**Course number and name**

Materials Science and Engineering Senior Design II (MTSE4100)

**Credits and contact hours**

3 Credits. Wed. 2:30pm - 3:20pm at DP202; Additional two hours with advisor

**Instructor’s or course coordinator’s name**

Instructor: Narendra Dahotre

**Text book, title, author, and year**

a. Other supplemental materials
   This is an advisor guided semester based on MTSE 4090 lectures.

**Specific Course Information**

a. Brief description of the content of the course (catalog description)

The primary objective of this course is to provide every student with experience in “real world” engineering design that draws on many of the skills that have been mastered during their studies in the Department of Materials Science and Engineering at the University of North Texas. Students will exhibit an ability to design a system, component, or process to meet a desired need. This is a two course sequence with the second course (this course, MTSE4100) providing time for completion of a design project setup during the first course (evaluating the project plan from last semester, perform work towards completion of project, and present progress of work both orally and in writing).

b. Prerequisites or co-requisites

   MTSE 3010, MTSE 3020, MTSE 3030, MTSE 3040, MTSE 3050, MTSE 3070, MTSE 3080, MTSE 4090.

c. Indicate whether a required, elective, or selected elective course in the program

   Required

**Specific goals for the course**

a. Specific outcomes of instruction

- Students are expected to function in an environment that is more similar to that which they will encounter in their careers outside the university setting. As such, instructors have two main functions: to serve as advisors to the senior design student/teams and as evaluators of student/team...
Students are expected to operate effectively either as an individual or in a team environment; team evaluations will be compiled at the end of the semester using the attached rubric.

Students will succeed by exhibiting an ability to apply and integrate knowledge of material structure, properties, processing and performances for a materials selection and process design problem.

Students should consider additional aspects such as the economic, environmental, ethical, safety as well as social and political impacts of the effort.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

This course addresses ABET Student Outcome(s): a, b, e, g, j, k

Course Schedule: Meets every Wednesday at 2:30 PM in DP202

8/26/15: Project review, course expectations (Prof. Dahotre)
9/9/15: Presentation of revised GANTT charts
9/16/15: Review of progress and design goals
9/23/15: Presentation of GANTT charts for grading
9/30/15: Individuals/Groups present progress report to advisors
10/7/15: Preliminary project progress DUE – 5 min presentation to advisory groups, questions and answers (not for grading)
10/14/15: Review
10/21/15: Groups present progress report to advisors
10/28/15: Project progress written report DUE – Report & 5 min presentation to advisory groups, questions and answers
11/4/15: Review
11/11/15: Groups present progress report to advisors
11/18/15: Draft Final Report DUE – progress meeting with advisors
11/25/15: Senior Design Day Oral and Poster Presentations
12/2/15: Final Report & Team Evaluations DUE

Grading:

Students will be evaluated based on progress reports submitted to advisors, team evaluations, reports of group meeting and meetings with advisors, and prepared presentations and written reports. Grades will be assigned for each task and group members will evaluate the group’s performance during the semester. Points will be based on the following.

<table>
<thead>
<tr>
<th>Task</th>
<th>Points</th>
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<tbody>
<tr>
<td>Project Updated GANTT Chart</td>
<td>25</td>
</tr>
<tr>
<td>Project Progress Report (project design goals and updated state of the art literature review)</td>
<td>50</td>
</tr>
<tr>
<td>Draft Final Report (project background, literature, plan, accomplishments)</td>
<td>25</td>
</tr>
<tr>
<td>Design Day Oral and Poster Presentations</td>
<td>100</td>
</tr>
<tr>
<td>Final Report (Project background, literature, plan, design of experiments, accomplishments)</td>
<td>100</td>
</tr>
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Grades will be assigned using the following scale: A>90%>B>80%>C>70%>D>60%>F

Individuals/Groups are responsible for planning their own meetings outside of class to complete the project and for scheduling time with the faculty advisor and industrial sponsor (if appropriate). Review the educational objectives carefully to determine additional details that should be considered in all senior design presentations and written reports.