Minutes of the Campus Curricula Committee Meeting
February 2, 2016
12:30 p.m., Room 106B Parker Hall

Attendees: Kaylon Buckner, Barry Flachsbart, Petra DeWitt, Kristy Giacomelli, Gearoid MacSithigh, Ilene Morgan, Stephen Raper, and Thomas Schuman.

The following curriculum forms were discussed and approved:

Course Change Forms:

File #480.1
File #2169
File #2167.1
File #485.1
File #1518.1
File #624.1
File #4279
File #4282
File #1038.5
File #862.4
File #2072.1
File #863.1
File #1607.4
File #4286
File #2558.1
File #4290
File #1392.3
File #2454.6
File #557.1
File #467.1
File #1148.1
File #1529.1
File #2219.1
File #2208.1
File# 2217.1
File #2207.1
File #1594.1
File #4288
File #4294
File #1137.1
File #2166.1
File #1519.1
File #613.1
File #1143.1
File #4280
File #436.1
File #4281
File #4285
File #4283
File #792.1
File #4284
File #797.1
File #4291
File #4292
File #2329.7
File #2582.2
File #2549.1
File #4278
File #1056.1
File #1597.1
File #1595.1
File #2216.1
File #1161.1
File #2202.1
File #4287
File #4289
File #2215.1
File #4295

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File #916.1
File #921.1
File #1951.1
File #4293
File #730.1
File #929.1

Degree Change Forms:

File #148.20
File #237.19
File #75.16
File #150.30
File #90.18

Experimental Course Forms:

File #4296
File #4270

The meeting adjourned at 1:50 p.m.

Ilene H. Morgan, Chair
Missouri S&T Campus Curricula Committee

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Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 01/07/16 11:36 am

Viewing: **CER ENG 5210 : Biomaterials I**

File: 480.1

Last edit: 01/08/16 6:50 am

Changes proposed by: smiller

Other Courses referencing this course	In The Catalog Description: BIO SCI 5210 : Biomaterials I CHEM ENG 5200 : Biomaterials I MET ENG 5210 : Biomaterials I
Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Ceramic Engineering (CER ENG)
Course Number	5210
Title	Biomaterials I
Abbreviated Course Title	Biomaterials I

Catalog Description

This course will introduce senior undergraduate students to a broad array of topics in biomaterials, including ceramic, metallic, and polymeric biomaterials for in vivo use, basic concepts related to cells and tissues, host reactions to biomaterials, biomaterials-tissue compatibility, and degradation of biomaterials.

Prerequisites

Senior undergraduate standing.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for	No				

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 01/07/16 6:32 pm Richard Brow (brow): Approved for RMATSENG Chair
2. 01/08/16 6:50 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:13 pm sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:28 am Kaylon Buckner (kleb6b):

Majors	
Elective for Majors	No

Approved for Pending CCC Agenda post
5. 02/02/16 1:53 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:32 pm imorgan: Approved for Campus Curricula Committee Chair

Justification for change:
Renamed MS&E 5310

Semesters previously offered as an experimental course

Co-Listed Courses:	BIO SCI 5210 - Biomaterials I MET ENG 5210 - Biomaterials I CHEM ENG 5200 - Biomaterials I

Course Reviewer Comments

Key: 480
Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/22/15 9:56 am

Viewing: **CER ENG 5217 : Electrical Ceramics**

File: 1137.1

Last edit: 01/15/16 8:54 am

Changes proposed by: eddings

Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Ceramic Engineering (CER ENG)
Course Number	5217
Title	Electrical Ceramics
Abbreviated Course Title	Electrical Ceramics

Catalog Description

The application and design of ceramics for the electrical industry is discussed. Particular emphasis is placed on how ceramic materials are altered to meet the needs of a specific application. The laboratory acquaints the student with measurements which are used for electrical property evaluation.

Prerequisites

Cer Eng 4210.

Field Trip Statement

Credit Hours	LEC: 2	LAB: 1	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

Justification for

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 10:49 am
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 10:56 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:13 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:29 am

change:

The MSE faculty have determined that the course has not been taught recently and is no longer need in the curriculum

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 1137

Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 1:53 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:02 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/22/15 9:59 am

Viewing: **CER ENG 5227 : Thermomechanical/Electrical/Optical Properties Lab**

File: 2169.1

Last edit: 01/08/16 6:54 am

Changes proposed by: eddings

Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Ceramic Engineering (CER ENG)
Course Number	5227
Title	Thermomechanical/Electrical/Optical Properties Lab
Abbreviated Course Title	Thermomch/Elec/Opt Lab

Catalog Description

Laboratory consisting of three separate modules of experiments for the characterization of the thermomechanical, electrical and optical properties of ceramics. The student will choose one of the three modules.

Prerequisites

Civ Eng 2210 or Cer Eng 4210.

Field Trip Statement

Credit Hours	LEC: 0	LAB: 1	IND: 0	RSD: 0	Total: 1
Required for Majors	No				
Elective for Majors	No				

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 10:49 am
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 10:56 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:13 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:30 am

Justification for change:

The MSE faculty have determined that the course has not been taught recently and is no longer need in the curriculum

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 1:53 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:02 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 2169

Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/22/15 9:59 am

Viewing: **CER ENG 5317 : Organic Additives In Ceramic Processing**

File: 2166.1

Last edit: 01/08/16 6:54 am

Changes proposed by: eddings

Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Ceramic Engineering (CER ENG)
Course Number	5317
Title	Organic Additives In Ceramic Processing
Abbreviated Course Title	Org Additives Cer Proces

Catalog Description

Basic chemistry, structure and properties or organic additives used in the ceramics industry; solvents, binders, plasticizers, dispersants. Use of organic additives in ceramic processing.

Prerequisites

Cer Eng 3210 and 3315.

Field Trip Statement

Credit Hours	LEC: 2	LAB: 0	IND: 0	RSD: 0	Total: 2
Required for Majors	No				
Elective for Majors	No				

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 10:49 am
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 10:56 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:13 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:31 am

Justification for change:

The MSE faculty have determined that the course has not been taught recently and is no longer need in the curriculum

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 1:53 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:02 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 2166

Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/22/15 10:00 am

Viewing: **CER ENG 5320 : Microelectronic Ceramic Processing**

File: 2167.1

Last edit: 01/08/16 6:54 am

Changes proposed by: eddings

Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Ceramic Engineering (CER ENG)
Course Number	5320
Title	Microelectronic Ceramic Processing
Abbreviated Course Title	Microelectronic Cer Proc

Catalog Description

Materials, processing and design of microelectronic ceramics are covered. Introduction to devices, triaxial ceramics, high aluminas, tape fabrication, metallizations, thick film processing and glass-to-metal seals.

Prerequisites

Cer Eng 3210 & 3325.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

Justification for change:

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 10:50 am
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 10:57 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:13 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:32 am

The MSE faculty have determined that the course has not been taught recently and is no longer need in the curriculum

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 2167

Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 1:53 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:02 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/22/15 10:00 am

Viewing: **CER ENG 5410 : Advanced Characterization Of Inorganic Solids**

File: 1519.1

Last edit: 01/08/16 6:54 am

Changes proposed by: eddings

Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Ceramic Engineering (CER ENG)
Course Number	5410
Title	Advanced Characterization Of Inorganic Solids
Abbreviated Course Title	Char Of Inorg Solids

Catalog Description

Problems or readings on specific subjects or projects in the department. Consent of instructor required.

Prerequisites

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

Justification for

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 10:50 am
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 10:57 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:13 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:32 am

change:

The MSE faculty have determined that the course has not been taught recently and is no longer need in the curriculum

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 1519

Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 1:53 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:03 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 01/07/16 11:35 am

Viewing: **CER ENG 6210 : Biomaterials II**

File: 485.1

Last edit: 01/08/16 6:50 am

Changes proposed by: smiller

Other Courses referencing this course	In The Catalog Description: BIO SCI 6210 : Biomaterials II CHEM ENG 6300 : Biomaterials II MET ENG 6210 : Biomaterials II
Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Ceramic Engineering (CER ENG)
Course Number	6210
Title	Biomaterials II
Abbreviated Course Title	Biomaterials II

Catalog Description

This course will introduce graduate students to a broad array of topics in biomaterials, including ceramic, metallic, and polymeric biomaterials for in vivo use, basic concepts related to cells and tissues, host reactions to biomaterials, biomaterials-tissue compatibility, and degradation of biomaterials. A term paper and oral presentation are required.

Prerequisites

Graduate Standing.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 01/07/16 6:32 pm Richard Brow (brow): Approved for RMATSENG Chair
2. 01/08/16 6:50 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:14 pm sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:33 am Kaylon Buckner (kleb6b):

Required for Majors	No
Elective for Majors	No

Justification for change:
Renamed MS&E 6310

Semesters previously offered as an experimental course

Co-Listed Courses:	BIO SCI 6210 - Biomaterials II MET ENG 6210 - Biomaterials II CHEM ENG 6300 - Biomaterials II

Course Reviewer Comments

Approved for Pending CCC Agenda post

5. 02/02/16 1:53 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:32 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 485
Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/22/15 10:00 am

Viewing: **CER ENG 6250 : Electroceramic Composite**

File: 613.1

Last edit: 01/08/16 6:54 am

Changes proposed by: eddings

Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Ceramic Engineering (CER ENG)
Course Number	6250
Title	Electroceramic Composite
Abbreviated Course Title	Electroceramic Composite

Catalog Description

The objective of this course is to give the student an understanding of the structure--property relationships exhibited by electroceramic composites. The composites of interest cover a wide range of electrical phenomena including composite dielectrics, piezoelectrics, conductors, magnets, and optics.

