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WELCOME!

On behalf of the faculty and staff, I welcome you to the Department of Engineering and Technology Management (ETM) at Portland State University.

You are among a select group of individuals who have come from around the globe to study in what is recognized as one of the finest graduate programs in our field. The faculty and staff join me in our dedication to make this an academically and professionally rewarding experience for you.

The ETM faculty and students comprise a diverse group, not only in their personal backgrounds, but in their professional backgrounds as well. They are a group of men and women who are experts in their fields. Their academic and workplace credentials provide our students with depth both in research and in the application of that research in technical organizations. The leading edge research you will conduct with our faculty will be of critical importance to the management of technology for many years to come.

Portland State University’s ETM Department also is home to one of the most prestigious international technology management conferences: Portland International Conference on Management of Engineering and Technology (PICMET). As a student, you will have the opportunity to be part of this conference, to meet scholars and researchers from around the world in formal and informal gatherings, and to make professional contacts well beyond the PSU campus.

This handbook has been provided to help smooth your first days in the program and to serve as a guide as you navigate your studies in the department. The handbook was compiled with suggestions from current students and contains information about the campus, the city, the programs offered by the department, and other essentials of academic life at PSU. Detailed information is available on the ETM website.

I believe you will find it a great resource as you make your way from graduate student to one of the new leaders in technology management. Many opportunities will arise throughout your time in ETM and I encourage you to take advantage of these.

You have our best wishes for a successful experience at ETM.

Timothy Anderson, Ph.D, Chair
Department of Engineering & Technology Management
Maseeh College of Engineering & Computer Science
**VISION, MISSION, OBJECTIVE AND GOAL**

**Vision** – To develop leaders for a world in which technology is the dominant force and management of technology is the requirement for global leadership.

**Mission** – To be a rationally and internationally recognized center of excellence in research, education and implementation of technology management.

**Objective** – To be the first choice knowledge source for world-class industry and for students striving to be leaders in engineering and technology management worldwide.

**Goal** – To prepare professionals in engineering, science and technology-related fields for leadership through technology management.

**ETM’S VALUES**

- Strive for uncompromised excellence
- Bring the best people to ETM
- Have an open, participative environment
- Help all members of the ETM Department reach their full potential in their fields

**INTRODUCTION**

Portland State University’s ETM Department offers a variety of degrees and certificates, including Master’s and Ph.D. levels tailored to the needs of engineers, scientists and professionals in related disciplines.

Programs offered by the ETM Department provide students with a firm foundation in the creation of value through engineering and technology while giving them a sound management education. This integrated learning experience:

- enables graduates to deliver effectively in the rapidly changing and complex world of engineering and technology, and
- provides graduates with a broad knowledge base for making and implementing decisions necessary for leadership on both strategic and operational levels.

ETM’s core requirements cover the critical areas of technical management while enabling students to maintain identity in their technical background. Emphasizing the value of technology, analytical decision-making, group project work, and people skills, the curriculum is designed to equip graduates with a resilient base of engineering and technology management competencies.
Who Attends ETM?

The ETM program is home to a diverse community of students with a wide range of academic and professional experience. This diversity adds a unique opportunity for our ETM students as they interact in classes, on research projects and in collaboration with individuals who contribute to each other’s knowledge in ways not otherwise available.

- most ETM students hold at least one degree in engineering-related disciplines.
- 20% have a Master’s or Ph. D. in their technical specialties.
- 65% are employed full or part time and pursue their studies part-time.
- 75% are full-time students.
- ETM students’ ages range from 24 to 58 and the average is about 32.
- The average work experience is 7 years.
- The job titles of those employed in industry range from President or CEO to engineer, researcher, or programmer.

International Initiatives and Opportunities

PSU’s ETM program is not only internationally diverse in terms of students and faculty, but also in leading global initiatives that capitalize on the wide range of engineering and technology management expertise across borders and boundaries.

- ETM is the headquarters for PICMET (Portland International Conference on Management of Engineering and Technology). The first PICMET was held in 1991. Beginning in 1997, it has become an annual conference that provides an invaluable opportunity for exchange of ideas, information, research results and experiences in development and implementation of technology management concepts. Leading decision makers, scholars and practitioners of technology management come together from more than forty countries to discuss existing and emerging issues in technology management and to present multiple perspectives in addressing them.

- From 1987 to 2002, ETM was the editorial headquarters for IEEE Transactions on Engineering Management, the prestigious, refereed international research journal, published by IEEE since 1954.

- From 1987 to 2000, ETM was the editorial headquarters for the Wiley Series on Engineering & Technology Management, a book series which included twenty-three textbooks used in Engineering & Technology programs throughout the world.

“ETM opened up the way I approach decisions. By understanding the basics of decision analysis, one of the key principles of technology management, I was able to apply the same techniques to deciding whether to screen a population for disease or perform a particular diagnostic test. Upon graduation from the program, I confidently began my new position as faculty at a medical university.”

