

**UNDERGRADUATE COUNCIL**  
**Request for Change(s)**

Originating unit requesting change \_\_\_\_\_ TCU Energy Institute \_\_\_\_\_

Type of Change requested:

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Course number(s)   | <input type="checkbox"/> Course prerequisite(s) | <input type="checkbox"/> Program title                   |
| <input type="checkbox"/> Course title       | <input type="checkbox"/> Drop course(s)         | <input type="checkbox"/> Program description             |
| <input type="checkbox"/> Course description | <input type="checkbox"/> Drop program(s)        | <input checked="" type="checkbox"/> Program requirements |

Semester and year change(s) take effect: \_\_\_\_\_ Fall 2021 \_\_\_\_\_

Appropriate computer abbreviation if  
course title is more than 30 spaces: \_\_\_\_\_

Briefly summarize the change requested:

(1) add six existing courses and drop three courses to the course list for the ENTM minor (2)  
make a minor edit to the wording for Computer Science courses.

Catalog copy

Present catalog copy (paste-up from  
catalog is acceptable.

Proposed change(s). (Include exact catalog  
copy as desired. Underline changes)

Present catalog copy:

## Energy Technology & Management Minor

### Requirements

The program of study requires 18 semester hours, with a grade of C or better, selected from the options below:

#### Business

<u>MANA 30653</u>	Survey of Management	3
<u>MARK 30653</u>	Principles of Marketing	3
<u>ENTR 30773</u>	Entrepreneurship and Energy	3

#### Computer Science

<u>COSC 10503</u>	Introduction to Programming for Engineering and Science	3
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#### Economics (only one 10000 level course from this group)

<u>ECON 10223</u>	Introductory Microeconomics	3
<u>ECON 10233</u>	Introductory Macroeconomics	3
<u>ECON 30523</u>	Resource and Energy Economics	3

#### Engineering

<u>ENGR 10033</u>	Engineering Design and Graphics	3
<u>ENGR 40203</u>	Engineering Economic Analysis	3
<u>ENGR 40303</u>	Petroleum Industry Overview	3
<u>ENGR 30113</u>	Energy in Society	3
<u>ENGR 40213</u>	Sustainable Energy	3

#### Environmental Science

<u>ENSC 10143</u>	Contemporary Environmental Issues	3
<u>ENSC 40193</u>	Environmental Stewardship Seminar	3
<u>ENSC 50703</u>	Environmental Compliance	3
<u>ENSC 50523</u>	Introduction to Geographic Information Systems	3
<u>ENSC 50333</u>	Energy Development and Wildlife Conservation	3

#### Geology

<u>GEOL 10113</u>	Understanding the Earth	3
<u>GEOL 30233</u>	Rock Cycle	3
<u>GEOL 30363</u>	Introduction to Geospatial Technology	3
<u>GEOL 40970</u>	Special Problems	1-3
<u>GEOL 50563</u>	From Prospect to Production	3
<u>GEOL 50423</u>	Petroleum Geology	3
<u>GEOL 50523</u>	Introduction to Geographic Information Systems	3

## Physics

<u>PHYS 10503</u>	Energy	3
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## Energy Technology and Management

<u>ENTM 40970</u>	Directed Studies in Energy Technology and Management	1-3
<u>ENTM 40803</u>	Advanced Readings in Energy	3
<u>ENTM 40903</u>	Energy Internship	3

Proposed changes to catalog copy (additions are underlined):  
**Energy Technology & Management Minor**

## Requirements

The program of study requires 18 semester hours, with a grade of C or better, selected from the options below:

### Business

MANA 30653	Survey of Management	3
MARK 30653	Principles of Marketing	3
ENTR 30773	Entrepreneurship and Energy	3

### Computer Science (only one course from this group)

COSC 10503	Introduction to Programming for Engineering and Science	3
<u>COSC 10603</u>	<u>Introduction to Python for Data Analytics</u>	<u>3</u>
<u>COSC 10403</u>	<u>Introduction to Programming</u>	<u>3</u>