Prerequisites

Cer Eng 4210.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

Justification for

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 10:50 am
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 10:57 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:14 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:34 am

change:

The MSE faculty have determined that the course has not been taught recently and is no longer need in the curriculum

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 613

Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 1:53 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:03 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

Date Submitted: 01/14/16 7:38 am

Viewing: CER ENG 6260 ~~5240~~ : Advanced Electrical Properties of ~~Of~~ Ceramics

File: 1518.1

Last edit: 01/14/16 12:28 pm

Changes proposed by: eddings

Requested Effective Change Date	Fall **2016** ~~2014~~
Department	Materials Science & Engineering
Discipline	Ceramic Engineering (CER ENG)
Course Number	**6260** ~~5240~~
Title	Advanced Electrical Properties **of** ~~Of~~ Ceramics
Abbreviated Course Title	Adv Elec Properties of Cer

Catalog Description

The application of ceramic chemistry and physics to the development and evaluation of electronic, dielectric, magnetic, and optical properties. Emphasis is placed on the relationships between properties and crystal structure, defects, grain boundary nature, and microstructure.

Prerequisites

Grade of "C" or better in Physics 2305.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 1	IND: 0	RSD: 0	Total: 4
Required for Majors	No				
Elective for Majors	No				

Justification for change:

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 01/14/16 8:02 am Richard Brow (brow): Approved for RMATSENG Chair
2. 01/14/16 8:19 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:07 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:29 pm Kaylon Buckner (kleb6b):

This should be a graduate level only course.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 1518

Approved for Pending CCC Agenda post

5. 02/02/16 1:53 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:35 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/22/15 10:01 am

Viewing: **CER ENG 6287 : Crystal Anisotropy**

File: 1143.1

Last edit: 01/08/16 6:54 am

Changes proposed by: eddings

Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Ceramic Engineering (CER ENG)
Course Number	6287
Title	Crystal Anisotropy
Abbreviated Course Title	Crystal Anisotropy

Catalog Description

The objective of this course is to give the student an understanding of crystal structure-physical property relationships. The relationship between symmetry and tensor representation will be examined, and then related to the mechanical, electrical and optical properties exhibited by the materials.

Prerequisites

Cer Eng 2110.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

Justification for

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 10:50 am
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 10:57 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:14 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:35 am

change:
The MSE faculty have determined that the course has not been taught recently and is no longer need in the curriculum

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 1143

Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 02/02/16 1:54 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:03 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/22/15 10:01 am

Viewing: **CER ENG 6297 : Interfacial Phenomena**

File: 624.1

Last edit: 01/08/16 6:54 am

Changes proposed by: eddings

Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Ceramic Engineering (CER ENG)
Course Number	6297
Title	Interfacial Phenomena
Abbreviated Course Title	Interfacial Phenomena

Catalog Description

The nature and constitution of inorganic interfaces, surface processes and consequences, epitaxy, thermal grooving, UHV techniques, field emission-ionization and evaporation, surface models, adsorption and nucleation.

Prerequisites

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

Justification for change:

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 10:50 am
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 10:57 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:14 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:35 am

The MSE faculty have determined that the course has not been taught recently and is no longer need in the curriculum

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 624

Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 1:54 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:03 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 12/23/15 8:57 am

Viewing: **CHEM ENG 3101 : Fundamentals of Transport in Chemical and Biochemical Engineering**

File: 4280

Last edit: 01/13/16 3:20 pm

Changes proposed by: forcinit

Programs referencing this course	CH ENG-BS: Chemical Engineering BS
Requested Effective Change Date	Fall 2016
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	3101
Title	Fundamentals of Transport in Chemical and Biochemical Engineering
Abbreviated Course Title	Transport Phenomena

Catalog Description

This course covers the fundamentals of momentum, energy, and mass transport. Phenomenological mechanisms of molecular transport, fluid static, analysis of a fluid in motion laminar and turbulent flow are covered. The general differential equations for momentum, energy and mass transfer are presented and solved for a variety of chemical engineering problems.

Prerequisites

Math 3304 and Chem Eng 2110. Admitted to the Chemical Engineering Program.

Field Trip Statement

Credit Hours	LEC: 4	LAB: 0	IND: 0	RSD: 0	Total: 4

In Workflow

1. **RCHEMENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/23/15 1:18 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:31 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:06 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:29 pm Kaylon Buckner (kleb6b): Approved for

Required for Majors	Yes
Elective for Majors	No

Justification for new course:

See attached DC form

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments	**sraper (01/13/16 3:20 pm):** Added a period at the end of the prerequisite statement.

Pending CCC Agenda post

5. 02/02/16 1:54 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 10:26 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 4280

Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 12/23/15 8:57 am

Viewing: **CHEM ENG 3111 : Numerical Computing in Chemical and Biochemical Engineering**

File: 4279

Last edit: 02/02/16 10:30 pm

Changes proposed by: forcinit

Programs referencing this course	CH ENG-BS: Chemical Engineering BS
Requested Effective Change Date	Fall 2016
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	3111
Title	Numerical Computing in Chemical and Biochemical Engineering
Abbreviated Course Title	Numerical Computing

Catalog Description

The students are introduced to the concepts of engineering problem formulation, model building, and multi scale models. Matlab, spreadsheet and polymath computing are used to solve chemical engineering problems involving systems of linear and non linear algebraic equations, and ordinary and partial differential equations.

Prerequisites

Math 3304 and both Comp Sci 1971 and Comp Sci 1981. Admitted to the Chemical Engineering Program.

Field Trip Statement

In Workflow

1. RCHEMENG Chair
2. CCC Secretary
3. Engineering DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/23/15 1:19 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:32 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:06 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:31 pm Kaylon Buckner (kleb6b): Approved for

Credit Hours	LEC: 2	LAB: 1	IND: 0	RSD: 0	Total: 3
Required for Majors	Yes				
Elective for Majors	No				

Justification for new course:
See the attached DC form

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

sraper (01/13/16 3:30 pm): Changed "Mathlab" to Matlab.
imorgan (02/02/16 10:29 pm): CCC changed Comp Sci 1970 and 1980 to 1971 and 1981 because the Fortran courses 1970 and 1980 are not currently being offered.

Pending CCC Agenda post
5. 02/02/16 1:55 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 10:31 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 4279
Preview Bridge

Course Inventory Change Request

Date Submitted: 12/23/15 8:58 am

Viewing: **CHEM ENG 3120 : Chemical Engineering Thermodynamics II**

File: 436.1

Last edit: 12/23/15 1:32 pm

Changes proposed by: forcinit

Programs referencing this course	CH ENG-BS: Chemical Engineering BS EV ENG-BS: Environmental Engineering BS
Other Courses referencing this course	In The Prerequisites: CHEM ENG 3130 : Staged Mass Transfer CHEM ENG 3160 : Molecular Chemical Engineering CHEM ENG 3200 : Biochemical Separations
Requested Effective Change Date	**Fall** ~~Spring~~ 2016
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	3120
Title	Chemical Engineering Thermodynamics II
Abbreviated Course Title	Chem Engr Thermo II

Catalog Description

Physical, chemical and reaction equilibrium. Study of the thermophysical relationships of multicomponent, multiphase equilibrium. Application of equilibrium relationships to the design and operation of chemical mixers, separators and reactors.

Prerequisites

Grade of "C" or better in Chem Eng 2100 and Chem Eng 2110; Chem Eng majors only.

Field Trip Statement

In Workflow

1. **RCHEMENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/23/15 1:19 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:32 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:06 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:32 pm Kaylon Buckner (kleb6b): Approved for

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	Yes ~~No~~				
Elective for Majors	No				

Justification for change:

This is a required course for Chem. Eng. majors

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Pending CCC Agenda post

5. 02/02/16 1:56 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 10:31 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 436

Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 12/23/15 9:00 am

Viewing: **CHEM ENG 3131 : Separations in Chemical and Biochemical Engineering**

File: 4282

Last edit: 12/23/15 1:35 pm

Changes proposed by: forcinit

Programs referencing this course	CH ENG-BS: Chemical Engineering BS
Requested Effective Change Date	Fall 2016
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	3131
Title	Separations in Chemical and Biochemical Engineering
Abbreviated Course Title	Separations

Catalog Description

Flash and column distillation. McCabe-Thiele method, plate efficiencies. Azeotropes. Batch distillation. Absorption and stripping. Washing and leaching.

Prerequisites

Chem Eng 3101 and Chem Eng 3120. Admitted to the Chemical Engineering Program.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	Yes				

In Workflow

1. **RCHEMENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/23/15 1:19 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:35 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:06 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:33 pm Kaylon Buckner (kleb6b): Approved for

Elective for Majors	No

Justification for new course:

See attached DC form.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Pending CCC Agenda post

5. 02/02/16 1:56 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 10:32 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 4282

Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 12/23/15 9:00 am

Viewing: **CHEM ENG 3141 : Process Operations in Chemical and Biochemical Engineering**

File: 4281

Last edit: 12/23/15 1:35 pm

Changes proposed by: forcinit

Programs referencing this course	CH ENG-BS: Chemical Engineering BS
Requested Effective Change Date	Fall 2016
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	3141
Title	Process Operations in Chemical and Biochemical Engineering
Abbreviated Course Title	Process Operations

Catalog Description

Design and selection of pumps, fans, compressors, valves, and ejectors. Design and selection of heat exchangers, condensers and reboilers. Design of mixing equipment, sterilizers, sedimentation vessels, centrifuges, and filtration and ultrafiltration units.