Karen Eden, Assistant Professor, Oregon Health & Sciences University, Portland Oregon
• The Portland Chapter of OMEGA RHO International Honor Society, which recognizes academic excellence in Operations Research and related disciplines, is located in the ETM Department. Omega Rho was founded in the spring of 1976 at a joint meeting of the Operations Research Society of America and the Institute of Management Sciences. Omega Rho is a Member Society of the Association of College Honor Societies. Chapters and members promote academic excellence in higher education and recognize superior scholarship and leadership in the fields of operations research and management science. Students from ETM, Business Administration, and Mathematics may qualify for membership. To be eligible, an ETM student must have a grade point average of 3.5 and have taken 17 hours of graduate courses and must then be nominated for membership.

• ETM has established a number of international academic and research collaborations with universities and research institutes including the University of Pretoria in South Africa, the Seoul National University in Korea, and ETRI (Electronics and Telecommunication Research Institute), also in Korea. The collaborative agreements cover joint research projects, faculty and student exchanges, courses, seminars, and other similar activities.

STUDENT LIFE

A significant aspect of any graduate program is the interaction among students—the exchange of ideas as well as the opportunity to establish lifelong friendships and professional relationships. Students in the ETM program have many options for engaging in this interaction within the program, campus-wide, and in the city and region.

The ETM program provides a living, day-to-day experience in diversity. Students in the program come from countries around the globe as well as from a wide variety of local and regional industries, corporations, and professional backgrounds. In an increasingly global economy, this diversity greatly enhances the program by bringing many cultural and professional perspectives directly into our classrooms, seminars and study groups. Students can learn firsthand how engineering and technology management might be applied in different settings—geographically, culturally, and by engineering discipline.

It is the norm, not the exception, to have student teams with members from competing companies and diverse ethnic backgrounds. These teams develop projects focused on multiple industries in multiple countries.

SOCIAL EVENTS

In addition to more formal opportunities for academic and professional exchange, the ETM program sponsors several social events each year for students, their families, faculty and alumni. These include a potluck dinner each year, a graduation awards and honors ceremony and

"In this Department, students feel valued and wanted. This is what we need as students to be able to successfully pursue our studies...Students get any help they ask for and get even what they can’t imagine. My experience has been positive. I am proud of being an ETM student.”

Valentin Havugiaremye, Rwanda, Africa
celebration, as well as other informal parties organized by students and faculty. ETM students play on department soccer teams, travel to regional tourist sites, and attend arts and cultural events together. Many students, including those from other programs, have commented favorably on the friendliness and “family” feel of the ETM Department.

**STUDENT ORGANIZATIONS**

In addition to social life within the Department, ETM students are invited to explore any of the nearly 200 student organizations on campus. These organizations include international clubs, special interest groups, athletic teams, business and professional organizations, and social and cultural groups. More information is available on the Student Affairs website ([www.pdx.edu/studentaffairs/](http://www.pdx.edu/studentaffairs/); 503-725-5249; 349 Cramer Hall).

**FOR INTERNATIONAL STUDENTS**

The ETM program prides itself on the diversity of its students and faculty, and we provide guidance to our international students beyond traditional academic advising. While no formal program is established for this, we understand language and other cultural issues faced by international students as they adjust to life at Portland State University and in the city. Faculty, staff, and peers work to help students make these adjustments.

PSU also has a well-established English as a Second Language program, language tutors, a Writing Center, and an Office of International Affairs which offers information and services to international students and scholars.

Students, faculty, staff, and community members are invited to meet informally in the Multicultural Student Center ([http://www.pdx.edu/dmss/multicultural-center](http://www.pdx.edu/dmss/multicultural-center); 503-725-5342; 228 Smith Memorial Center) to share in dialogue and activities that further understanding among people of different cultures. The Center presents programs and events that promote appreciation for cultural diversity.

**THE PORTLAND ADVANTAGE**

Portland is known as the Rose City and is situated in one of the most beautiful and livable areas in the world. The city serves as a center for high technology industries that helped nickname it the Silicon Forest, and it owes the name to the presence of a large semiconductor community, spearheaded by Intel’s largest site in the world, and on an ocean of pristine forest.

But Portland also is a cultural hub with a world class symphony orchestra; an opera company; theatre and dance; contemporary, ethnic, and traditional music; art galleries and museums; parks and outdoor activities, including waterfront festivals for all ages and interests. Many cultural organizations offer discounted prices to students with university identification.
Portland, and the region, affords ETM students unparalleled opportunities for professional advancement as well as unlimited recreational opportunities featuring the dramatic Pacific Ocean, the clear waters of myriads of streams, rivers, and lakes, and the snow-packed Cascade Mountains.

Students who wish to travel outside the Portland area will find additional historic, cultural, economic, recreational, and industrial attractions in all areas of the northwest from Seattle and the beautiful San Juan Islands in the north; to the Willamette Valley (a primary agricultural center for the state) and California in the south; and the Cascade Range and the deserts and farmlands of eastern Oregon, Washington and Idaho to the east.

