ABET Accreditation at ETSIT-UPM
Telecommunication Engineer Program (MS)

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ABET: Accreditation Board for Engineering and Technology

Federation of 30 professional and technical societies:

- American Academy of Environmental Engineers (AAEE)
- American Ceramic Society's National Institute of Ceramic Engineers (ACerS/NICE)
- American Congress on Surveying and Mapping (ACSM)
- American Institute of Aeronautics and Astronautics (AIAA)
- American Institute of Chemical Engineers (AIChE)
- American Industrial Hygiene Association (AIHA)
- American Nuclear Society (ANS)
- American Society of Agricultural and Biological Engineers (ASABE)
- American Society of Civil Engineers (ASCE)
- American Society for Engineering Education (ASEE)
- American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE)
- American Society of Mechanical Engineers (ASME)
- American Society of Safety Engineers (ASSE)
- Biomedical Engineering Society (BMES)
- IEEE
- Institute of Industrial Engineers (IIE)
- International Council on Systems Engineering (INCOSE)
- International Society of Automation (ISA)
- International Society for Optics and Photonics (SPIE)
- The Minerals, Metals, and Materials Society (TMS)
- National Council of Examiners for Engineering and Surveying (NCEES)
- National Society of Professional Engineers (NSPE)
- Society of Automotive Engineers (SAE)
- Society of Fire Protection Engineers (SFPE)
- Society of Manufacturing Engineers (SME)
- Society for Mining, Metallurgy, and Exploration (SME-AIME)
- Society of Naval Architects and Marine Engineers (SNAME)
- Society of Petroleum Engineers (SPE)
ABET Accreditation at ETSIT-UPM

- ABET is recognized by the Council for Higher Education Accreditation (CHEA)
- Organized in four Commissions:
  - Applied Science Accreditation Commission (ASAC)
  - Computing Accreditation Commission (CAC)
  - Engineering Accreditation Commission (EAC)
  - Technology Accreditation Commission (TAC).

- ABET performs specialized accreditation applied to specific programs (planes de estudio) in applied science, computing, engineering, and technology at specific levels:
  - Baccalaureate
  - Master

  *Telecommunication Engineer Program at UPM: Integrated Master (5 Years)*

- Up to 2007 ABET accreditation only available on USA and signatories of the 1989 Washington Accord: Canada, United Kingdom, Ireland, Japan, Australia, South Africa, Malaysia, Singapore, New Zealand, Korea, Hong Kong, Taiwan (Seoul Accord in 2008 for computer science programs)

- From 2007, ABET accreditation available in other countries through mutual recognition agreements or memoranda of understanding with national accreditation agencies.
ACCREDITATION PROCESS (18 months):

- Application on January (signed by national accreditation agency if it exists)
- The institution submits Self-Study Report by July 1st.
- Evaluation team (Team Chair + 1-2 Program Evaluators) visits the institution (3 days Sept-Nov)
- Draft statement sent to institution in February. The statement identifies strengths and weaknesses in the program and makes recommendations for improving the program
- Accreditation result decided on July. Final statement sent to institution in September
- Accreditation process valid for 6 years.
- Programs must have graduates at application time
- *All the accreditation process must be in English*
ABET Accreditation at ETSIT-UPM

SELF-STUDY REPORT

- CRITERION 1. STUDENTS
- CRITERION 2. PROGRAM EDUCATIONAL OBJECTIVES
- CRITERION 3. STUDENT OUTCOMES
- CRITERION 4. CONTINUOUS IMPROVEMENT
- CRITERION 5. CURRICULUM
- CRITERION 6. FACULTY
- CRITERION 7. FACILITIES
- CRITERION 8. INSTITUTIONAL SUPPORT
- CRITERION 9. PROGRAM CRITERIA
- GENERAL CRITERIA FOR MASTERS LEVEL PROGRAMS
- APPENDICES
SELF-STUDY REPORT

CRITERION 3. STUDENT OUTCOMES

- (a) an ability to apply knowledge of mathematics, science, and engineering
- (b) an ability to design and conduct experiments, as well as to analyze and interpret data
- (c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- (d) an ability to function on multidisciplinary teams
- (e) an ability to identify, formulate, and solve engineering problems
- (f) an understanding of professional and ethical responsibility
- (g) an ability to communicate effectively
- (h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- (i) a recognition of the need for, and an ability to engage in life-long learning
- (j) a knowledge of contemporary issues
- (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
EVALUATOR TEAM VISIT TO THE INSTITUTION

- **DAY 1:**
  - Visit to the facilities
  - Examination of Program Material: courses (asignaturas) textbooks and study material, samples of student work, exams, evaluation procedures (the material for all the courses in the program must be available for the evaluation team)

- **DAY 2:**
  - Interviews with faculty, staff, students (in English)
  - Meeting with industry representatives

- **DAY 3:**
  - Interview with University officials (Rector, Academic and Financial responsibilities)
  - Final meeting ending with non-written preliminary evaluation result
Our experience at ETSIT-UPM

- **ABET accreditation is difficult for traditional programs:**
  - (Criteria 2, 3 & 4)
  - Structure of Integrated Master (5 Years)

  *ABET procedure much easier for new programs, but they need to have graduates before application.*

- **Benefits:** much easier recognition process of the diploma as MSc for the purposes of professional licensure and registration, employment, or admission to Universities in other countries.

- **Cons:** not recognized in Spain; expensive.