Prerequisites

Chem Eng 3101 and Chem Eng 3120. Admitted to the Chemical Engineering Program.

Field Trip Statement

Credit Hours	LEC: 2	LAB: 0	IND: 0	RSD: 0	Total: 2
Required for Majors	Yes				

In Workflow

1. RCHEMENG Chair
2. CCC Secretary
3. Engineering DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/23/15 1:19 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:35 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:06 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:36 pm Kaylon Buckner (kleb6b): Approved for

Elective for Majors	No
Justification for new course:	See attached DC form
Semesters previously offered as an experimental course	
Co-Listed Courses:	
Course Reviewer Comments	

Pending CCC Agenda post

5. 02/02/16 1:56 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 10:32 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 4281
Preview Bridge

Course Inventory Change Request

Date Submitted: 12/23/15 8:59 am

Viewing: **CHEM ENG 3150 : Chemical Engineering Reactor Design**

File: 1038.5

Last approved: 06/29/15 3:50 am

Last edit: 02/02/16 1:58 pm

Changes proposed by: forcinit

Programs referencing this course	CH ENG-BS: Chemical Engineering BS
Other Courses referencing this course	In The Prerequisites: CHEM ENG 4097 : Chemical Process Design CHEM ENG 4130 : Chemical Engineering Laboratory II CHEM ENG 4140 : Chemical Process Safety CHEM ENG 4210 : Biochemical Reactors CHEM ENG 5110 : Intermediate Chemical Reactor Design CHEM ENG 5210 : Intermediate Biochemical Reactors
Requested Effective Change Date	**Fall** ~~Spring~~ 2016
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	3150
Title	Chemical Engineering Reactor Design
Abbreviated Course Title	Chem Engr Reactor Design

Catalog Description

The study of chemical reaction kinetics and their application to the design and operation of chemical and catalytic reactors.

Prerequisites

Preceded or accompanied by either Chem Eng 3140 or Chem Eng **3200 or preceded by both** ~~3200; admitted to~~ Chem Eng **3111 and Chem Eng 3101.** ~~program.~~ **Admitted**

In Workflow

1. **RCHEMENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/23/15 1:19 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:36 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:06 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:36 pm Kaylon Buckner (kleb6b): Approved for

to Chem Eng program.

Field Trip Statement					
Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	Yes				
Elective for Majors	No				

Justification for change:

The new prerequisites are needed because of the new proposed program (see attached DC form).

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Pending CCC Agenda post

5. 02/02/16 1:58 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 10:32 pm imorgan: Approved for Campus Curricula Committee Chair

History

1. Jun 29, 2015 by luksc (1038.1)

Key: 1038

Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 12/23/15 9:07 am

Viewing: **CHEM ENG 4091 : Process Design I**

File: 4285

Last edit: 02/02/16 1:59 pm

Changes proposed by: forcinit

Programs referencing this course	CH ENG-BS: Chemical Engineering BS
Requested Effective Change Date	Fall 2016
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	4091
Title	Process Design I
Abbreviated Course Title	Process Design I

Catalog Description

Economic analysis of a chemical process including capital requirements, operating costs, earnings, and profits. The economic balance is applied to chemical engineering operations and processes. Optimization and scheduling techniques are applied to process evaluation. Preliminary process design and use of simulations software.

Prerequisites

Either (Chem Eng 3150, Chem Eng 3131 and Chem Eng 3141) or (Chem Eng 3150 and preceded or accompanied by Chem Eng 5250).

Field Trip Statement

Credit Hours	LEC: 1	LAB: 2	IND: 0	RSD: 0	Total: 3
Required for	Yes				

In Workflow

1. RCHEMENG Chair
2. CCC Secretary
3. Engineering DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/23/15 1:19 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:37 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:06 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:37 pm Kaylon Buckner (kleb6b): Approved for

Majors

Elective for Majors: No

Justification for new course:
See attached DC form

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Pending CCC Agenda post

5. 02/02/16 1:59 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 10:33 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 4285

Preview Bridge

Course Inventory Change Request

Date Submitted: 12/23/15 9:08 am

Viewing: CHEM ENG 4097 : Chemical Process Design

File: 862.4

Last approved: 05/04/15 3:20 am

Last edit: 02/02/16 2:01 pm

Changes proposed by: forcinit

Programs referencing this course	CH ENG-BS: Chemical Engineering BS
Requested Effective Change Date	Fall **2016** ~~2015~~
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	4097
Title	Chemical Process Design
Abbreviated Course Title	Process Design

Catalog Description

Engineering principles involved in the design and layout of chemical process equipment. Material and energy balances, equipment selection and design, and preconstruction cost estimation are performed for a capstone design project. Communication emphasized course.

Prerequisites

Chem Eng 3130 and Chem Eng 3150; preceded or accompanied by Chem Eng 4110 and **either** Chem Eng **4096 or Chem Eng 4091.** ~~4096.~~

Field Trip Statement

Credit Hours	LEC: 1	LAB: 2	IND: 0	RSD: 0	Total: 3
Required for Majors	Yes				

In Workflow

1. **RCHEMENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/23/15 1:20 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:38 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:06 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:38 pm Kaylon Buckner (kleb6b): Approved for

Elective for Majors	No

Justification for change:

The new prerequisite is needed to reflect the proposed new curriculum (See attached DC form).

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

kleb6b (12/23/15 1:38 pm): Might want to clarify this prereq?

Pending CCC Agenda post

5. 02/02/16 2:01 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 10:38 pm imorgan: Approved for Campus Curricula Committee Chair

History

1. May 4, 2015 by luksc (862.1)

Key: 862

Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 12/23/15 9:06 am

Viewing: **CHEM ENG 4101 : Chemical Engineering Laboratory I**

File: 4283

Last edit: 02/02/16 10:39 pm

Changes proposed by: forcinit

Programs referencing this course	CH ENG-BS: Chemical Engineering BS
Requested Effective Change Date	Fall 2016
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	4101
Title	Chemical Engineering Laboratory I
Abbreviated Course Title	Chem Eng Lab I

Catalog Description

Experiments associated with unit operations involving fluid flow and heat transfer. Principles of data and uncertainty analysis are introduced with emphasis on model building. Communication skills are stressed. This is a communication emphasized course

Prerequisites

Chem Eng 3141.

Field Trip Statement

Credit Hours	LEC: 1	LAB: 2	IND: 0	RSD: 0	Total: 3
Required for Majors	Yes				

In Workflow

1. RCHEMENG Chair
2. CCC Secretary
3. Engineering DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/23/15 1:20 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:38 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:06 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:39 pm Kaylon Buckner (kleb6b): Approved for

Elective for Majors	No

Justification for new course:

see attached DC form. There is a current Laboratory 1 with only 2 cr. hrs. That course will continue being offered for the students entering the program before Fall 2016.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments	**imorgan (02/02/16 10:39 pm):** CCC changed abbreviated course titles for Chem Eng Lab I and II to be consistent.

Pending CCC Agenda post

5. 02/02/16 2:01 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 10:39 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 4283

Preview Bridge

Course Inventory Change Request

Date Submitted: 12/23/15 9:03 am

Viewing: **CHEM ENG 4110 : Chemical Engineering Process Dynamics And Control**

File: 2072.1

Last edit: 02/02/16 2:02 pm

Changes proposed by: forcinit

Programs referencing this course	AUTOENG-MI: Minor in Automation Engineering CH ENG-BS: Chemical Engineering BS
Other Courses referencing this course	In The Prerequisites: CHEM ENG 4097 : Chemical Process Design CHEM ENG 4120 : Process Dynamics And Control Laboratory CHEM ENG 5190 : Plantwide Process Control ELEC ENG 5350 : Plantwide Process Control
Requested Effective Change Date	Fall **2016** ~~2014~~
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	4110
Title	Chemical Engineering Process Dynamics And Control
Abbreviated Course Title	Process Control

Catalog Description

Study of the dynamics of chemical processes and the instruments and software used to measure and control temperature, pressure, liquid level, flow, and composition. Generally offered fall semester only.

Prerequisites

Preceded or accompanied by any one of Chem Eng 4100 or Chem Eng 4130 or Chem Eng **4200; or preceded by Chem Eng 3150, Chem Eng 3131 and Chem Eng 3141; or preceded by Chem Eng 3150 and preceded or accompanied by Chem Eng 5250.** ~~4200.~~

In Workflow

1. **RCHEMENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/23/15 1:20 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:40 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:06 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:40 pm Kaylon Buckner (kleb6b): Approved for

Field Trip Statement					
Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	**Yes** ~~No~~				
Elective for Majors	No				

Pending CCC Agenda post

5. 02/02/16 2:02 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 10:41 pm imorgan: Approved for Campus Curricula Committee Chair

Justification for change:

This is a required course for all Chem. Eng. majors. The new prerequisites are needed to reflect the changes in the proposed new curriculum (see attached DC form).

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments **kleb6b (12/23/15 1:40 pm):** Clarify prereq?

Key: 2072

Preview Bridge

Course Inventory Change Request

Date Submitted: 12/23/15 9:04 am

Viewing: CHEM ENG 4130 : Chemical Engineering Laboratory II

File: 792.1

Last edit: 02/02/16 10:41 pm

Changes proposed by: forcinit

Programs referencing this course	CH ENG-BS: Chemical Engineering BS
Other Courses referencing this course	In The Prerequisites: CHEM ENG 4110 : Chemical Engineering Process Dynamics And Control
Requested Effective Change Date	Fall **2016** ~~2014~~
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	4130
Title	Chemical Engineering Laboratory II
Abbreviated Course Title	**Chem Eng** ~~Chemical Engr~~ Lab II

Catalog Description

Experiments illustrating the unit operations of continuous and staged separation. Experimental design methods are extended to include the principles of regression and model building. Communication skills are stressed. This is a communication emphasized course.