TRANSPORTATION

Portland has long been known as a clean, green and friendly metropolis, with lots to do and even more to see. Leading the “City of Roses” into the 21st century is its economical, easy-to-use public transit system called Tri-Met, which offers buses, MAX trains, and the Streetcar. In addition, bike and walking trails abound, and twelve bridges span the Willamette River linking the eastern and western sections of Portland. PSU is well served by public transportation, and discounted Tri-Met passes are available for students. Additional information is available at the information kiosk outside the University Bookstore on campus between 5th and 6th Avenues and from PSU’s Transportation and Parking (http://www.pdx.edu/transportation/ 503-725-3442).

FUNDING AND WORK OPPORTUNITIES

GRADUATE STUDENT ASSISTANTSHIPS

The ETM Department does not offer financial assistance to students at the Master’s level.

Applicants admitted as full-time Ph.D. students can request to be considered for Graduate Student Assistant positions. Because of the large number of applications to the department, Graduate Student Assistant (GSA) awards are highly competitive. A typical award includes tuition remission plus a modest monthly stipend. The workload required of the GSA is generally 10-15 hours per week.
This does not cover all expenses, however, and a GSA must provide additional support from his/her own resources external to the university.

Criteria for choosing GSAs are similar to those for admission—grades, references, GRE scores, overall academic ability, and need.

**Research Assistantships**

Faculty in the department often have research grants that support one or more Research Assistants (RA). Faculty members choose RAs on an individual basis, but the most important criterion is the student’s ability to contribute to the professor’s research program. Ordinarily, students are given a research assistantship only after they have been in the graduate program for at least one year and have taken at least one class from the professor.

**Other University Sources of Financial Aid**

Additional sources of financial assistance are administered by other PSU offices. Students should contact the office of Financial Aid (http://www.pdx.edu/finaid; 503-725-3461; 174 Neuberger Hall) for information. *(NOTE: Some of these sources have early deadlines.)*

*The PSU Laurels Graduate Award* provides support to academically qualified Oregon residents on a competitive basis; contact the Office of Graduate Studies for further information (http://www.pdx.edu/ogs/ogs-scholarships-and-awards#laurels; 503-725-8402).

A limited number of *scholarships* and other financial support options are available for graduate students; the Office of Graduate Studies posts information on these at http://www.pdx.edu/ogs/financing-your-education.

A list of *on-campus job opportunities* is posted outside the Human Resources Office, 5th floor Market Center Building.

*Loans and work-study* programs are administered by the office of Financial Aid (see above).

**Off-Campus Jobs**

Portland State is fortunate to be surrounded by high-tech and other industries, and ETM majors are in demand as part-time employees at local companies. Information about other job opportunities in the Portland area is posted regularly at: http://www.pdx.edu/careers/jobs-databasecareerconnect.
**Internships**

ETM students have opportunities to serve as interns for industry and high tech companies in the area. An internship often is used to evaluate a potential full-time employee. Upon graduation, interns may be permanently employed by the company, although there is no guarantee.

**Jobs & Internships Portal**

Visit the Maseeh College Jobs and Internships Portal (https://intranet.cecs.pdx.edu/careers/) to sign up for departmental mailing lists that advertise additional internship and employment opportunities and career events. A PSU username and password is required for access. Alumni or prospective students may go to https://portlandstate.qualtrics.com/SE/?SID=SV_3EkUJ4fJMPI4X1r to request access.

**Facilities and Resources**

**PSU Bookstore**

The Portland State Bookstore located at S.W. Fifth Avenue and Montgomery Street within the PSU Urban Center Plaza., handles all textbooks and course-packs for the University. In addition, the Bookstore has an extensive selection of general books including bestsellers, popular fiction, special interest, computer books and children’s books. The store carries a complete selection of school, office, engineering, and art supplies and is the main supplier of PSU sportswear, imprinted souvenirs, and gifts.

**Computer Labs**

**ETM Strategic Decisions Lab**

The Department of Engineering and Technology Management provides computer access to ETM students in the departmental computer lab with 18 computers.

The Computer Action Team (CAT) and PSU’s Office of Information Technology (OIT) maintains and supports the application programs used for class work and the computer labs. Some programs also are available in a student version and ETM students can obtain these from OIT (http://www.pdx.edu/oit/personal-technology-discounts).

**University Computer Labs**

Additional computer labs are located on campus and are available for use by students, faculty, and staff. Computers in these labs have a wide variety of software and applications. Laboratory
attendants are on duty at all times, and user guides, manuals and tutorials are available. For information on and locations of labs go to: [http://www.pdx.edu/oit/computer-labs-classrooms](http://www.pdx.edu/oit/computer-labs-classrooms)

**PSU Library**

The PSU Millar Library on the western Park Blocks is the primary source for research materials and assistance. The Library’s Graduate Student program has been designed to provide personalized assistance with thesis, dissertation, and other research projects.

