UCI Samueli School of Engineering

DEPARTMENT OF MECHANICAL AND AEROSPACE ENGINEERING

MASTER OF SCIENCE PLAN OF STUDY – THESIS OPTION

Last Name:	First Name:	Student ID#
Email:	Major area of study:	
Faculty advisor name:		
M.S. degree requirements to be completed by:		

THESIS OPTION minimum requirements:

- Eight (8) technical or science, non-research, graduate courses, as specified in the table below. At least four (4) of these courses must be from the MAE Department.
- Three (3) seminar units (MAE 298)
- Twelve (12) units of M.S. Thesis Research (MAE 296)

Applied Math Courses					Requirements
Dept	**Course**	**Units**	**Qtr/Yr**	**Grade**	At least one (1) course from the approved Applied Math area is required.
Courses Related to Major Area					At least three (3) courses from the approved list of courses in one of the five MAE Major Areas are required.
Dept	**Course**	**Units**	**Qtr/Yr**	**Grade**	
Additional Courses					Additional technical or science, non-research, graduate courses to bring the total number of such courses to at least eight (8). The approval of the Graduate Advisor is required for courses outside the MAE Department. With the approval of the Graduate Advisor, one upper division technical undergraduate course in MAE may be used to replace one of the additional courses; this substitution cannot be a core (required) course for the equivalent UCI program that the student received his/her undergraduate degree
Dept	**Course**	**Units**	**Qtr/Yr**	**Grade**	
Research and Seminar Units					MAE 296: 12 units are required MAE 298: 3 units are required
Dept	**Course**	**Units**	**Qtr/Yr**	**Grade**	
TOTALS:					

Signatures:

Student	Date:
Faculty Advisor	Date
MAE Graduate Advisor	Date
Associate Dean for Graduate Studies	Date

UCI Samueli School of Engineering

DEPARTMENT OF MECHANICAL AND AEROSPACE ENGINEERING

MASTER OF SCIENCE PLAN OF STUDY – COMPREHENSIVE EXAMINATION OPTION

Last Name:	First Name:	Student ID#
Email:	Major area of study:	
Faculty advisor name:		
M.S. degree requirements to be completed by:		

COMPREHENSIVE EXAMINATION OPTION minimum requirements:

- Eleven (11) technical or science, non-research, graduate courses, as specified in the table below. At least six (6) of these courses must be from the MAE Department. Up to two (2) of these courses may be replaced by an equivalent number of units of M.S. Project (MAE 294).
- Three (3) seminar units (MAE 298)
- Comprehensive Examination. Consult the MAE Department guidelines.

Applied Math Courses					Requirements
Dept	**Course**	**Units**	**Qtr/Yr**	**Grade**	At least one (1) course from the approved Applied Math area is required.
Courses Related to Major Area					At least three (3) courses from the approved list of courses in one of the five MAE Major Areas are required.
Dept	**Course**	**Units**	**Qtr/Yr**	**Grade**	
Additional Courses					Additional technical or science, non-research, graduate courses to bring the total number of such courses to at least eleven (11). The approval of the Graduate Advisor is required for courses outside the MAE Department. With the approval of the Graduate Advisor, one upper division technical undergraduate course in MAE may be used to replace one of the additional courses; this substitution cannot be a core (required) course for the equivalent UCI program that the student received his/her undergraduate degree. M.S. Project: up to 8 units of MAE 294 including documentation of a research project are allowed in lieu of elective courses with 4 units of MAE 294 replacing one elective course.
Dept	**Course**	**Units**	**Qtr/Yr**	**Grade**	
Seminar Units					MAE 298: 3 units are required
Dept	**Course**	**Units**	**Qtr/Yr**	**Grade**	
TOTALS:					

Signatures:

Student	Date:
Faculty Advisor	Date
MAE Graduate Advisor	Date
Associate Dean for Graduate Studies	Date

LIST OF APPROVED COURSES FOR THE M.S. DEGREE

The courses below satisfy the requirement for the "Courses Related to Major Area" in the M.S. Plan of Study

Major Area	Approved Courses
Applied Math	MAE 200A* Engineering Analysis I MAE 200B* Engineering Analysis II With the approval of the Graduate Advisor, a graduate-level math course offered by another engineering or science department at UCI
Dynamics and Controls	MAE 206* Nonlinear Optimization Methods MAE 241* Dynamics MAE 270A* Linear Systems I MAE 274 Optimal Control MAE 275 Nonlinear Feedback Systems MAE 277 Learning Control Systems
Fluid Dynamics and Propulsion	MAE 223A Numerical Methods in Heat, Mass, and Momentum Transport (Laminar Flows) I MAE 230A* Inviscid Incompressible Fluid Mechanics I MAE 230B* Viscous Incompressible Fluid Dynamics II MAE 230C* Compressible Fluid Dynamics MAE 230D Theoretical Foundations of Fluid Mechanics MAE 231 Fundamentals of Turbulence MAE 233 Turbulent Free Shear Flows MAE 236 Nonequilibrium Gas Dynamics MAE 237 Computational Fluid Dynamics
Solid Mechanics	MAE 248 Mechanics of Smart Structures MAE 254* Mechanics of Solids and Structures MAE 255 Composite Materials and Structures MAE 256 Nanomechanics MAE 258* Mechanical Behavior of Solids - Continuum Theories MAE 259* Mechanical Behavior of Solids - Atomistic Theories
Systems and Design	MAE 240 Inertial Navigation MAE 242 Robotics MAE 245 Spatial Mechanism Design MAE 247 Micro-System Design MAE 249 Micro-Sensors and Actuators MAE 250 Biorobotics MAE 251 Micro/Nano Robotics MAE 252 Fundamentals of Micro Fabrication MAE 279 Special Topics in Mechanical Systems MAE 280 Design of Computer Controlled Robots MAE 286 Design for Human Movement
Thermal and Transport Sciences	MAE 212 Engineering Electrochemistry: Fundamentals & Applications MAE 216* Statistical Thermodynamics MAE 217* Generalized Thermodynamics MAE 220* Conduction Heat Transfer MAE 221* Convective Heat Transfer MAE 224 Advanced Transport Phenomena

Notes:

1. Courses marked with an asterisk (*) are core courses within each major area. These courses, or their equivalent, cannot be counted towards the PhD course requirement in the same major area. In the area of Systems Engineering and Design, core courses depend on the specialization selected within this area; students are asked to consult with their Faculty Advisor and the MAE Graduate Advisor.

2. Several courses have prerequisites. Consult the UCI Catalogue for prerequisite requirements.
3. Not all courses are taught every year. Consult the schedule of classes.