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## MECH 4391: Mechanical Engineering Project (1-3 credits)

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### **COURSE DESCRIPTION:**

Independent investigation of mechanical engineering problems in consultation with instructor. PREREQUISITE: senior standing. The course can be repeated multiple times up to a maximum of 3 credit hours. An aggregation of three (3) credits earned for this course is acceptable as a substitute for a MECH elective. Maximum repeat for 3 hours credit. Cannot be taken concurrently with MECH 4395 or MECH4396.

### **COURSE INSTRUCTOR/MENTOR:**

A Department Faculty Member will serve as a mentor and will be primarily responsible for assessing student performance and progress towards the project objectives.

### **COURSE ADMINISTRATION:**

The Undergraduate Program Coordinator will issue the permit to register for the course after receiving a completed Mechanical Engineering Project Proposal Contract and consult with the faculty mentor as needed to ensure the student is making progress towards completing the project objectives.

### **COURSE TYPE:**

Independent Study

### **VARIABLE CREDIT EFFORT EXPECTATIONS:**

Students interested in undertaking a mechanical engineering project should consult with a Mechanical Engineering faculty member to formulate a project and to serve as a mentor for the project. The objectives for each Mechanical Engineering Project should be uniquely defined for one student to complete within an academic term and be determined such that the variable credit effort expectations below are met, be completed within an academic term.

- A student registered for 1 credit hour is expected to spend the equivalent of 3 hours per week working on the project during a full session academic session.
- A student registered for 2 credit hours is expected to spend the equivalent of 6 hours per week working on the project during a full session academic session.
- A student registered for 3 credit hours is expected to spend the equivalent of 9 hours per week working on the project during a full session academic session.

Students may elect to distribute the 3 credits over multiple semesters to balance their workload or to accommodate projects which may span more than one academic term.

### **PROJECT PROPOSAL CONTRACT:**

Students interested in undertaking a mechanical engineering project should consult with a Mechanical Engineering faculty member to formulate a project and to serve as a mentor. The objectives of the project should be determined such that the variable credit effort expectations are met and the objectives can be completed within an academic term. For projects spanning multiple semesters, the objectives for each semester

of the course must be clearly delineated between terms. A completed Mechanical Engineering Project Proposal Contract must be submitted to the undergraduate program coordinator using a Course Permit Request Form receive a permit to register for the course. The undergraduate program coordinator will review the Project Proposal Contract to ensure that the project is clearly defined, and the project objective(s), tasks, and task durations are adequately defined to meet the variable credit effort expectations.

**GRADE COMPONENTS:** The overall course grade will be computed using the following components and weights.

Grade Components and Weighting		Grading Scale	
Midterm Weekly Journal.....	25%	A.....	90 – 100
Final Weekly Journal.....	25%	B.....	80 – 89
Final Written Report.....	50%	C.....	70 – 79
		D.....	60 – 69
Total	100%	F.....	Below 60

**WEEKLY JOURNAL:**

Students are required to maintain a journal during their project which details their weekly efforts on the project and progress towards the objectives. The effort reflected in the journal entries should be commensurate with the weekly variable credit effort expectations and meet the minimum word count expectations below. The midterm submission of the journal should be completed and sent to the instructor/mentor no later than the last day before the beginning of Fall break in the full fall term, the last day before the beginning of Spring break in the full spring term, or the last day before the 4<sup>th</sup> of the July in the full summer term. The instructor/mentor will submit a copy of the graded midterm weekly journal to the undergraduate program coordinator no later than two weeks after receiving the midterm weekly journal from the student. The final submission of the journal should be completed and sent to the instructor/mentor no later than the last day before the beginning of the Final Exam period for all full academic terms. The instructor/mentor will submit a copy of the graded final weekly journal to the undergraduate program coordinator no later than the final day of the Final Exam period.

- 1 credit hour: minimum of 150 words per weekly entry
- 2 credit hours: minimum of 250 words per weekly entry
- 3 credit hours: minimum of 350 words per weekly entry

**FINAL REPORT:**

The final written report for the project should be comparable in scope and quality to a written student conference paper, student competition paper, or student journal publication. The final written report should reflect effort commensurate with the variable credit effort expectations. The student and mentor will select an established student conference paper format, student competition paper format, or student journal format for

the final written report no later than the last day before the beginning of Fall break in the full fall term, the last day before the beginning of Spring break in the full spring term, or the last day before the 4<sup>th</sup> of the July in the full summer term. For projects spanning multiple semesters, the final report format should be determined during the first semester. The final reports submitted for each semester of a multiple semester project should reflect completion of the objectives defined for each term and cumulative progress toward the overall project objectives. Although students are encouraged to submit their final report for presentation, competition, or publication, it is not required. The final report should be completed and sent to the instructor/mentor no later than the last day of before the Final Exam period for all full academic terms. The instructor/mentor will submit a copy of the graded final report to the undergraduate program coordinator no later than the final day of the Final Exam period.

### **Academic Integrity**

Plagiarism, cheating, and other forms of academic dishonesty are prohibited. Students guilty of academic misconduct, either directly or indirectly, through participation or assistance, are immediately responsible to the instructor of the class in addition to other possible disciplinary sanctions that may be imposed through the regular institutional disciplinary procedures. Expectations for academic integrity and student conduct are described in detail on the website of the Office of Student Accountability (<https://www.memphis.edu/osa/>).

### **Students with Disabilities**

Qualified students with disabilities will be provided reasonable and necessary academic accommodations if determined eligible by disability services staff at the University of Memphis. Prior to granting disability accommodations in this course, the instructor must receive written verification of a student's eligibility for specific accommodations from the disability services staff. It is the student's responsibility to initiate contact with Disability Resources for Students (DRS) and to follow the established procedures for having the accommodation notice sent to the instructor.

### **Syllabus Changes**

The instructor and the undergraduate program coordinator reserve the right to make changes as necessary to this syllabus. If changes are necessitated during the term of the course, the instructor and the undergraduate program coordinator will notify students of such changes by email communication and/or posting both notification and nature of change(s) on the course bulletin board.