Librarians can be contacted in person or online ([http://library.pdx.edu/](http://library.pdx.edu/)), and many resources are available online as well. Tours can be arranged to acquaint students with the many services of the Library as well as the location of particular collections you will need for your academic research. Graduate students also can participate in special topics workshops, connect with a Library subject specialist in their fields, and obtain personalized consultation services for in-depth research.

For more information on Graduate Student Library Services, contact Michael Bowman, Engineering Librarian, bowman@pdx.edu, 503-725-3690 or Qi (Kerry) Wu, Business Librarian, wuq@pdx.edu, 503-725-4124.

In addition to its own extensive collection, PSU is part of a network of institutions that participate in the Interlibrary Loan (ILL) program. This means students can access nearly any book, journal or newspaper microfilm, dissertation, video, or other published documents available in any library. Materials are generally available from 6-10 days after request and request forms are available online. Contact the Library to learn more about these services ([http://library.pdx.edu/](http://library.pdx.edu/), 1875 S.W. Park Avenue).

**Student I.D. Card**

PSU students have two different cards. The white card is an official PSU ID card which is used for access to facilities, the library, and other important resources. In particular, ETM students can use it to get access to the Intel Computer Lab and the Fourth Avenue Building.

The second card is the PSU OneCard. This card can be used as a debit card and a card for receiving financial aid and refunds. More information on the PSU ID cards can be found at [https://www.pdx.edu/financial-services/id-card-services-4](https://www.pdx.edu/financial-services/id-card-services-4).
PSU Writing Center

The PSU Writing Center (www.writingcenter.pdx.edu/, 503-725-3570, 188F Cramer Hall), offers assistance with writing at any level and in any discipline. Highly trained consultants—writers and teachers from the English and Linguistics departments—assist student writers with revision of work in progress, interpreting assignments, and working with documentation. The consultants also help students develop powerful, effective writing that presents student ideas, research, scholarship, and expertise in the best form.

Recreation

Students who wish to participate in informal recreation on campus may use the PSU facilities on campus in the PSU Student Rec Center, which is only a couple of blocks from the ETM Department. Any registered student is eligible, with proper ID. Activities include badminton, basketball, general exercise, jogging, handball, table tennis, sauna, swimming, tennis and golf. Dedicated lockers are available for a fee. Free day-use lockers with your own lock. For information, call 503-725-2931.

Health Services and Counseling

The Student Health and Counseling Center (SHAC) is located in the University Center Building at 1880 SW 6th Ave. Contact SHAC to determine your eligibility for health services and for information on services available to students, including counseling and emergency treatment. Call 503-725-2800. Additional information is available online at http://www.pdx.edu/shac/.

Career Services

PSU career services are for both current students and alumni. These include job fairs, resume databases, listings for job openings, and more. These services are provided for the full university at http://www.pdx.edu/careers/. Also, MCECS provides services for engineering and computer science students at https://www.pdx.edu/cecs/jobs-and-internships. Frank Goovaerts, Director of Student Career Success for MCECS, conducts free weekly events on topics such as:

- How to Create an Impactful Resume
- Behavioral Interview Skills
- Networking, LinkedIn, and Job Boards
- How to Work with Recruiters
- Public Speaking Skills

Academic Life
**Academic Honesty**

The purpose of an academic career in a program such as ETM is to create new knowledge building on what has been done before. Students who claim the work of others as their own cheat not only the University, the program, and their peers; but also themselves.

Academic honesty is a cornerstone of any meaningful education and a reflection of each student’s maturity and integrity. The Office of Student Affairs is responsible for working with University faculty to address complaints of academic dishonesty. The Student Conduct Code, which applies to all students, prohibits all forms of academic cheating, fraud, and dishonesty.

These acts include, but are not limited to:
- plagiarism
- buying and selling of course assignments and research papers
- performing academic assignments (including tests and examinations) for other persons
- unauthorized disclosure and receipt of academic information
- other practices commonly understood to be academically dishonest.

Allegation of academic dishonesty may be addressed by the instructor, may be referred to the Office of Student Affairs for action, or both. Allegations referred to the Office of Student Affairs are investigated following the procedures outlined in the Student Conduct Code. Acts of academic dishonesty may result in one or more of the following sanctions:
- a failing grade on the exam or assignment for which the dishonesty occurred
- disciplinary reprimand
- disciplinary probation
- loss of privileges
- required community service
- suspension from the University for a period of up to two years
- dismissal from the University.

In addition to the University policy, the ETM Department has developed its own Department-specific policy on academic honesty and plagiarism. Copies are available in the office and on the ETM website.

*All students must read and adhere to the Academic Honesty policy.*

**Academic Advising**

All students will be assigned an academic advisor to help guide decisions about courses to take, research projects, and general issues that come up during graduate studies. Students will meet initially with their advisors to establish a plan for the student’s academic career in the department. Additional meetings will be scheduled jointly by the advisor and the student.