### Economics (only one 10000 level course from this group)

ECON 10223	Introductory Microeconomics	3
ECON 10233	Introductory Macroeconomics	3
ECON 30523	Resource and Energy Economics	3

### Engineering

ENGR 10033	Engineering Design and Graphics	3
ENGR 40203	Engineering Economic Analysis	3
ENGR 40303	Petroleum Industry Overview	3
ENGR 30113	Energy in Society	3
ENGR 40213	Sustainable Energy	3
<u>ENGR 40223</u>	<u>Petroleum Reservoir Management</u>	<u>3</u>

### Environmental Science

ENSC 10143	Contemporary Environmental Issues	3
<u>ENSC 30143</u>	<u>Introduction to Sustainability Science</u>	<u>3</u>
<del>ENSC 40193</del>	<del>Environmental Stewardship Seminar</del>	<del>3</del>
ENSC 50703	Environmental Compliance	3
ENSC 50523	Introduction to Geographic Information Systems	3
ENSC 50333	Energy Development and Wildlife Conservation	3

### Geology

GEOL 10113	Understanding the Earth	3
<del>GEOL 30233</del>	<del>Rock Cycle</del>	<del>3</del>
GEOL 30363	Introduction to Geospatial Technology	3

<del>GEOL 40970</del>	<del>Special Problems</del>	<del>1-3</del>
<u>GEOL 40423</u>	<u>Petroleum Engineering</u>	<u>3</u>
GEOL 50563	From Prospect to Production	3
GEOL 50423	Petroleum Geology	3
GEOL 50523	Introduction to Geographic Information Systems	3

### Physics

PHYS 10503	Energy	3
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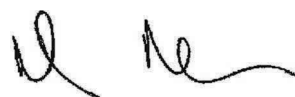
### Energy Technology and Management

ENTM 40970	Directed Studies in Energy Technology and Management	1-3
ENTM 40803	Advanced Readings in Energy	3
ENTM 40903	Energy Internship	3

### Geography

<u>GEOG 30323</u>	<u>Data Analysis and Visualization</u>	<u>3</u>
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1. What is the justification for the change(s) requested?  
(1) To capture recently added courses on energy and technology into the minor (2) to strengthen and add breadth to the courses that fulfill the requirements of the minor
  
2. If applicable, explain how the change(s) will affect the current program outcomes and assessment mechanisms.  
NA
  
3. **Faculty Resources:** How will the unit provide faculty support for this change and any other impact this change may have on other current departmental listings.  
These changes should have no impact on other departmental listings
  
4. **Educational Resources:** Will this change require additional resources not currently available (e.g. space, equipment, library, other)?  
If yes, list additional resources needed. ☐ YES  
☒ NO
  
5. If this change affects other units of the University, include a statement signed by the chairperson(s) of the affected unit(s).  
attached
  
6. If cross-listed, provide evidence of approval by all curriculum committees appropriate to both the originating and cross-listed units.



Approval signature of chairperson of originating unit

**From:** Denne, Richard R.DENNE@tcu.edu  
**Subject:** FW: class additions to the ENTM minor  
**Date:** October 26, 2020 at 1:14 PM  
**To:** Rinewalt, Dick d.rinewalt@tcu.edu  
**Cc:** Dolce, Susan s.dolce@tcu.edu

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RD

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**From:** Payne, Donnell  
**Sent:** Monday, October 26, 2020 11:02 AM  
**To:** Denne, Richard <R.DENNE@tcu.edu>  
**Subject:** Re: class additions to the ENTM minor

Yes, sure. Let me know if you need anything.

Donnell

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**From:** Denne, Richard  
**Sent:** Monday, October 26, 2020 11:00 AM  
**To:** Payne, Donnell  
**Subject:** class additions to the ENTM minor

Hi Donnell,

We are re-evaluating the classes in the Energy and Technology Management minor, and would like to add the following COSC classes to the minor:

COSC 10603      Introduction to Python for Data Analytics  
COSC 10403      Introduction to Programming

A similar class, COSC 10503, is already part of the minor and occasionally I have had to grant exceptions to students taking one of the other two courses. We will only allow a student to count one of these courses towards the minor

Do I have your permission to add these two courses to the ENTM minor?