Prerequisites

Chem Eng **3130 and** ~~3130,~~ Chem Eng **3140;** ~~3140, preceded~~ or ~~accompanied by~~ Chem Eng **3141 and Chem Eng 3131 and preceded or accompanied by Chem Eng** 3150.

Field Trip Statement

In Workflow

1. **RCHEMENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/23/15 1:20 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:40 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:06 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:41 pm Kaylon Buckner (kleb6b): Approved for

Credit Hours	LEC: 1	LAB: 2	IND: 0	RSD: 0	Total: 3
Required for Majors	**Yes** ~~No~~				
Elective for Majors	No				

Justification for change:

This is a required course for traditional Chem. Eng. majors. New prerequisites are needed to match the courses in the proposed new curriculum (See attached DC form).

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

imorgan (02/02/16 10:41 pm): CCC changed abbreviated titles of Chem Eng Lab I and II to be consistent.

Pending CCC Agenda post

5. 02/02/16 2:03 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 10:42 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 792
Preview Bridge

Course Inventory Change Request

Date Submitted: 12/23/15 9:01 am

Viewing: CHEM ENG 4140 : Chemical Process Safety

File: 863.1

Last edit: 12/23/15 9:01 am

Changes proposed by: forcinit

Programs referencing this course	CH ENG-BS: Chemical Engineering BS
Requested Effective Change Date	Fall **2016** ~~2014~~
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	4140
Title	Chemical Process Safety
Abbreviated Course Title	Chemical Process Safety

Catalog Description

The identification and quantification of risks involved in the processing of hazardous and/or toxic materials are studied.

Prerequisites

Preceded or accompanied by Chem Eng 3150.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	**Yes** ~~No~~				
Elective for Majors	No				

Justification for

In Workflow

1. **RCHEMENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/23/15 1:21 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:40 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:06 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:41 pm Kaylon Buckner (kleb6b): Approved for

change:
This is a required course for traditional Chem. Eng. majors.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Pending CCC Agenda post

5. 02/02/16 2:03 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 10:42 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 863
Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 12/23/15 9:19 am

Viewing: **CHEM ENG 4201 : Biochemical Separations and Control Laboratory**

File: 4284

Last edit: 12/23/15 1:41 pm

Changes proposed by: forcinit

Programs referencing this course	CH ENG-BS: Chemical Engineering BS
Requested Effective Change Date	Fall 2016
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	4201
Title	Biochemical Separations and Control Laboratory
Abbreviated Course Title	Biochemical Separations

Catalog Description

Introduction to the unit operations employed in the separation of chemicals and biochemicals. The experiments illustrate the staged and continuous separation systems that are involved. Application of concepts of industrial process dynamics and control. Communications emphasized.

Prerequisites

Chem Eng 5250.

Field Trip Statement

Credit Hours	LEC: 1	LAB: 2	IND: 0	RSD: 0	Total: 3
Required for	Yes				

In Workflow

1. RCHEMENG Chair
2. CCC Secretary
3. Engineering DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/23/15 1:21 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:41 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:06 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:42 pm Kaylon Buckner (kleb6b): Approved for

Majors

Elective for Majors: No

Justification for new course:
See attached DC form.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Pending CCC Agenda post

5. 02/02/16 2:03 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 10:43 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 4284

Preview Bridge

Course Inventory Change Request

Date Submitted: 12/23/15 9:08 am

Viewing: CHEM ENG 4210 : Biochemical Reactors

File: 1607.4

Last approved: 05/04/15 3:20 am

Last edit: 12/23/15 9:08 am

Changes proposed by: forcinit

Programs referencing this course	BIOMED-MI: Biomedical Engineering Minor CH ENG-BS: Chemical Engineering BS
Other Courses referencing this course	In The Prerequisites: CHEM ENG 4220 : Biochemical Reactor Laboratory

Requested Effective Change Date	Fall **2016** ~~2015~~
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	4210
Title	Biochemical Reactors
Abbreviated Course Title	Biochemical Reactors

Catalog Description

Application of chemical engineering principles to biochemical **reactors.** ~~reactors, and human physiology.~~ Emphasis on cells as chemical reactors, enzyme catalysis and **disposable technology.** ~~biological transport phenomena.~~

Prerequisites

Chem Eng 3150 or graduate standing.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3

In Workflow

1. **RCHEMENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/23/15 1:21 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:41 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:06 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:43 pm Kaylon Buckner (kleb6b): Approved for

Required for Majors	Yes
Elective for Majors	No

Justification for change:

The description of the course has been changed to better describe the contents of the class.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Pending CCC Agenda post

5. 02/02/16 2:03 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 10:43 pm imorgan: Approved for Campus Curricula Committee Chair

History

1. May 4, 2015 by luksc (1607.1)

Key: 1607

Preview Bridge

Course Inventory Change Request

Date Submitted: 12/23/15 9:22 am

Viewing: CHEM ENG 4220 : Biochemical Reactor Laboratory

File: 797.1

Last edit: 02/02/16 2:04 pm

Changes proposed by: forcinit

Programs referencing this course	CH ENG-BS: Chemical Engineering BS
Requested Effective Change Date	Fall **2016** ~~2014~~
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	4220
Title	Biochemical Reactor Laboratory
Abbreviated Course Title	Bioreactor Laboratory

Catalog Description

Introduction to the unit operations involved with the production of biochemicals. The experiments emphasize the isolation of proteins and enzymes from tissue and bacteria cells. This is a communications emphasized course.

Prerequisites

Chem Eng 3200 and preceded or accompanied by **either** Chem Eng **4210 or Chem Eng 5250.** ~~4210.~~

Field Trip Statement

Credit Hours	LEC: **1** ~~0~~	LAB: **2** ~~3~~	IND: 0	RSD: 0	Total: 3
Required for Majors	**Yes** ~~No~~				
Elective for	No				

In Workflow

1. **RCHEMENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/23/15 1:21 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:42 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:06 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:43 pm Kaylon Buckner (kleb6b): Approved for

Majors

Justification for change:

This is a mandatory course for Biochemical Engineering Emphasis majors. The new prerequisite is needed to reflect the changes in the proposed new curriculum (see attached DC form). The credit hours for this class in the new curriculum remain at 3 but one credit hour is used for lectures.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments **kleb6b (12/23/15 1:42 pm):** Clarify prereq?

Pending CCC Agenda post

5. 02/02/16 2:04 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 10:43 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 797

Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 12/23/15 9:11 am

Viewing: **CHEM ENG 4241 : Process Safety in the Chemical and Biochemical Industries**

File: 4286

Last edit: 02/02/16 2:04 pm

Changes proposed by: forcinit

Programs referencing this course	CH ENG-BS: Chemical Engineering BS
Requested Effective Change Date	Fall 2016
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	4241
Title	Process Safety in the Chemical and Biochemical Industries
Abbreviated Course Title	BioProcess Safety

Catalog Description

This course covers risk assessment, biohazard containment and inactivation practices, and other biosafety issues relevant to industrial bioprocessing. Considerations relating to the release of genetically modified organisms are also discussed.

Prerequisites

Preceded or accompanied by Chem Eng 4210.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for	Yes				

In Workflow

1. RCHEMENG Chair
2. CCC Secretary
3. Engineering DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/23/15 1:21 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:43 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:06 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:44 pm Kaylon Buckner (kleb6b): Approved for

Majors

Elective for Majors: No

Justification for new course:
See attached DC form

Semesters previously offered as an experimental course
A one credit hr version of this class is already in the catalogue as ChE 4230

Co-Listed Courses:

Course Reviewer Comments

Pending CCC Agenda post

5. 02/02/16 2:04 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 10:44 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 4286
Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 12/23/15 9:23 am

Viewing: **CHEM ENG 5161 : Intermediate Molecular Engineering**

File: 4291

Last edit: 02/02/16 2:05 pm

Changes proposed by: forcinit

Requested Effective Change Date	Fall 2016
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	5161
Title	Intermediate Molecular Engineering
Abbreviated Course Title	Molecular Engineering

Catalog Description

Molecular aspects of chemical thermodynamics, transport processes, reaction dynamics, and statistical and quantum mechanics.

Prerequisites

Chem Eng 3120 or graduate standing.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	Yes				

Justification for new course:

This is a more advanced version of ChE 3160, which is going to be faded away as we progress into the proposed new curriculum (See attached DC form).

In Workflow

1. RCHEMENG Chair
2. CCC Secretary
3. Engineering DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/23/15 1:21 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:43 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:06 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:45 pm Kaylon Buckner (kleb6b): Approved for

Semesters previously offered as an experimental course	
Co-Listed Courses:	
Course Reviewer Comments	

Key: 4291

Pending CCC Agenda post

5. 02/02/16 2:05 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 10:44 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

Date Submitted: 12/23/15 9:10 am

Viewing: CHEM ENG 5210 : Intermediate Biochemical Reactors

File: 2558.1

Last edit: 12/23/15 1:43 pm

Changes proposed by: forcinit

Requested Effective Change Date	Fall **2016** ~~2014~~
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	5210
Title	Intermediate Biochemical Reactors
Abbreviated Course Title	Int Biochemical Reactors

Catalog Description

Application of chemical engineering principles to biochemical **reactors.** ~~reactors, and human physiology.~~ Emphasis on cells as chemical reactors, enzyme catalysis and **production of monoclonal antibodies.** ~~biological transport phenomena.~~ Projects on special topics and presentations related to the course materials will be included.