As required by University graduate procedures, doctoral students must form a four-person doctoral committee which will include the committee chair, at least one more member from ETM, and a faculty representative for the Graduate Office.
Students pursuing the master’s degree by completing a thesis will form a thesis committee of at least three and not more than five faculty members, including the candidate’s advisor as chairperson and a representative of the Office of Graduate Studies. ETM master’s degree students choosing to complete a capstone project (ETM 506) or the Synthesis course (ETM 590) will not need to form a thesis committee.

PROGRAM LENGTH

Students pursuing a master’s degree full-time generally complete the program within two years. All coursework must be completed within seven years.

ETM graduate certificates generally consist of four 4-credit courses and, with good planning, one can usually be completed while doing a Master’s or doctoral degree without additional time or coursework. Doing a graduate certificate alone usually takes two to four quarters. Be sure to coordinate your graduate certificate plan with your advisor carefully.

Students pursuing a doctoral degree are expected to advance to candidacy within one year after the comprehensive, upon the acceptance of the dissertation proposal by the student’s doctoral committee. Doctoral research must be completed with the minimum 27 dissertation credits and defense within five years of advancement to candidacy.

ACADEMIC LOAD

The normal minimum academic load for a full-time graduate student is 9 credits each term including coursework and thesis. Graduate students must seek approval to register in excess of 16 credits a term. Actual course load for students in ETM will vary depending on a student’s particular work and academic situation.

The ETM program is designed to be accessible for part-time students working full-time in the Portland Metro area. Most part-time students take one class a term and the Master’s program may then take thirteen quarters. Some people will use a sabbatical from work to complete a critical mass of courses to expedite completion of the degree.

Academic load for doctoral students will be determined in consultation with the student’s advisor.

REGISTRATION

PSU has an efficient online registration system that is fully explained in the Schedule of Classes Bulletin available online at: http://www.pdx.edu/academic-affairs/psu-bulletin. Advance registration is scheduled according to priority dates published in the Schedule of Classes.

The registration site is available from http://www.pdx.edu/registration/. Registration and changes are continuous, and students may register online through the first week of a term and by a paper form through the second week of a term. A student is formally registered only when all
procedures have been completed and tuition and fees paid for the term. Students are financially responsible for all classes and credits in which they are registered on or after the first day of the term. A pre-registered student must drop all courses prior to the first day of the term in order to avoid a refund percentage charge.

GRADERS

A complete explanation of PSU Graduate Grading System is included in the Bulletin/Catalog issued each year. Graduate courses are graded on a standard A through F system with a limited number of courses offered on a Pass/No pass basis. Students must have a B average (3.00 GPA) on courses fulfilling degree requirements (courses listed on the GO-12 form for master’s students). Incompletes may be assigned when essential coursework is not completed and when work to date is at a C- level or better. Work must be completed by an agreed-upon deadline. An Incomplete grade becomes part of the permanent transcript record after the deadline expires.

Students may also withdraw from classes through the end of the third week with no record on the transcript and no explanation for the action. As a courtesy, students are advised to notify the instructor concerned of the intended or completed withdraw. Students who withdraw after the third week must fill out a Deadline Appeal and will have a W recorded on the transcript.

ACADEMIC PROBATION

Students who do not maintain a 3.00 GPA may be placed on academic probation. If there is the possibility that your GPA will drop below this, you must meet with your advisor to discuss the situation. Students on academic probation will not be permitted to graduate, to be advanced to doctoral candidacy, to receive or continue to hold an assistant-ship, or to register for more than a total of 9 credits in any term. Students who raise the GPA to 3.00 within the next 9 graduate credits in graded courses will be removed from academic probation.

If you are concerned about your academic status, meet with your advisor and develop a strategy for completing your work with full academic standing.

ACADEMIC DISQUALIFICATION

Disqualification occurs if:
A student on academic probation fails to achieve a cumulative graduate GPA of 3.00 or higher within the next 9 letter-graded graduate credits after beginning probation status;
or
A student becomes subject to academic probation for a second time.

A student who is disqualified may not register for any graduate courses at PSU.
DISTRIBUTION

Grades are posted to the Student Information System approximately one week after finals week. Students may access grades through Banweb or by requesting an official transcript from PSU (see http://www.pdx.edu/registration/transcript-requests).

PROGRAMS AND DEGREES

ETM’s objective is to generate and transfer knowledge for making and implementing decisions that provide leadership in the management of engineering and technology. The ETM program addresses these issues at both strategic and operational levels of decision making.

ETM programs are designed for engineers and scientists moving toward technical management responsibilities while maintaining identity in their technology field.

ACADEMIC PROGRAMS AND DEGREES OFFERED

- Ph.D. in Technology Management (TECD)
- Master of Science in Engineering and Technology Management (MS ETM)

GRADUATE CERTIFICATES

- Graduate Certificate in Project Management
- Graduate Certificate in Technology Management
- Graduate Certificate in New Product Development Management
- Graduate Certificate in Strategic Management of Technology
- Graduate Certificate in Technological Entrepreneurship

Dual Degree Options

- M.S. in Engineering Management and M.S. in another Engineering discipline
- M.S. in Engineering Management and MBA
- M.S. in Engineering Management and M.S. in another discipline offered at PSU.

