



Department of Mechanical Engineering

Master of Science in Mechanical Engineering

Overview

Admission

Curriculum

Degree requirements

Advising



Admission

1. GRE score or letters of recommendations are not required.
2. TOEFL required for students from institutions where English is not the principle language of instruction. Score ≥ 550 paper-based test or ≥ 213 computer-based test is required.
3. Completed an acceptable baccalaureate degree (four year college) and have attained a grade point average of at least 2.5 (A = 4.0) in the last 60 semester (90 quarter) units attempted.
4. For students with no BS in ME, prerequisite courses must be taken prior to beginning any courses of the graduate program.



Program of Study

With the help of a Mechanical Engineering Graduate Advisor, the student should develop a program of study.

- This is done during the mandatory workshop that is organized upon admission (usually one week before the semester starts)
- To improve the quality of interaction with graduate advisors, we recommend going through the curriculum and develop a coherent list of courses/thesis/independent research that is sufficient for graduation (at least 30 units).
- Further information about the courses can be found at <http://ecatalog.calstatela.edu/> (you may need to use the search option where you can type “Mechanical Engineering”)



Curriculum

MACHINE DESIGN, APPLIED MECHANICS

Units

ME 4020 Advanced Mechanics of Materials	3
ME 4110 Vibrational Analysis I	3
ME 4120 Strength of Materials Laboratory II	1
ME 4140 Machine Design II	3
ME 4210 Dynamics of Mechanisms	3
ME 4230 Introduction to Finite Element Method	3
ME 5010 Advanced Mechanics of Particles	3
ME 5010 Advanced Mechanics of Rigid Bodies	3
ME 5030 Design of Mechanical Systems and Products	3
ME 5110 Vibrational Analysis II	3
ME 5140 Fatigue and Failure in Engineering Design	3



Curriculum

MANUFACTURING AND MATERIALS

Units

ME 4280 Automation and computer-aided Manufacturing	3
ME 4300 Properties and Selection of Engineering Materials	3
ME 4310 Metallography Laboratory	1
ME 4810 Introduction to Robotics	3
ME 5140 Fatigue and Failure in Engineering Design	3
ME 5280 Metalforming Science and Applications	3
ME 5290 Machining Science and Applications	3
ME 5300 Near-Net-Shape Manufacturing and Surface Treatment	3
ME 5310 Processing & Design with Modern Engineering Materials	3

AEROSPACE AND CONTROL ENGINEERING

Units

ME 4030 Aerodynamics	3
ME 4040 Compressible Aerodynamics	3
ME 4100 Control of Mechanical Systems	3
ME 4220 Optimization of Engineering Systems	3
ME 5080 Compressible Fluids	3
ME 5210 Dynamic Systems Analysis	3
ME 5220 Optimal Control of Mechanical Systems	3



Curriculum

THERMAL AND FLUID SCIENCES

Units

ME 4060 Heat Transfer II	3
ME 4070 Design of Thermal Systems	3
ME 4080 Fluid Mechanics II	3
ME 4130 Fluid Mechanics Laboratory II	1
ME 4150 Air Conditioning	3
ME 4160 Energy Systems	3
ME 4180 Renewable Energy and Sustainability	3
ME 5040 Thermal Radiation	3
ME 5050 Heat Conduction	3
ME 5060 Heat Convection	3
ME 5250 Computational Fluid Mechanics	3



Curriculum

ADDITIONAL COURSES

Units

ME 4090 Mechanical Engineering Analysis (required)	3
ME 4190 Computer Aided Mechanical Engineering	3
ME 4500 Biomechanics	3
ME 4510 Biomaterials	3
ME 4520 Impact Biomechanics	3
ME 4540 Special Topics in Mechanical Engineering	1-3
ME 4590 Rehabilitation Design and Internship	3
ME 5540 Special Graduate Topics in Mechanical Engineering	3
ME 5590 Advanced Rehabilitation Design and Internship	3
ME 5960 Comprehensive Examination	0
ME 5970 Graduate Research	1-6 (3)*
ME 5980 Graduate Directed Study	1-3
ME 5990 Thesis	3*

Note: A student to select a limited number of courses in other engineering disciplines.



Degree Requirements

- A total of 30-semester units
- At least 15-semester units must be 500-level (N=5) courses
- A minimum 3.0 grade point average
- Writing Proficiency Examination (WPE)
- Area of Specialization: min=15 units and max=30 units
- Electives: min=0 units and max=15 units
- ME 4090 Mechanical Engineering Analysis
- At most 15-semester units must be 400-level (N=4) courses
- Options for culminating experience
 - ME 5960 Comprehensive Examination (0 units)
 - ME 5951 + ME5952 Design Project (6 units)
 - ME 5990 Thesis + ME 5970 Graduate Research (6 units)

Note: Students should consult the CSULA General Catalog for further information.

<http://www.calstatela.edu/academic/ecst/me/index.htm>



Advancement to Candidacy (to Undertake Culminating Experience)

- Satisfaction of Graduation Writing Assessment Requirement
- Classified graduate standing
- An approved master's degree study plan on file in the college graduate studies office
- Completion of a minimum of 12 semester units of the master's degree study plan with an overall B (3.0) grade point average or higher
- Recommendation of the major department/division/school
- Approval of the college graduate dean

Note: Only students who are advanced to candidacy are eligible to enroll for comprehensive examinations (i.e. ME5960 in their major discipline) or for thesis or project units (i.e. ME5990 in their discipline)



Advising

- Peer Graduate Advisor: Danny Clemons and Justin Moon
- Graduate Program Coordinator: *Lupe Martinez*
- Department Chair: *Nancy Warter-Perez*
- Department coordinator: *Andrea Galvez*
- *Graduate advisors:*
 - *Arman Pazouki*
 - *Shihao (Travis) Hu*
 - *Arturo Pacheco-Vega (Principal advisor)*
- <http://tinyurl.com/mepermit>
- Notes: new advising tool for graduate students: CSNetwork Services
- <https://csns.calstatela.edu/wiki/content/csns/tutorials/>