Prerequisites

Preceded or accompanied by Chem Eng 3150 or graduate standing.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

Justification for change:

The new description better describes course content.

In Workflow

1. **RCHEMENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/23/15 1:21 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:43 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:06 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:46 pm Kaylon Buckner (kleb6b): Approved for

Semesters previously offered as an experimental course	
Co-Listed Courses:	
Course Reviewer Comments	

Key: 2558

Pending CCC Agenda post

5. 02/02/16 2:05 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:30 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 12/23/15 9:16 am

Viewing: **CHEM ENG 5241 : Intermediate Process Safety in the Chemical and Biochemical Industries**

File: 4292

Last edit: 02/02/16 2:05 pm

Changes proposed by: forcinit

Requested Effective Change Date	Fall 2016
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	5241
Title	Intermediate Process Safety in the Chemical and Biochemical Industries
Abbreviated Course Title	Bioprocess Safety

Catalog Description

This course covers risk assessment, biohazard containment and inactivation practices, and other biosafety issues relevant to industrial bioprocessing. Considerations relating to the release of genetically modified organisms are also discussed.

Prerequisites

Chem Eng 3150 or graduate standing.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	Yes				

In Workflow

1. RCHEMENG Chair
2. CCC Secretary
3. Engineering DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/23/15 1:21 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:44 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:07 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:47 pm Kaylon Buckner (kleb6b): Approved for

Justification for new course:

This is a graduate level or upper level elective version of ChE 4241 which is a required course for the Biochemical Engineering Emphasis students.

Semesters previously offered as an experimental course

Removed "Special project" from end of prereq. Email from Chem Eng.

Co-Listed Courses:

Course Reviewer Comments

Pending CCC Agenda post

5. 02/02/16 2:05 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 10:44 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 4292

Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 12/23/15 9:17 am

Viewing: **CHEM ENG 5250 : Isolation and Purification of Biologicals**

File: 4290

Last edit: 02/02/16 10:45 pm

Changes proposed by: forcinit

Programs referencing this course	CH ENG-BS: Chemical Engineering BS
Requested Effective Change Date	Fall 2016
Department	Chemical and Biochemical Engineering
Discipline	Chemical Engineering (CHEM ENG)
Course Number	5250
Title	Isolation and Purification of Biologicals
Abbreviated Course Title	Iso and Purif of Biolog

Catalog Description

Isolation and purification of biologicals with emphasis on biopharmaceuticals. Principles and applications of chromatography, lyophilization, and product formulation. Use of ultrafiltration and diafiltration in the processing of protein products. Disposable technology.

Prerequisites

Chem Eng 3131 and Chem Eng 3141.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for	Yes				

In Workflow

1. RCHEMENG Chair
2. CCC Secretary
3. Engineering DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/23/15 1:21 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:44 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:07 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:47 pm Kaylon Buckner (kleb6b): Approved for

Majors	
Elective for Majors	No

Pending CCC Agenda post

5. 02/02/16 2:07 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 10:45 pm imorgan: Approved for Campus Curricula Committee Chair

Justification for new course:

See attached DC form

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments	**imorgan (02/02/16 10:45 pm):** CCC changed the abbreviated title to make it more like the full course title.

Key: 4290

Preview Bridge

Course Inventory Change Request

Date Submitted: 12/07/15 9:59 am

Viewing: COMP ENG 3151 : Digital Engineering Lab II

File: 2329.7

Last approved: 10/20/14 3:36 am

Last edit: 12/09/15 6:59 am

Changes proposed by: stanleyj

Programs referencing this course	CP ENG-BS: Computer Engineering BS
Other Courses referencing this course	In The Prerequisites: COMP ENG 5120 : Digital Computer Design
Requested Effective Change Date	**Fall 2016** ~~Spring 2015~~
Department	Electrical and Computer Engineering
Discipline	Computer Engineering (COMP ENG)
Course Number	3151
Title	Digital Engineering Lab II
Abbreviated Course Title	Digital Eng Lab II

Catalog Description

Advanced digital design techniques, Microcontroller based design, hardware and software codesign.

Prerequisites

Comp Eng 2210, Comp Eng 2211, and Comp Sci 1570 (or programming equivalent) each with grade of "C" or better. Preceded or accompanied by Comp Eng **3150.** ~~3150,~~ ~~Elec Eng 2200 and Elec Eng 2201.~~

Field Trip Statement

In Workflow

1. **RELECENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/07/15 7:01 pm Daryl Beetner (daryl): Approved for RELECENG Chair
2. 12/09/15 6:59 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 12/23/15 10:29 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:38 am Kaylon Buckner (kleb6b):

Credit Hours	LEC: 0	LAB: 1	IND: 0	RSD: 0	Total: 1

Required for Majors: **Yes** ~~No~~

Elective for Majors: **No** ~~Yes~~

Justification for change:

Elec Eng 2200 and Elec Eng 2201 are removed from the prerequisite list because they courses do not provide background needed for successful completion of this laboratory course.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Approved for Pending CCC Agenda post
5. 02/02/16 2:07 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:30 pm imorgan: Approved for Campus Curricula Committee Chair

History

1. Jun 30, 2014 by stanleyj (2329.1)
2. Oct 20, 2014 by lahne (2329.5)

Key: 2329
Preview Bridge

Course Inventory Change Request

Date Submitted: 12/07/15 10:05 am

Viewing: **COMP ENG 4096 : Computer Engineering Senior Project I**

File: 1392.3

Last approved: 04/01/15 3:51 am

Last edit: 02/02/16 2:07 pm

Changes proposed by: stanleyj

Programs referencing this course	CP ENG-BS: Computer Engineering BS EL ENG-BS: Electrical Engineering BS
Other Courses referencing this course	In The Catalog Description: COMP ENG 4097 : Computer Engineering Senior Project II In The Prerequisites: COMP ENG 4097 : Computer Engineering Senior Project II
Requested Effective Change Date	Fall **2016** ~~2014~~
Department	Electrical and Computer Engineering
Discipline	Computer Engineering (COMP ENG)
Course Number	4096
Title	Computer Engineering Senior Project I
Abbreviated Course Title	Cp Eng Senior Project I

Catalog Description

A complete design cycle. Working in small teams, students will design, document, analyze, implement, and test a product. Topics include: Iteration in design, prototyping, group dynamics, design reviews, making effective presentations, concurrent design, designing for test, ethics and standards, testing and evaluation.

Prerequisites

Comp Eng 2210, **either** Econ 1100 or **Econ** 1200, **either** English **3560 or English 1160,** ~~3560,~~ Comp Eng 3150, **Comp Eng** 3151, **Comp Eng** 3110, and Elec **Eng** ~~Eng~~ 2200.

In Workflow

1. **RELECENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/07/15 7:01 pm Daryl Beetner (daryl): Approved for RELECENG Chair
2. 12/09/15 7:00 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 12/23/15 10:29 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:40 am Kaylon Buckner (kleb6b):

Field Trip Statement					
Credit Hours	LEC: 0	LAB: .5	IND: 0	RSD: .5	Total: 1
Required for Majors	**Yes** ~~No~~				
Elective for Majors	No				

Justification for change:

Either English 3560 or English 1160 can be taken to satisfy the technical writing requirement in the CpE BS degree program. English 1160 is currently not included in the prerequisite list but needs to be added.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Approved for Pending CCC Agenda post

5. 02/02/16 2:08 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:41 pm imorgan: Approved for Campus Curricula Committee Chair

History

1. Apr 28, 2014 by lahne (1392.1)
2. Apr 1, 2015 by kleb6b (1392.2)

Key: 1392

Preview Bridge

Course Inventory Change Request

Date Submitted: 12/07/15 10:09 am

Viewing: **COMP ENG 4097 : Computer Engineering Senior Project II**

File: 2582.2

Last approved: 04/28/14 4:00 am

Last edit: 01/14/16 8:40 am

Changes proposed by: stanleyj

Programs referencing this course	CP ENG-BS: Computer Engineering BS EL ENG-BS: Electrical Engineering BS
Requested Effective Change Date	**Fall 2016** ~~Spring 2015~~
Department	Electrical and Computer Engineering
Discipline	Computer Engineering (COMP ENG)
Course Number	4097
Title	Computer Engineering Senior Project II
Abbreviated Course Title	Cp Eng Senior Project II

Catalog Description

A continuation of Comp Eng 4096.

Prerequisites

Comp Eng 4096 with a grade of "C" or better, Stat **3117 or Stat 3115 or Stat 5643 , and** ~~3117,~~ Sp&M S 1185.