PROGRAM INFORMATION

Master of Science in Engineering & Technology Management

The M.S. in Engineering & Technology Management (MS ETM) provides students with a comprehensive program to meet the needs of engineers and scientists whose objective is to advance to technical management positions in business, industry, or government. Students in this
program may complete a Capstone Project approved by the faculty member who supervises the work in lieu of a thesis.

**Note:** Classes for the MS degree also are available at the Willow Creek and Southside (OIT) campuses.

**Dual Degree Options**

Motivated and qualified students may work on completing two master’s degrees simultaneously. Up to one third of the credits in the program with the lesser number of credits may be applied towards the other master’s degree.

For example, to pursue a Master of Science in Electrical Engineering and an M.S. in Engineering and Technology Management, a student must be admitted to both programs, develop an approved curriculum plan with the help of the departments’ advisors, and then can use up to 15 credits from the Electrical and Computer Engineering department to fulfill electives in the Engineering and Technology Management department.

In the past, students have successfully completed dual master’s degrees resulting in an M.S. in Engineering & Technology Management combined with an M.S. in another Engineering department, an MBA, or a master’s degree in other disciplines.

**Post-Baccalaureate Students**

Prior to admission to the ETM, a student may apply to the university for admission as a Post-Baccalaureate student. Such students are allowed, with permission of the department, to take ETM courses to demonstrate their academic performance for evaluation by the ETM Admissions Committee upon completion of twelve credits.

**Special Students**

ETM courses are available to students admitted to other graduate programs at PSU. A limited number of non-admitted students may also be considered for enrollment in select courses as special students with permission of the Department Chair.

**Ph.D. Program – Ph.D. Technology Management**

The Ph.D. in Technology Management provides students with opportunities to pursue in-depth investigation towards advancing the state-of-the-art knowledge in the field of Engineering Management.

Students conduct their research in a wide range of areas including:

- Benchmarking
- Conflict Resolution
- Creativity
• Data Envelopment Analysis
• Decision Modeling
• Decision Support Systems
• Innovation Management
• Judgment Quantification
• Knowledge-based Systems
• Manufacturing Management
• New Product Development
• Organizational Culture
• Productivity Analysis
• Project Management
• R&D Management
• Reengineering
• Resource Optimization
• Simulation
• Strategic Management
• Team Building
• Technology Acquisition
• Technology Assessment
• Technology Management
• Technology Marketing

PH.D. CURRICULUM

• Successful completion of the equivalent of at least 60 credits of coursework beyond the Bachelor's degree distributed as below. All courses are four credits each. Students may choose additional courses in other academic units throughout the university, approved by their advisor, if such courses are supportive of the proposed research areas.

CORE: At least 20 credits from the following courses, with at least one course from each group. Additional courses taken from this group beyond the minimum required 20 credit hours can be counted toward the fulfillment of the specialization course requirements described below.

● Group-1: Management of Engineering and Technology OR Innovation Management
● Group-2: Project Management OR Technology Marketing
● Group-3: Strategic Management of Technology OR Competitive Strategies in Technology Management
● Group-4: Technology Assessment and Acquisition OR Technology Transfer

SPECIALIZATION: At least 20 credits from courses supporting the proposed research area.

METHODOLOGY: At least 20 credits (listing of approved courses can be found online)
http://www.pdx.edu/engineering-technology-management/phd-in-technology-management
• 12 credits of independent study supervised by ETM faculty culminating in the preparation of a research paper evaluated by the ETM faculty as being at the level of acceptable papers for a national or international conference on Engineering and Technology Management;

• Successful completion of a comprehensive examination to demonstrate mastery of the Engineering and Technology Management field, including the defense of the research paper described above;

• Selection of the dissertation advisor from the ETM faculty and formation of the Ph.D. committee including one member appointed by the Dean of Graduate Studies;

• Development of the dissertation proposal and its approval by the Ph.D. committee resulting in the advancement to Ph.D. candidacy;

• Registering for at least 27 dissertation credits while conducting the research after the advancement to candidacy;

• Preparation of at least one publishable paper for a research journal or recognized refereed technical conference proceedings based upon the dissertation research;

• Defense of the dissertation. Specialization areas of research related to emerging technologies, decision analysis, data envelopment analysis, technology evaluation, technology forecasting, technology road-mapping, technology transfer, technology diffusion, knowledge management, new product development, multi-criteria decision making, quantitative benchmarking, productivity management, project management, manufacturing management, technology marketing, resource optimization, strategic management of technology, and human side of technology management are available.

**M.S. ENGINEERING AND TECHNOLOGY MANAGEMENT**

The Master of Science in Engineering Management (MS ETM) provides students with a comprehensive program to meet the needs of engineers and scientists whose objective is to advance to technical management positions in business, industry, or government.

• Minimum course requirements: 52 credits in approved graduate courses distributed as follows:

  28 credits in the Core Curriculum
  4 credits (or 8 with thesis option) to meet the Capstone requirement
  20 credits (or 16 with thesis option) in electives.

