Course Change Request

Date Submitted: 11/16/17 6:04 pm

Viewing: MEEN 635 : Flow and Fracture of Polymeric Solids
Also Known As: MSEN 635
Last edit: 11/28/17 11:33 am
Changes proposed by: jules.henry

Programs referencing this course
CERT-CU44: Polymer Specialty - Certificate

Other Courses referencing this course
As A Banner Equivalent:
MEMA 635 : Structural Analysis of Composites

Faculty Senate Number

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
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<tbody>
<tr>
<td>Rebecca Simon</td>
<td><a href="mailto:rebeccasimon@tamu.edu">rebeccasimon@tamu.edu</a></td>
<td>979-458-9196</td>
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Rationale for Course

The proposed changes are part of a routine curriculum review.

Course prefix MEEN Course number 635
Department Mechanical Engineering
College/School College of Engineering
Academic Level Graduate
Academic Level Undergraduate
Effective term 2018-2019

Complete Course Title Flow and Fracture of Polymeric Solids
Abbreviated Course Title FLOW & FRACT POLY SOLIDS

Catalog course description Relationship of molecular structure to flow and fracture in polymeric materials; introduction of viscoelastic fracture mechanics; micromechanisms of fracture including crazing; fatigue behavior of polymeric materials.

Prerequisites and Restrictions

Concurrent Enrollment No
Should catalog prerequisites / concurrent enrollment be enforced? No

Crosslistings
MSEN 635 Yes No
Stacked No Stacked with

In Workflow
1. MEEN Department Head
2. MSEN Department Head
3. Curricular Services Review
4. EN Committee Preparer GR
5. EN Committee Chair GR
6. EN College Dean GR
7. GC Preparer
8. GC Chair
9. Faculty Senate Preparer
10. Faculty Senate
11. Provost II
12. President
13. Curricular Services
14. Banner

Approval Path
1. 11/21/17 10:26 am Dan McAdams (dmcadams): Approved for MEEN Department Head
2. 11/21/17 8:41 pm Ibrahim Karaman (karaman): Approved for MSEN Department Head
3. 11/28/17 11:33 am Sandra Williams (sandra-williams): Approved for Curricular Services Review
4. 11/30/17 11:19 am Jennifer Versacruz (jversacruz): Approved for EN Committee Preparer GR
5. 12/07/17 10:42 am Prasad Enjeti (enjeti): Approved for EN Committee Chair GR
6. 12/13/17 9:06 pm Prasad Enjeti (enjeti): Approved for EN College Dean GR
7. 01/02/18 4:37 pm LaRhesa Johnson (ljohnson): Approved for GC Preparer
8. 01/20/18 9:38 pm LaRhesa Johnson (ljohnson): Approved

https://nextcatalog.tamu.edu/courseleaf/approve/
Course Syllabus

Syllabus: Upload syllabus

Upload syllabus: MEEN_MSEN_635_Syllabus.docx

Letters of support or other documentation: No

Additional information

Reviewer Comments: Sandra Williams (sandra-williams) (11/14/17 8:54 pm): Rollback: Syllabus missing grade of "D" - also, what is the grade if a student gets an 80 (A or B), same for 65 (B or C)?
Sandra Williams (sandra-williams) (11/28/17 11:33 am): Update received.

Reported to state: Change
Course title and number: MEEN/MSEN 635 – Flow & Fracture in Polymeric Solids
Term (e.g., Fall 200X): Spring 2020
Meeting times and location: TBD

Course Description and Prerequisites
Relationship of molecular structure to flow and fracture in polymeric materials; introduction of viscoelastic fracture mechanics; micromechanisms of fracture including crazing; fatigue behavior of polymeric materials.

Prerequisites: None.

Learning Outcomes or Course Objectives
Course Objectives: (1) To provide both fundamental and practical knowledge related to mechanical and fracture behaviors of polymers and composites, (2) to facilitate discussions and critiques on recent research activities in literature, and (3) to better prepare students for an engineering material career.

Learning Outcomes: The students are expected to learn both fundamental and practical aspects of polymer material science, especially for topics related to deformation and fracture of polymers and composites. In particular, the students are expected to master polymer structure-property relationship through understanding of how polymer structure and morphology influence physical and mechanical properties, how the processing parameters affect morphology and properties of polymers, and how the toughening agent and filler particles change polymer properties. Comprehensive knowledge gained will well prepare the students for both academic and industrial career needs.

Instructor Information
Name: H.-J. Sue
Telephone number: 979.845.5024
Email address: hjsue@tamu.edu
Office hours: Tuesday/Thursday, 1:00 – 2:00 pm or by appointment
Office location: RDMC 220

Textbook and/or Resource Material
Grading Policies

Homework: 15%
Participation in Classroom: 5%
Mid-Term Exam: 25%
Presentation/Term Paper: 20%
Final Exam.: 35%

Grading Scale

Grading Scale:
A = 80 – 100
B = 70 – 79.99
C = 60 – 69.99
D = 50 – 59.99
F = <50

Course Topics, Calendar of Activities, Major Assignment Dates

Attendance Policy: Students are expected to follow Student Rule 7 for classroom attendance. For additional information visit http://student-rules.tamu.edu/rule07.

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<th>Topic</th>
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<td>1</td>
<td>Polymer Structure &amp; Morphology</td>
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<tr>
<td>2</td>
<td>Polymer Structure &amp; Morphology (Cont.) Rubber-Like Elasticity/Linear Viscoelasticity Dynamic Mechanical Behavior, Time-Temperature Superposition</td>
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<td>3</td>
<td>Stress-Strain Behavior</td>
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<td>4</td>
<td>Fracture Mechanisms/Toughening Principles (I)</td>
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<tr>
<td>5</td>
<td>Fracture Mechanisms/Toughening Principles (II)</td>
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<td>6</td>
<td>Creep &amp; Fatigue Fracture</td>
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<td>7</td>
<td>Impact Fracture</td>
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<td>8</td>
<td>Mid-Term Exam (3/12)</td>
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<td>Spring Break</td>
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<td>10</td>
<td>3/24 Lab Demo on Fracture test; Composite Fracture</td>
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<td>11</td>
<td>Surface Deformation and Damage</td>
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<td>12</td>
<td>Polymer Nanocomposites; 4/16 Lab Demo on Polymer Scratch</td>
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<td>Polymer Nanocomposites; Nanotechnology Related Issues</td>
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<td>Final Exam</td>
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Americans with Disabilities Act (ADA)
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services in 701 West Campus Blvd, 1224 TAMU, College Station, Texas 77843-1224, or call 845-1637. For additional information, visit [http://disability.tamu.edu](http://disability.tamu.edu).

Academic Integrity
For additional information please visit: [http://aggiehonor.tamu.edu](http://aggiehonor.tamu.edu)

"An Aggie does not lie, cheat, or steal, or tolerate those who do."