Thanks,

Dr. Richard Denne  
Hunter Enis Chair in Petroleum Geology and Director  
TCU Energy Institute  
Texas Christian University  
TCU Box 298965  
Fort Worth, TX 76129  
Office 817-257-4423  
[r.denne@tcu.edu](mailto:r.denne@tcu.edu)

**From:** Denne, Richard R.DENNE@tcu.edu  
**Subject:** FW: Changes to ENTM minor - 2nd try  
**Date:** October 26, 2020 at 4:06 PM  
**To:** Rinewalt, Dick d.rinewalt@tcu.edu  
**Cc:** Dolce, Susan s.dolce@tcu.edu

RD

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**From:** "Slattery, Michael" <m.slattery@tcu.edu>  
**Date:** Monday, October 26, 2020 at 2:55 PM  
**To:** Richard Denne <R.DENNE@tcu.edu>  
**Subject:** RE: Changes to ENTM minor - 2nd try

Indeed you do!

**Dr. Mike Slattery**

Professor and Chair: Department of Environmental Sciences  
Director: Institute for Environmental Studies  
PO Box 298830  
Texas Christian University  
Fort Worth, TX 76129  
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Fax: 817.257.7789  
Zoom Office: 947 5851 9204

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**From:** Denne, Richard  
**Sent:** Monday, October 26, 2020 2:25 PM  
**To:** Slattery, Michael <m.slattery@tcu.edu>  
**Subject:** Changes to ENTM minor - 2nd try

Mike,

We are re-evaluating the classes in the Energy and Technology Management minor, and would like to make the following changes to the minor that involve ENSC courses:

Drop: ENSC 40193      Environmental Stewardship Seminar  
Add: ENSC 30143      Introduction to Sustainability Science

The three other courses in the ENTM minor will remain (10143, 50523, 50333).

Do I have your permission to drop ENSC 40193 and add ENSC 30143 to the ENTM minor?

Thanks

Dr. Richard Denne

Hunter Enis Chair in Petroleum Geology and Director  
TCU Energy Institute  
Texas Christian University



TCU Box 298965  
Fort Worth, TX 76129  
Office 817-257-4423  
[r.denne@tcu.edu](mailto:r.denne@tcu.edu)

**From:** Denne, Richard R.DENNE@tcu.edu  
**Subject:** FW: Changes to the ENTM minor  
**Date:** October 26, 2020 at 1:13 PM  
**To:** Rinewalt, Dick d.rinewalt@tcu.edu  
**Cc:** Dolce, Susan s.dolce@tcu.edu

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RD

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**From:** Weis, Stephen  
**Sent:** Monday, October 26, 2020 11:17 AM  
**To:** Denne, Richard <R.DENNE@tcu.edu>  
**Subject:** Re: Changes to the ENTM minor

Hi Richard,

Yes – that sounds like a good idea.

Thanks,  
Steve

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**From:** "Denne, Richard" <R.DENNE@tcu.edu>  
**Date:** Monday, October 26, 2020 at 11:13 AM  
**To:** Stephen Weis <s.weis@tcu.edu>  
**Subject:** Changes to the ENTM minor

Hi Steve,

We are re-evaluating the classes in the Energy and Technology Management minor, and would like to make the following addition to the minor that involves an ENGR course:

Add: ENGR 40223                      Petroleum Reservoir Management

Do I have your permission to add ENGR 40223 to the ENTM minor?

Thanks,

Dr. Richard Denne  
Hunter Enis Chair in Petroleum Geology and Director  
TCU Energy Institute  
Texas Christian University  
TCU Box 298965  
Fort Worth, TX 76129  
Office 817-257-4423  
[r.denne@tcu.edu](mailto:r.denne@tcu.edu)