*Core: 28 credits (All courses listed are 4 credits each.)*

ETM 520 Management of Engineering and Technology
ETM 522 Communication and Team Building
ETM 530 Decision Making
ETM 535 Advanced Engineering Economics
ETM 540 Operations Research
ETM 545 Project Management
ETM 555 Technology Marketing

Capstone Requirement (One of the following):
ETM 503 M.S. Thesis (8 credits)
ETM 506 Capstone (4 credits)
ETM 590 Engineering & Technology Management Synthesis (4 credits)

Electives (20 credits or 16 credits with thesis option)

The Department of Engineering and Technology Management offers a wide range of elective courses. In addition, students may choose electives from several other programs throughout the University with the approval of their advisor.

Current (and typical) ETM electives include (all courses are 4 credit hours each):

ETM 511 Technology Management Writing and Presentations
ETM 525 Strategic Planning
ETM 526 Strategic Management of Technology
ETM 527 Competitive Strategies in Technology Management
ETM 531 Technology Assessment & Acquisition
ETM 532 Technology Forecasting
ETM 533 Technology Transfer
ETM 537 Benchmarking Using Data Envelopment Analysis
ETM 546 Project Management Tools
ETM 547 New Product Development
ETM 549 Management of Technology Innovation
ETM 550 Manufacturing Systems Engineering
ETM 551 Manufacturing Systems Management
ETM 560 Total Quality Management
ETM 565 Research Methods for Engineering and Technology Management

Master’s Procedures

The following outline is taken from the Graduate Studies website and summarizes the Portland State University procedural requirements for master's degrees. Additional requirements may be imposed by specific programs. Additional information can be found in the Graduate Studies section of the Portland State University Bulletin and online at www.gsr.pdx.edu/gs.

Be sure to also see the Graduate Candidates’ Guidelines published by the Office of Graduate Studies.
Summary of Procedures for Master's Degrees from the office of Graduate Studies and Research

Steps marked with *** are required for every master's degree.

1. Apply for admission about six months prior to the beginning of the term for which admission is requested. Check with the specific department about the deadlines.

2. Prior to registration, become familiar with general regulations and procedures for the master's degree as described in the Bulletin.

3. Prior to first term registration, meet with assigned faculty advisor and plan a preliminary program of study.

4. If graduate courses taken while an undergraduate at PSU and not used in the bachelor's degree are to be considered for use in the graduate program, the Reservation of Graduate Credit form (GO-10) must be filed in the Office of Graduate Studies before undergraduate degree is awarded and no later than the term following admission to a graduate degree program. (Valid only for courses completed at PSU.)

5. If transfer credit from another accredited institution is to be presented, the Proposed Transfer Credit for Master's Degree form (GO-21) must be completed and approved by student’s advisor and the department chair. It is suggested that this form be submitted early in the student's program; it must be approved by the department before the Graduate Degree Program (GO-12) can be approved.

6. If admitted to conditional or qualified status, remove all deficiencies and/or conditions. Most university conditional admissions will automatically be changed to regular status after completion of the first 12 graded graduate credit hours with a 3.00 or better GPA.

7. *** Submit a final Graduate Degree Program form (GO-12) to the department, approved by the faculty advisor and signed by the department chair or department graduate committee chair, no later than the first week of the term of graduation.

8. *** File Application for Awarding the Degree or Certificate form for each degree and/or certificate being completed with the Office of Graduate Studies no later than the first week of the term of graduation.

9. A minimum enrollment of one credit is required during the term in which oral or written exams are taken. A thesis student must be registered for at least one credit in every term in which the student is working on any phase of thesis, including data development or collection, writing, revision, defense, and finalization through acceptance by the Office of Graduate Studies.

10. If thesis is to be submitted:
    a) thesis proposal, Human Subjects Research Review Committee approval, and appointment of departmental thesis committee must be completed before submission of the GO-12 (see #8 above);
    b) advisor submits the Appointment of Final Oral Examination Committee form (GO-16M) for appointment of the Representative of the Office of Graduate Studies by the end of the first week of the term of graduation (earlier in summer term); see the Bulletin (p. 101) for committee requirements;
    c) the oral examination must be scheduled at least five weeks prior to the end of the term.
and the Graduate Office Representative must receive a complete copy of the thesis at least two weeks prior to the examination date (for summer term, the oral examination must be held during the regular eight week session);
d) student must check with faculty advisor and thesis committee chair to assure completion of requirements prior to final examinations;
e) three copies of the unbound thesis and four copies of the abstract, in final approved form, must be submitted to the Office of Graduate Studies at least three weeks prior to close of the term in which the degree will be granted. Deadlines for each term are available in the Office of Graduate Studies. Required changes must be made before graduation.

11. Schedule and pass final master's examinations, if required, at least two weeks before date of graduation.

12. An Incomplete or In-Progress grade in any course, excluding thesis, which is on the approved program (GO-12) must be removed no later than two weeks before graduation.

