

TO: The Faculty of the College of Engineering

FROM: The Faculty of the School of Mechanical Engineering

RE: ME 46300 Prerequisite and Format Changes

The Faculty of the School of Mechanical Engineering are seeking to alter the prerequisites and format of ME 46300. First, the prerequisite of MSE 23000 will no longer be required. Second, the format of ME 46300 will be altered from 3 credits of lecture to 1 common hour (for all sections) of lecture (1 cr) and 2 three-hour lab sessions (2 crs). This action is now being submitted to the Engineering Faculty with a recommendation for approval.

FROM:

ME 46300 – Engineering Design

Credit Hours: 3.00. Application of the design process to the design of various engineering components and systems. Mathematical modeling in design is emphasized. Design problems from all areas of mechanical engineering are considered. Typically offered Fall Spring Summer.

Format: 3Cr Lecture (50 minutes per Lecture)

Prerequisites: ME 31500 Heat and Mass Transfer, ME 35200 Machine Design I, ME 37500 Systems, Measurements and Control II, and MSE 23000 Structure and Properties of Materials

TO:

ME 46300 – Engineering Design

Credit Hours: 3.00. Application of the design process to the design of various engineering components and systems. Mathematical modeling in design is emphasized. Design problems from all areas of mechanical engineering are considered. Typically offered Fall Spring Summer.

Format: 1Cr Lecture (50 Minutes), 2Cr Lab (170 Minutes per Lab)

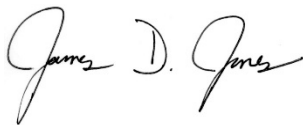
Prerequisites: ME 31500 Heat and Mass Transfer, ME 35200 Machine Design I, and ME 37500 Systems, Measurements and Control II.

Reason: ME is dropping MSE 23000 as a prerequisite for ME 46300 to reduce the number of required prerequisites required and enable more students to take ME 46300 earlier in the ME Curriculum. Of the four prerequisite courses (ME 31500 Heat and Mass Transfer, ME 35200 Machine Design I, ME 37500 Systems, Measurements and Control II, and MSE 23000 Structure and Properties of Materials), MSE 23000 is the one least essential for success in ME 46300.

The format of ME 46300 is also being changed. First, a common 1 hour lecture (1 cr) is being implemented. The purpose of this common lecture will enable all of the ME 46300 students to benefit from the strengths of each member of the instructional team. For example, common lectures might include topics like project management skills, CAD/analysis skills, instrumentation skills, modeling and control skills, etc. In this format, each member of the instructional team can contribute their expertise to the entire

ME 46300 student population. Second, in addition to the 1 hour of lecture, there will be two labs (170 minutes each) on separate days (nominally TTh or WF). In this model, three lab sections will be conducted concurrently, one in each of the three assembly rooms of the PEARL Lab. For example, there will be three labs TTh 7:30-10:30am, three labs TTh 2:30-5:20pm, three labs WF 7:30-10:20am and three labs WF 2:30-5:20pm. The concurrent lab times will enable the three lab instructors to assist each other's students in their areas of expertise. This model will provide the ME 46300 students 6 dedicated hours (over two days) to enable students to accomplish more on their projects. As part of this change, we are also restructuring the curriculum to enable us to better balance the fall/spring project load in order to more effectively utilize our facilities (e.g., the electronics shop, the machine shop, the 3-D printing capabilities, etc.). Currently, about 75% of the students take ME 46300 in the spring semester, 20% in the fall semester and 5% in the summer semester. By load leveling, students will have more access to the resources they need to successfully complete their projects. Furthermore, by enabling students to take ME 46300 earlier in the curriculum, we are hopeful to attract more industry-sponsored projects by encouraging co-op and internship students to seek projects from their companies that they can lead as their senior design project. Also, we are actively recruiting projects from local industries.

Finally, since this EFD on changes to ME 46300 only impacts ME students (non-ME students cannot register for ME 46300), I would ask that the Engineering Curriculum Committee (ECC) fast track this EFD. This change will have no impact on any other professional school students and the ME faculty themselves have already approved this change for ME students.



Jim Jones, Associate Head, ME Undergraduate Program
School of Mechanical Engineering