

Application for a New Course v10.5

Course ID <i>Subject and Number</i>	ENGR 320
Date APPROVED	
Date DENIED	

I. Systems and Catalog Information Complete each item.

1	Course Developer	Raymond Smith
2	Course Teacher	Raymond Smith and/or Rich Jinkerson
3	Course Title	Material Science
4	Course Abbreviation (if title is over 30 characters)	ENGR 320
5	College	Arts and Science
6	Department	Engineering & Physics
7	Number of Credit Hours	3
8	Is the course Fixed Credit or Variable Credit?	Fixed
9	Is the course repeatable?	No
10	Maximum number of times course may be repeated	N/A
11	Maximum number of hours credit	3
12	Explanation for variable credit	N/A
13a	Course contact hours - LEC	3
13b	Course contact hours - Lab	
13c	Course contact hours - Practicum	
13d	Course contact hours - Seminar	
13e	Course contact hours - Studio	
13f	Course contact hours - Online	
13g	Course contact hours - Colloquium	
13h	Course contact hours - Field Experience	
13j	Course contact hours - Internship	
13k	Course contact hours - Research	
13m	Course contact hours - Workshop	
13n	Course contact hours - Other (specify)	
14	Instructor Workload	3
15	Grade Mode (check all appropriate):	☒ Standard ☐ Credit/No Credit (undergrad only)
16	Maximum Enrollment	40
17	Catalog Description (50 words or less)	Application of material science information in applying engineering materials to the design of components. Evaluating, interpreting, and application of industry standards for materials such as American Society for Testing Materials

		(ASTM), American Society of Mechanical Engineers (ASME), Society of Automotive Engineers (SAE), American Petroleum Engineers (API), Deutsches Institut für Normung (DIN), and others.
18	List any prerequisites (course/s, test scores, class standing, major, etc.)	Credit for MATH 185 or placement into MATH 186 or 286 and Chemistry 131/133
19	List any co-requisites	N/A
20	If the course is cross listed, specify the Course ID(s) MUST have signature in Section V off all Department Chairs	N/A
21	Does this course have any special student costs? Yes/No <i>Attach a <u>completed</u> "Request to Add or Change Course Fees" form. Describe in section IV-F.</i>	No
22a	How often will it be offered? Fall	Offered
22b	How often will it be offered? Spring	As needed
22c	How often will it be offered? Summer	As needed
23	Frequency? All, odd, or even years?	All
24	First semester this course will be offered <i>New courses may not be taught under their approved course ID until they appear in the catalog, therefore, no earlier than the coming fall.</i>	Fall 2016
25	List course/s that should be deleted, include the last semester for course/s being deleted <i>A course cannot be deleted when it is a requirement in a degree plan in any department.</i>	N/A
26	Is this course required for a degree/s? Yes/No <i>If "Yes," attach a revised degree plan(s) reflecting the placement of the new course.</i>	This course is an elective option for students interested in mechanical engineering topics. All engineering students must select 14 hours of engineering electives to complete their degree.
27	Should the addition of this course be retroactively applied to the degree plan it supports? Yes/no and explain	No
28	Has this course been offered as a Special Topics course? Yes/No <i>If "Yes," specify the Course ID and enrollment for each term it was taught.</i> <i>(Note: New courses are NOT required to be taught as Special Topics courses prior to being approved. However, courses may be taught once as Special Topics before it is proposed. See the Course Descriptions section of the Catalog for details.)</i>	No

29	List any courses in which content overlaps the proposed course. (Course ID and Name) <i>Attach statement from instructor/dept chair of existing course justifying the new offering in Section IV-D.</i>	N/A
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II. Curriculum

1	Degree Plan Explanation of how this course affects degree requirements.	This course is part of the Mechanical Engineering course that are part of the required engineering elective hours.
2	Justification State the justification for adding this course to the current curriculum. Represent the need.	The present degree plan does not address the Fundamentals of Engineering Exam (FE) section on Material Science. This course will better prepare the student for the section on Material Science which will be tested on the FE.