13. The Dean of Graduate Studies certifies that all requirements for the degree have been met and recommends the awarding of the degree.


For specific deadlines for each term, see the Graduate Candidates' Deadlines available on the web and in the Office of Graduate Studies.

Summary of Procedures for Doctoral Degrees

A full explanation of procedures for doctoral degrees is included in the *PSU Bulletin* (see Graduate Studies). Forms required are the **GO-16D**, Appointment of Final Oral Examination Committee and **GO-17D**, Recommendation for the Degree. All doctoral candidates will work closely with the chair and members of the dissertation committee as well as their advisors to be sure all university and department requirements are satisfied both before and after advancement to candidacy for the degree.

For additional information, refer to the *PSU Bulletin* or check online at www.gsr.pdx.edu.

There is a separate, dedicated PhD Student Handbook with more information for the ETM Technology Management doctoral program available on the ETM website.

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"The knowledge I received during my Masters studies was an advantage during my interviews. I knew about Total Quality Management, which impressed my boss during our conversation. I learned at ETM how to perform in teams. My thesis at ETM was about multicultural/multifunctional teams and every day I use what I have learned."


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Faculty and Staff

Faculty

Timothy Anderson, Ph.D.
ETM Faculty since 1995
tima@etm.pdx.edu
Associate Professor of Engineering and Technology Management. B.S.E. 1990 University of Minnesota. M.S.I.E. 1992 Georgia Institute of Technology. Ph.D. 1995 Georgia Institute of Technology. **Research Areas:** Data Envelopment Analysis (DEA), productivity management, benchmarking, manufacturing management, engineering economy, operations research.

Tugrul Daim, Ph.D.
ETM Faculty since 1997
tugrul@etm.pdx.edu

Antonie J. Jetter, Ph.D.
ETM Faculty since 2005
ajetter at pdx.edu
Associate Professor in Engineering and Technology Management. Diploma 1998 RWTH Aachen University, Germany; Ph.D. 2004 RWTH Aachen University, Germany. **Research Areas:** Technology & innovation management, new product development, knowledge management, and organizational learning

Dundar F. Kocaoglu, Ph.D., P.E.
ETM Faculty since 1987
kocaoglu@etm.pdx.edu
Liono Setiwijoso, B.S., M.S.
ETM staff since 2002;
liono@etm.pdx.edu
Computer Specialist & PICMET Operations Director since 1990
Director of Operations for PICMET. B.S.E.E. 1987 Trisakti University (Indonesia). M.S.E.E. 1995 Portland State University. **Research Areas:** Information systems, decision support systems, hardware & software systems, database management systems.

Shimon Shmueli, M.I.D.
ETM Faculty since 2010
shimon at touch360.com
Adjunct Assistant Professor of Engineering and Technology Management. BSEE 1987 Technion – Israel Institute of Technology, Israel; MSEE 1991 Polytechnic Institute of NYU; MBA 1996 Wake Forest University Master of Industrial Design, (MID), 2010, North Carolina State University. **Research Areas:** Product design and innovation, new product development, marketing and branding, design thinking in business and product management

Charles Weber, Ph.D.
Faculty since 2003
charles.weber@etm.pdx.edu
Professor of Engineering and Technology Management. A.A. American College of Switzerland. B.S. University of Colorado, Boulder. M.S. University of California, Davis. S. M., Management of Technology, Massachusetts Institute of Technology. Ph.D. 2003 Massachusetts Institute of Technology. **Research Areas:** Knowledge management, innovation and entrepreneurship.
CONTACT INFORMATION

ENGINEERING AND TECHNOLOGY MANAGEMENT DEPARTMENT
LL-50-02
Fourth Avenue Building (FAB)
1900 S.W. Fourth Avenue
Phone: 503/725-4660
e-mail: etminfo@pdx.edu
fax: 503/725-4667
http://www.etm.pdx.edu

HOUSING
College Housing Northwest, Inc.
2121 S.W. Broadway, Suite 1119
Portland, OR 97201
Phone: 503/497-1188
e-mail: staff@chnw.org
http://www.chnw.org

INTERNATIONAL STUDENT AND FACULTY SERVICES
Portland State University
212 East Hall
Phone: 503/725-4094

CAREER CENTER
PORTLAND STATE UNIVERSITY
402 University Services Building
Phone: 503/725-4613
e-mail: askcarr@carc.pdx.edu
http://www.career.pdx.edu

VETERANS AFFAIRS
Veterans Coordinator/Counselor
Portland State University
118 Smith Memorial Center
Phone: 503/725-3876

GRADUATE STUDIES - ADMISSIONS
Portland State University
184 XSB, 1633 SW Park Ave.
Phone: 503/724-8410
Fax: 503/724-3416
e-mail: grad@pdx.edu
http://www.pdx.edu/ogs/future-students
FINANCIAL AID OFFICE
Portland State University
174 Neuberger Hall (lobby)
Phone: 503/725-3461
e-mail: askfa@osa.pdx.edu
http://www.ess.pdx.edu