Field Trip Statement

Credit Hours	LEC: 0	LAB: 3	IND: 0	RSD: 0	Total: 3
Required for Majors	Yes				
Elective for	No				

In Workflow

1. **RELECENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/07/15 7:01 pm Daryl Beetner (daryl): Approved for RELECENG Chair
2. 12/09/15 7:00 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 12/23/15 10:29 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:41 am Kaylon Buckner (kleb6b):

Majors

Justification for change:

Stat 3117, 3115 or 5643 can be taken to satisfy the statistics requirement in the CpE BS degree program. All three courses need to be included in the list for prerequisite checking.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Approved for Pending CCC Agenda post

5. 02/02/16 2:09 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:40 pm imorgan: Approved for Campus Curricula Committee Chair

History

1. Apr 28, 2014 by lahne (2582.1)

Key: 2582
Preview Bridge

Course Inventory Change Request

Date Submitted: 12/07/15 10:25 am

Viewing: **COMP ENG 5410 : Introduction to Computer Communication Networks**

File: 2454.6

Last approved: 10/19/15 3:34 am

Last edit: 01/14/16 8:42 am

Changes proposed by: stanleyj

Catalog Pages referencing this course	Systems Engineering
Programs referencing this course	CP ENG-BS: Computer Engineering BS CP ENG-MI: Computer Engineering Minor
Other Courses referencing this course	In The Prerequisites: COMP ENG 5420 : Introduction to Network Security COMP ENG 6430 : High Speed Networks COMP ENG 6440 : Network Performance Analysis COMP SCI 6303 : Pervasive Computing COMP SCI 6602 : Network Performance Analysis
Requested Effective Change Date	**Fall** ~~Spring~~ 2016
Department	Electrical and Computer Engineering
Discipline	Computer Engineering (COMP ENG)
Course Number	5410
Title	Introduction to Computer Communication Networks
Abbreviated Course Title	Intro to Comm Networks

Catalog Description

Design of computer networks with emphasis on network architecture, protocols and standards, performance considerations, and network technologies. Topics include:

In Workflow

1. **RELECENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/07/15 7:02 pm
   Daryl Beetner (daryl): Approved for RELECENG Chair
2. 12/09/15 7:00 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 12/23/15 10:29 am
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:42 am
   Kaylon Buckner (kleb6b):

LAN, MAN, WAN, congestion/flow/error control, routing, addressing, broadcasting, multicasting, switching, and internetworking. A modeling tool is used for network design and simulation.

Prerequisites

Comp Eng 3150 or computer hardware competency and Stat 3117 or **Stat 3115 or Stat 5643 or** equivalent.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	Yes				
Elective for Majors	No				

Justification for change:

Stat 3117 or 3115 or 5643 can be taken to satisfy the statistics requirement for the CpE BS degree program. The statistics prerequisite requirement includes Stat 3117 or 3115 or 5643 or equivalent because there are out of department students taking CpE 5410 who need a calculus-based statistics course as necessary background. There are several statistics courses offered at Missouri S&T that satisfy this constraint. For CpE BS degree program students, Stat 3117 or 3115 or 5643 meet the statistics background requirement for CpE 5410.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Approved for Pending CCC Agenda post

5. 02/02/16 2:09 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:40 pm imorgan: Approved for Campus Curricula Committee Chair

History

1. Feb 9, 2015 by stanleyj (2454.1)
2. Oct 19, 2015 by stanleyj (2454.4)

Key: 2454

Preview Bridge

Course Inventory Change Request

Date Submitted: 12/07/15 10:27 am

Viewing: **COMP ENG 5620 : Signal Integrity in ~~In~~ High-Speed Digital & Mixed Signal Design**

File: 2549.1

Last edit: 01/14/16 8:43 am

Changes proposed by: stanleyj

Other Courses referencing this course	In The Catalog Description: ELEC ENG 5620 : Signal Integrity In High-Speed Digital & Mixed Signal Design
Requested Effective Change Date	Fall **2016** ~~2014~~
Department	Electrical and Computer Engineering
Discipline	Computer Engineering (COMP ENG)
Course Number	5620
Title	Signal Integrity **in** ~~In~~ High-Speed Digital & Mixed Signal Design
Abbreviated Course Title	Signal Integrity

Catalog Description

Signal integrity ensures signals transmitted over a propagation path maintain sufficient fidelity for proper receiver operation. Compromised signal integrity is often associated with parasitics (e.g. unintentional inductance, capacitance). Theory and CAD tools used for signal integrity analysis of functioning designs.

Prerequisites

Elec Eng 3600 or Comp Eng **3150,** ~~3550,~~ and Senior standing.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				

In Workflow

1. **RELECENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/07/15 7:02 pm Daryl Beetner (daryl): Approved for RELECENG Chair
2. 12/09/15 7:00 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 12/23/15 10:29 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:45 am Kaylon Buckner (kleb6b):

Elective for Majors	**Yes** ~~No~~

Justification for change:

Comp Eng 3550 was renumbered as Comp Eng 3150. The change provides the proper course number.

Semesters previously offered as an experimental course

Approved for Pending CCC Agenda post

5. 02/02/16 2:09 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:39 pm imorgan: Approved for Campus Curricula Committee Chair

Co-Listed Courses:	ELEC ENG 5620 - Signal Integrity In High-Speed Digital & Mixed Signal Design

Course Reviewer Comments

Key: 2549

Preview Bridge

Course Inventory Change Request

Date Submitted: 11/30/15 1:38 pm

Viewing: EXP ENG 5112 : Explosives Handling and ~~And~~ Safety

File: 557.1

Last edit: 01/14/16 12:48 pm

Changes proposed by: pworsey

Catalog Pages referencing this course	Explosives Engineering Explosives Engineering
Requested Effective Change Date	Fall **2016** ~~2014~~
Department	Mining & Nuclear Engineering
Discipline	Explosives Engineering (EXP ENG)
Course Number	5112
Title	Explosives Handling **and** ~~And~~ Safety
Abbreviated Course Title	Explosives Handlng&Safty

Catalog Description

Basic handling & safety for explosives, explosive devices and ordnance related to laboratory handling, testing, manufacturing & storage, for both civil and defense applications. **Classroom instruction only.**

Prerequisites

Junior Standing or above. ~~Min Eng 5612.~~

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	**Yes** ~~No~~				

In Workflow

1. **RMINNUCL Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 01/07/16 1:43 pm reflori: Approved for RMINNUCL Chair
2. 01/07/16 1:46 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:05 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:48 pm Kaylon Buckner (kleb6b): Approved for

Justification for change:

Background check or prerequisites not required for this class. No explosives will be handled.

Semesters previously offered as an experimental course

Co-Listed Courses:

Pending CCC Agenda post

5. 02/02/16 2:09 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:37 pm imorgan: Approved for Campus Curricula Committee Chair

Course Reviewer Comments

sraper (01/14/16 9:05 am): Changed prereq per email with Paul Worsey.

Key: 557

Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 12/15/15 4:25 pm

Viewing: **MATH 1190 : Success for Calculus**

File: 4278

Last edit: 12/15/15 4:25 pm

Changes proposed by: imorgan

Requested Effective Change Date	Fall 2016
Department	Mathematics & Statistics
Discipline	Mathematics (MATH)
Course Number	1190
Title	Success for Calculus
Abbreviated Course Title	Success for Calculus

Catalog Description

This course focuses on the use of college algebra and trigonometry skills within the context of calculus, providing students with the opportunity to improve their preparedness for future calculus coursework. Pass/Fail only.

Prerequisites

Consent of instructor.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 1	IND: 0	RSD: 0	Total: 4
Required for Majors	No				
Elective for Majors	No				

Justification for new course:

This course is a component of the calculus redesign, which is part of the University

In Workflow

1. **RMATHEMA Chair**
2. **CCC Secretary**
3. **Sciences DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/16/15 9:50 am sclark: Approved for RMATHEMA Chair
2. 12/16/15 9:54 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 2:52 pm imorgan: Approved for Sciences DSCC Chair
4. 01/14/16 3:01 pm Kaylon Buckner (kleb6b):

strategic plan. Many students who appear to be qualified to take calculus struggle for various reasons; the purpose of this course is to address their issues so they will have a better chance of succeeding the next time.

Semesters previously offered as an experimental course

FS 2015, SP 2016.

Co-Listed Courses:

Course Reviewer Comments

Approved for Pending CCC Agenda post

5. 02/02/16 2:09 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:30 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 4278
Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/22/15 9:59 am

Viewing: **MET ENG 5120 : Principles for Microstructural Design**

File: 467.1

Last edit: 01/08/16 6:55 am

Changes proposed by: brownten

Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Metallurgical Engineering (MET ENG)
Course Number	5120
Title	Principles for Microstructural Design
Abbreviated Course Title	Principles Microstructural Dsg

Catalog Description

This course will introduce the basics of microstructural principles that can be used to design advanced materials. It will help students learn about the basic principles and microstructural design approaches.

Prerequisites

At least junior standing, Met Eng 3120; Met Eng 3130 or equivalent.

Field Trip Statement

Credit Hours	LEC: 2	LAB: 0	IND: 0	RSD: 0	Total: 2
Required for Majors	No				
Elective for Majors	No				

Justification for change:

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 10:50 am
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 10:57 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:49 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:49 am

The MSE faculty have determined that the course has not been taught recently and is no longer need in the curriculum.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 467

Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 2:09 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:03 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/22/15 9:59 am

Viewing: **MET ENG 5130 : Alloying Principles**

File: 1056.1

Last edit: 01/08/16 6:55 am

Changes proposed by: brownten

Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Metallurgical Engineering (MET ENG)
Course Number	5130
Title	Alloying Principles
Abbreviated Course Title	Alloying Principles

Catalog Description

Basis for alloy design and property control. Predictions of phase stability, alloy properties and metastable phase possibilities; interfaces in solids and their role in phase transformations.

Prerequisites

Met Eng 3130, 2125.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

Justification for change:

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 10:50 am
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 10:58 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:49 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:50 am

The MSE faculty have determined that the course has not been taught recently and is no longer need in the curriculum.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 1056

Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 2:09 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:03 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/22/15 10:00 am

Viewing: **MET ENG 5140 : Composites**

File: 1148.1

Last edit: 01/08/16 6:55 am

Changes proposed by: brownten

Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Metallurgical Engineering (MET ENG)
Course Number	5140
Title	Composites
Abbreviated Course Title	Composites

Catalog Description

An introduction to the structure, properties and fabrication of fiber and particulate composites.

