resources, and solutions;
4. Use language and concepts in ways that are consistent with how the law works, explain legal reasoning and analysis, critically read and analyze legal information, and identify and avoid the unauthorized practice of law;
5. Identify, interpret and explain interdisciplinary and trans-disciplinary perspectives and find common ground among them on which to build solutions;
6. Distinguish, analyze and model engineering systems, legal systems, and policymaking systems; communicate the interplay between such

systems in regard to emerging technologies and their integration into existing systems;

7. Perform productively on an interdisciplinary team where members together provide leadership, and create a collaborative and inclusive environment;
8. Communicate effectively across disciplines with a range of audiences and stakeholders.

Contact

Campus

University Park

Graduate Program Head

Timothy William Simpson

Program Contact

Letitia LaNaye Bullock

lqb4@psu.edu

(814) 865-2771