III. Course Design

1. Audience and Course Goal

1	Describe the intended audience, including prerequisite skills.	Engineering majors and intended to be completed during their Sophomore or Junior year.
2	State the overarching course goal(s) in performance terms.	3(a) an ability to apply knowledge of mathematics, science, and engineering 3(e) an ability to identify, formulate, and solve engineering problems necessary for engineering practice 3 (i) a recognition of the need for, and an ability to engage in life-long learning

2. Competencies and Measurements

ABET Learning Objectives	Competencies	Measurement
3(a) an ability to apply knowledge of mathematics, science, and engineering	Students will: Apply engineering material properties to	Homework, quizzes, and exams

	design components Evaluate, interpret, and the application of industry standards for materials.	
3(e) an ability to identify, formulate, and solve engineering problems necessary for engineering practice	Students will create, analyze, and interpret effective spreadsheet models in Excel.	Homework and reports.
3 (i) a recognition of the need for, and an ability to engage in life-long learning	Students will be exposed to the need to stay current and active in industry specific material specification through engineering societies and industry associations.	Reports.

3. Text and Resources

1. Give the full publication information of the textbook/s and other required resources and outside readings. **Required Text**

The required text for this course is

Title Materials Science
 Authors R. S. Khurmi, R. S. Sedha
 Publisher S. Chand, 2010
 ISBN 8121901464, 9788121901468

Reference Text(s):

- Practical Data for Metallurgists Timken Steel
<http://www.timkensteel.com/~media/Files/Practical-Data-For-Metallurgists-TimkenSteel.ashx>
- Machinery's Handbook 27th Edition, Industrial Press

2. For **combined undergraduate/graduate** courses, make two lists:

- full publication information; label **Undergraduate**.
- full publication information; label **Graduate**. Indicate number of pages required.

IV. Supporting Documentation

Supporting documents must accompany proposal prior to preliminary approval by chair and dean.

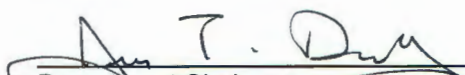
1	Library — Submit new course application and syllabus to the Dean of the Library. Consult with the director and establish a deadline for completion of the library report. Attach the signed copy of the Library report.
2	Instructional Design — The application and syllabus must be reviewed by the Adams Center. Attach a copy of the Adams Center Review Letter.
3	Content Overlap — Include one document for each course you listed in Section I-I. Attach statement from instructor/dept chair of existing course justifying the new offering.
4	Departmental Resources — List the resources that support the course and are available only through the department, if applicable. Attach the list of the holdings and the location/s.
5	Resources — List resources (other than library or departmental resources) that are needed to support this course (computers, lab equipment, other technology, etc.). Attach a complete list of all items and indicate possible sources or estimated cost of each. List the sources of any needed funds.
6	Expenses — List additional expenses needed to implement this course (full-time or part-time faculty, graduate or lab assistants, student employees, travel, special student costs, room renovation, storage facility, etc.). Attach a complete list of all items, the estimated cost of each and the source of the funds.
7	Justification — Attach all documents referred to in Section II-2
8	Syllabus — Attach the syllabus for the course based upon the anticipated first-semester offering.
9	Provide documentation for all additional attachments here

V. Preliminary Approvals

All supporting documentation has been assembled and attached to this application. I believe this course is ready to be presented to appropriate councils. We have a plan to fund this new course.

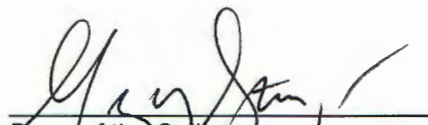
Course Number and Name ENGR 320 Material Science

Primary Department



Department Chair
4/21/2015

Date



Dean of the College

Date

Cross-listing Department *Add more lines if multiple departments are cross-listing*

Department Chair

Date

Dean of the College

Date

Cross-listing Department *Add more lines if multiple departments are cross-listing*

Department Chair

Date

Dean of the College

Date

VI. Actions *Place all actions on one page.*

Course ID: ENGR 320

Course Title: Material Science

1. College Academic Council: (for all courses)

Note: Insert additional lines for College Academic Council action for each college involved in cross-listed courses.

Approved ☒ Denied ☐ Latith Sharp Penz 4-23-15
College Dean or Director Date

Approved ☐ Denied ☐ _____
College Dean or Director Date

2. Graduate Council: (for graduate level courses)

Approved ☐ Denied ☐ _____
Dean of Graduate School Date

3. Teacher Education Council: (when applicable)

Approved ☐ Denied ☐ _____
TEC Chair Date

4. University General Education Council: (when applicable)

Approved ☐ Denied ☐ _____
Provost's designee Date

5. University Undergraduate Academic Council: (*undergraduate level courses*)

Approved ☐ Denied ☐ _____
Vice Provost Date

6. Academic Provost: (for all courses)

Approved ☐ Denied ☐ _____
Provost Date

7. President of the University: (for all courses)

Approved ☐ Denied ☐ _____
President Date

Attach notes, comments, or conditions from appropriate councils: