

California State Polytechnic University, Pomona
Master of Science in Mechanical Engineering
Degree Curriculum Sheet

Candidates for the degree of Master of Science in Mechanical Engineering must satisfy the following requirements:

1. Develop, file, and complete a program of study*
2. Pass the Graduation Writing Test
3. Complete a minimum of 45 units of coursework with a grade point average of 3.00 or better, of which:
 - (a) at least 12 units must be in Breadth, 12 units in a Technical Emphasis area (Thermal-Fluids or Solid Mechanics), and 12 units of Tech Electives
 - (b) at least 36 units must be in 500 and 600 level courses, and
 - (c) 4-8 units of Thesis (EGR 696), or 2-6 units of Directed Study (EGR 691) plus Master's Degree Project (EGR 692, 2 units)

| Breadth (Math Courses) | | Units |
|---------------------------------------|---------|-----------|
| Advcd Differential Equations | EGR 509 | 4 |
| Eng'g Prob. and Statistics | EGR 510 | 4 |
| Numerical Modeling | EGR 511 | 4 |
| Vector Analysis and Complex Var. | EGR 512 | 4 |
| Eng'g Tensor Analysis | EGR 513 | 4 |
| Variational Methods in Eng'g | EGR 514 | 4 |
| Matrix Methods in Eng'g | EGR 515 | 4 |
| Special Topics for Grad. Students | EGR 599 | 4 |
| Total Units Required (Minimum) | | 12 |

| Technical Emphasis (Thermal-Fluids Concentration) | | Units |
|--|--------|-----------|
| Conduction Heat Transfer | ME 532 | 4 |
| Advcd Fluid Dynamics | ME 535 | 4 |
| Advcd Eng'g Thermodynamics | ME 545 | 4 |
| Advcd Transport Phenomena | ME 550 | 4 |
| Radiation Heat Transfer | ME 564 | 4 |
| Convective Heat Transfer | ME 584 | 4 |
| Computational Fluid Dynamics | ME 632 | 4 |
| Total Units Required (Minimum) | | 12 |

| Technical Emphasis (Solid Mechanics Concentration) | | Units |
|---|--------|-----------|
| Elasticity | ME 520 | 4 |
| Fracture of Solids | ME 534 | 4 |
| Advcd Classical Dynamics | ME 536 | 4 |
| Advcd Mechanics of Materials | ME 556 | 4 |
| Analysis of Mechanical Designs | ME 557 | 4 |
| Continuum Mechanics | ME 599 | 4 |
| Advanced Finite Element Analysis | ME 599 | 4 |
| Vibration of Continuous Systems | ME 599 | 4 |
| Total Units Required (Minimum) | | 12 |

| Technical Electives | | Units |
|--|---------|-------|
| Advcd Indeterminate Structures | EGR 516 | 4 |
| Mechanical Metallurgy | ME 533 | 4 |
| Polymer Fluid Dynamics | EGR 537 | 4 |
| Systems Theory | EGR 540 | 4 |
| Computer Simulation of Eng'g Syst's | EGR 553 | 4 |
| Nonlinear Dynamics | ME 570 | 4 |
| Combustion Theory | ME 576 | 4 |
| Vibration and Flutter | EGR 579 | 4 |
| Materials for Electronics | EGR 580 | 4 |
| Solar Energy Systems | ME 590 | 4 |
| Direct Energy Conversion | ME 591 | 4 |
| Boundary Layer Concepts | EGR 595 | 4 |
| Research Methods | EGR 596 | 2 |
| Special Topics for Grad. Students | EGR 599 | 2-4 |
| Stability of Structures | EGR 618 | 4 |
| Systems Theory | EGR 640 | 4 |
| Digital Control Systems | EGR 642 | 4 |
| Optimal Control Systems | EGR 643 | 4 |
| Nonlinear Control Systems | EGR 652 | 4 |
| Directed Study | EGR 691 | 2-6 |
| ** xx 4xx 400-level eng'g courses (Needs Approval) | | 8 |

* Program of study should be filed before the completion of 12 units. The MSME program should be completed within 7 years.

** Up to 8 units of approved 400 level engineering courses may be taken and counted toward the MSME degree. These courses must be approved by the MSME Graduate Coordinator.