Prerequisites

Met Eng 3120 & 211 or Cer Eng 2110 & 3325.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

Justification for change:

The MSE faculty have determined that the course has not been taught recently and

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 10:50 am
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 10:58 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:49 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:50 am

is no longer need in the curriculum.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 1148

Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 2:09 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:04 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/22/15 10:00 am

Viewing: **MET ENG 5230 : Advanced Corrosion And Its Prevention**

File: 1597.1

Last edit: 01/08/16 6:55 am

Changes proposed by: brownten

Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Metallurgical Engineering (MET ENG)
Course Number	5230
Title	Advanced Corrosion And Its Prevention
Abbreviated Course Title	Adv. Corrosion & Its Prevent.

Catalog Description

A study of the theories of corrosion and its application to corrosion and its prevention.

Prerequisites

Chem 3430 or Cer Eng 3230.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

Justification for

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 10:50 am
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 10:58 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:49 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:51 am

change:

The MSE faculty have determined that the course has not been taught recently and is no longer need in the curriculum.

Semesters previously offered as an experimental course

Co-Listed Courses:

CHEM ENG 5310 - Structure And Properties Of Polymers

Course Reviewer Comments

Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 2:09 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:04 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 1597

Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/22/15 10:01 am

Viewing: **MET ENG 5325 : Metals Treatment Laboratory**

File: 1529.1

Last edit: 01/08/16 6:56 am

Changes proposed by: brownten

Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Metallurgical Engineering (MET ENG)
Course Number	5325
Title	Metals Treatment Laboratory
Abbreviated Course Title	Metals Treatment Lab

Catalog Description

The students plan and perform experiments that illustrate heat treating processes and their effects on the properties and structure of commercial alloys.

Prerequisites

Accompanied or preceded by Met Eng 4320.

Field Trip Statement

Credit Hours	LEC: 0	LAB: 1	IND: 0	RSD: 0	Total: 1
Required for Majors	No				
Elective for Majors	No				

Justification for change:

The MSE faculty have determined that the course has not been taught recently and

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 10:50 am
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 10:58 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:49 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:52 am

is no longer need in the curriculum.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 1529

Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 2:09 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:04 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/22/15 10:01 am

Viewing: **MET ENG 5350 : Advanced Process Metallurgy Applications**

File: 1595.1

Last edit: 01/08/16 6:56 am

Changes proposed by: brownten

Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Metallurgical Engineering (MET ENG)
Course Number	5350
Title	Advanced Process Metallurgy Applications
Abbreviated Course Title	Adv. Process Met. Applications

Catalog Description

Application of thermodynamics to process metallurgy. Equilibrium calculations with stoichiometry and heat balance restrictions, phase transformations, and solution thermodynamics. Use of thermodynamic software to solve complex equilibria in metallurgical applications.

Prerequisites

Cer Eng 3230.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 10:50 am
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 10:58 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:49 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 9:04 am

Justification for change:

The MSE faculty have determined that the course has not been taught recently and is no longer need in the curriculum.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 2:09 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:05 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 1595

Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/22/15 10:01 am

Viewing: **MET ENG 5360 : Transport Phenomena In Extractive Metallurgy**

File: 2219.1

Last edit: 01/08/16 6:56 am

Changes proposed by: brownten

Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Metallurgical Engineering (MET ENG)
Course Number	5360
Title	Transport Phenomena In Extractive Metallurgy
Abbreviated Course Title	Trnspt Phenomena Ext Met

Catalog Description

The application of chemical reaction engineering principles to metallurgical processes. Residence-time districation in reactors and its effect on performance, topochemical gas-solid reactors, two-film theory of mass transfer applied to slag-metal and gas-metal reactions.

Prerequisites

Met Eng 4350 or equivalent.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 10:50 am
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 10:58 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:50 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 9:12 am

Justification for change:

The MSE faculty have determined that the course has not been taught recently and is no longer need in the curriculum.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 2:09 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:05 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 2219

Preview Bridge

Course Inventory Change Request

Date Submitted: 12/22/15 2:08 pm

Viewing: MET ENG 5470 : Ferrous Metals Casting

File: 2216.1

Last edit: 02/02/16 2:10 pm

Changes proposed by: smiller

Requested Effective Change Date	Fall **2016** ~~2014~~
Department	Materials Science & Engineering
Discipline	Metallurgical Engineering (MET ENG)
Course Number	5470
Title	Ferrous Metals Casting
Abbreviated Course Title	Ferrous Metals Casting

Catalog Description

An advanced study of the metallurgy of cast irons and net shape cast steel alloys. Includes theories of nucleation and growth in gray, nodular, compacted graphite and malleable irons. The effects of deoxidation practice and inclusion shape control for cast steels are also included. The effects of alloying elements, processing variables and heat treatment.

Prerequisites

Met Eng 4420 or Met Eng 5420 or graduate standing with permission of instructor.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

Justification for change:

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 2:10 pm Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 2:17 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:51 pm sraper: Approved for Engineering DSCC Chair
4. 01/14/16 9:13 am Kaylon Buckner (kleb6b): Approved for

adding necessary background prerequisites

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Pending CCC Agenda post

5. 02/02/16 2:10 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:39 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 2216

Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/22/15 10:02 am

Viewing: **MET ENG 5540 : Metallurgical Failure Analysis**

File: 2208.1

Last edit: 01/08/16 6:56 am

Changes proposed by: brownten

Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Metallurgical Engineering (MET ENG)
Course Number	5540
Title	Metallurgical Failure Analysis
Abbreviated Course Title	Met Failure Analysis

Catalog Description

Application of the principles of manufacturing and mechanical metallurgy for the analysis of failed components. Analytical techniques such as Scanning Electron Microscopy, Optical Metallography, and High Resolution Photography are used to characterize microstructure and fractographic features. In addition, appropriate methods to gather data, assimilate it, and draw conclusions from the data such that it will stand up in a court of law will be addressed.

Prerequisites

Senior or Graduate Student standing.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 10:50 am
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 10:59 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:51 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 9:14 am

Justification for change:

The MSE faculty have determined that the course has not been taught recently and is no longer need in the curriculum.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 2:11 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:05 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 2208

Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/22/15 10:02 am

Viewing: **MET ENG 5610 : Metals Refining and Recycling of Materials**

File: 1161.1

Last edit: 01/08/16 6:56 am

Changes proposed by: brownten

Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Metallurgical Engineering (MET ENG)
Course Number	5610
Title	Metals Refining and Recycling of Materials
Abbreviated Course Title	Metals Refining and Recycling

Catalog Description

Survey of selected modern processes for the production of metals, the treatment of wastes, and recycling of metal values. Processes are studied with respect to raw materials, chemical reactions, energy consumption, process intensity, yield and environmental impact.

Prerequisites

Cer Eng 3230.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 10:50 am
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 10:59 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:51 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 9:15 am

Justification for change:

The MSE faculty have determined that the course has not been taught recently and is no longer need in the curriculum.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 2:11 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:05 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 1161

Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/22/15 10:03 am

Viewing: **MET ENG 5617 : Advanced Materials Selection And Fabrication**

File: 2217.1

Last edit: 01/08/16 6:56 am

Changes proposed by: brownten

Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Metallurgical Engineering (MET ENG)
Course Number	5617
Title	Advanced Materials Selection And Fabrication
Abbreviated Course Title	Adv Mtrls Sel & Fabricat

Catalog Description

Application of the principles of material selection and the factors governing fabrication, heat treatment, and surface treatment. Weekly assignments requiring library research and written reports. Lecture plus classroom discussion of assigned problems.

Prerequisites

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 10:50 am
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 10:59 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:51 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 9:15 am

Justification for change:

The MSE faculty have determined that the course has not been taught recently and is no longer need in the curriculum.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 2:11 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:05 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 2217

Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/22/15 10:03 am

Viewing: **MET ENG 5627 : Electrical Systems and Controls for Materials**

File: 2202.1

Last edit: 01/08/16 6:56 am

Changes proposed by: brownten

Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Metallurgical Engineering (MET ENG)
Course Number	5627
Title	Electrical Systems and Controls for Materials
Abbreviated Course Title	Elec Sys & Contr for Mat

Catalog Description

This course will cover analysis of alternating and direct current circuits as experienced in the materials industry. Current, voltage, and power relationships in single and three-phase electrical power systems. Introduction to continuous and batch instrumentation including programmable logic controllers (PLCs) and computer interfacing for materials applications.

Prerequisites

Physics 2135.

Field Trip Statement

Credit Hours	LEC: 2	LAB: 1	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for	No				

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 10:50 am
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 10:59 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:51 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 9:16 am

Majors

Justification for change:

The MSE faculty have determined that the course has not been taught recently and is no longer need in the curriculum.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 02/02/16 2:11 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:05 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 2202
Preview Bridge

Course Inventory Change Request

A deleted record cannot be edited

Course Deactivation Proposal

Date Submitted: 12/22/15 10:03 am

Viewing: **MET ENG 5640 : Microfabrication Materials And Processes**

File: 2207.1

Last edit: 01/08/16 6:56 am

Changes proposed by: brownten

Requested Effective Change Date	**Summer 2016** ~~Fall 2014~~
Department	Materials Science & Engineering
Discipline	Metallurgical Engineering (MET ENG)
Course Number	5640
Title	Microfabrication Materials And Processes
Abbreviated Course Title	Microfabrication

Catalog Description

An overview course on the materials and processes used to fabricate integrated circuits, microelectromechanical systems (MEMS), interconnect substrates and other microelectronic components from starting material to final product. The emphasis will be on the influence of structure and processing on the electrical, mechanical, thermal, and optical properties.

Prerequisites

Chem 1310 or equivalent; Senior or Graduate Standing.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for	No				

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 10:50 am
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 10:59 am
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:51 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 9:17 am

Majors

Justification for change:

The MSE faculty have determined that the course has not been taught recently and is no longer need in the curriculum.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 2:11 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:05 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 2207

Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 12/22/15 11:23 am

Viewing: **MET ENG 6160 : Advanced Mechanical Metallurgy**

File: 4287

Last edit: 01/14/16 9:30 am

Changes proposed by: smiller

Requested Effective Change Date	Fall 2016
Department	Materials Science & Engineering
Discipline	Metallurgical Engineering (MET ENG)
Course Number	6160
Title	Advanced Mechanical Metallurgy
Abbreviated Course Title	Adv Mech Metallurgy

Catalog Description

Elastic and plastic behavior of metallic single crystals and polycrystalline aggregates. Resulting changes in mechanical properties are considered. Included are applications to metal fabrication.

Prerequisites

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

Justification for new course:

Need a graduate equivalent to the existing Met Eng 5160 course

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 12:10 pm
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 12:15 pm
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:52 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 9:17 am
   Kaylon Buckner

Semesters previously offered as an experimental course

Offered previously as Met Eng 385

Co-Listed Courses:

Course Reviewer Comments

Key: 4287

(kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 2:11 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:39 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

Date Submitted: 12/22/15 11:25 am

Viewing: MET ENG 6320 ~~5320~~ : Advanced Steels and ~~And~~ Their Treatment

File: 1594.1

Last edit: 02/02/16 2:12 pm

Changes proposed by: smiller

Requested Effective Change Date	Fall **2016** ~~2014~~
Department	Materials Science & Engineering
Discipline	Metallurgical Engineering (MET ENG)
Course Number	**6320** ~~5320~~
Title	Advanced Steels **and** ~~And~~ Their Treatment
Abbreviated Course Title	Adv. Steels & Their Treatment

Catalog Description

Industrially important ferrous alloys are described and classified. The selection of proper heat treatments to facilitate fabrication and to yield required service properties in steels suitable for various applications is considered.

Prerequisites

Met Eng 3130 and Met Eng 2125.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

Justification for change:

Course needs to be taught at graduate level. There is already an undergraduate

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 12:10 pm
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 12:15 pm
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:53 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 9:18 am
   Kaylon Buckner

equivalent course, Met Eng 4320.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 1594

(kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 2:12 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:38 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 12/22/15 11:38 am

Viewing: **MET ENG 6440 : Advanced Metal Deformation Processes**

File: 4289

Last edit: 02/02/16 2:12 pm

Changes proposed by: smiller

Requested Effective Change Date	Fall 2016
Department	Materials Science & Engineering
Discipline	Metallurgical Engineering (MET ENG)
Course Number	6440
Title	Advanced Metal Deformation Processes
Abbreviated Course Title	Adv Metal Deformation

Catalog Description

Advanced metal deformation concepts followed by a study of various forming processes from both the analytical and applied viewpoints. Processes to include: forging, wire drawing, extrusion, rolling, sheet metal forming, and others.

Prerequisites

A grade of "C" or better in both Met Eng 3120 and Met Eng 3420.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

Justification for

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 12:10 pm
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 12:16 pm
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:54 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 9:19 am
   Kaylon Buckner

new course:
Need a graduate level course equivalent to the existing Met Eng 5440 Undergraduate course.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

(kleb6b): Approved for Pending CCC Agenda post
5. 02/02/16 2:12 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:38 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 4289
Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 12/22/15 11:32 am

Viewing: **MET ENG 6470 : Advanced Ferrous Metals Casting**

File: 4288

Last edit: 12/22/15 11:32 am

Changes proposed by: smiller

Requested Effective Change Date	Fall 2016
Department	Materials Science & Engineering
Discipline	Metallurgical Engineering (MET ENG)
Course Number	6470
Title	Advanced Ferrous Metals Casting
Abbreviated Course Title	Adv Ferrous Casting

Catalog Description

An advanced study of the metallurgy of cast irons and net shape cast steel alloys. Includes theories of nucleation and growth in gray, nodular, compacted graphite and malleable irons. The effects of deoxidation practice and inclusion shape control for cast steels are also included. The effects of alloying elements, processing variables and heat treatment.

Prerequisites

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	Yes				

Justification for

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 12:10 pm
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 12:16 pm
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:54 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 9:20 am
   Kaylon Buckner

new course:
Need a graduate level equivalent of the existing Met Eng 5470 course.

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 4288

(kleb6b): Approved for Pending CCC Agenda post
5. 02/02/16 2:12 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:38 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

Date Submitted: 12/22/15 11:35 am

Viewing: **MET ENG 6530 ~~5530~~ : Transmission Electron Microscopy**

File: 2215.1

Last edit: 12/22/15 12:17 pm

Changes proposed by: smiller

Requested Effective Change Date	Fall **2016** ~~2014~~
Department	Materials Science & Engineering
Discipline	Metallurgical Engineering (MET ENG)
Course Number	**6530** ~~5530~~
Title	Transmission Electron Microscopy
Abbreviated Course Title	Transmis Elec Microscopy

Catalog Description

A course in the theory and application of transmission electron microscopy. Topics considered are electron optics, image formation, defect structures, specimen preparation, contrast theory and electron diffraction.

Prerequisites

Met Eng **5520 and graduate standing.** ~~5520.~~

Field Trip Statement

Credit Hours	LEC: 2	LAB: 1	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

Justification for change:

Course it taught at graduate only level.

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 12/22/15 12:10 pm
   Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 12:16 pm
   Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:55 pm
   sraper: Approved for Engineering DSCC Chair
4. 01/14/16 9:20 am
   Kaylon Buckner

Semesters previously offered as an experimental course	
Co-Listed Courses:	
Course Reviewer Comments	

Key: 2215

(kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 2:12 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:38 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 01/07/16 11:31 am

Viewing: **MS&E 5310 : Biomaterials I**

File: 4294

Last edit: 01/07/16 11:31 am

Changes proposed by: smiller

Programs referencing this course	BIOMED-MI: Biomedical Engineering Minor
Requested Effective Change Date	Fall 2016
Department	Materials Science & Engineering
Discipline	Materials Science & Eng (MS&E)
Course Number	5310
Title	Biomaterials I
Abbreviated Course Title	Biomaterials I

Catalog Description

This course will introduce senior undergraduate students to a broad array of topics in biomaterials, including ceramic, metallic, and polymeric biomaterials for in vivo use, basic concepts related to cells and tissues, host reactions to biomaterials, biomaterials-tissue compatibility, and degradation of biomaterials.

Prerequisites

Senior undergraduate standing.

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 0
Required for Majors	No				

In Workflow

1. RMATSENG Chair
2. CCC Secretary
3. Engineering DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. FS Meeting Agenda
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 01/07/16 6:32 pm Richard Brow (brow): Approved for RMATSENG Chair
2. 01/08/16 6:53 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:56 pm sraper: Approved for Engineering DSCC Chair
4. 01/14/16 9:22 am Kaylon Buckner (kleb6b): Approved for

Elective for Majors	No

Justification for new course:

Renaming the current Cer Eng 5210 and Met Eng 5210

Semesters previously offered as an experimental course

see above

Co-Listed Courses:	BIO SCI 5210 - Biomaterials I CHEM ENG 5200 - Biomaterials I

Course Reviewer Comments

Pending CCC Agenda post

5. 02/02/16 2:13 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:31 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 4294

Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 01/07/16 11:34 am

Viewing: **MS&E 6310 : Biomaterials II**

File: 4295

Last edit: 01/14/16 9:22 am

Changes proposed by: smiller

Requested Effective Change Date	Fall 2016
Department	Materials Science & Engineering
Discipline	Materials Science & Eng (MS&E)
Course Number	6310
Title	Biomaterials II
Abbreviated Course Title	Biomaterials II

Catalog Description

This course will introduce graduate students to a broad array of topics in biomaterials, including ceramic, metallic, and polymeric biomaterials for in vivo use, basic concepts related to cells and tissues, host reactions to biomaterials, biomaterials-tissue compatibility, and degradation of biomaterials. A term paper and oral presentation are required.

Prerequisites

Field Trip Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3
Required for Majors	No				
Elective for Majors	No				

Justification for

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 01/07/16 6:32 pm Richard Brow (brow): Approved for RMATSENG Chair
2. 01/08/16 6:53 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:56 pm sraper: Approved for Engineering DSCC Chair
4. 01/14/16 9:23 am Kaylon Buckner (kleb6b): Approved for

new course:
Renaming the current Cer Eng 6210 and Met Eng 6210 courses

Semesters previously offered as an experimental course
see above

Co-Listed Courses:
BIO SCI 6210 - Biomaterials II
CHEM ENG 6300 - Biomaterials II

Pending CCC Agenda post

5. 02/02/16 2:13 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:32 pm imorgan: Approved for Campus Curricula Committee Chair

Course Reviewer Comments

Key: 4295
Preview Bridge

Course Inventory Change Request

Date Submitted: 01/05/16 11:16 am

Viewing: **MUSIC 1130 : Wind Symphony ~~University Band~~**

File: 916.1

Last edit: 01/05/16 11:16 am

Changes proposed by: denises

Requested Effective Change Date	Fall **2016** ~~2014~~
Department	Arts, Languages, & Philosophy
Discipline	Music (MUSIC)
Course Number	1130
Title	**Wind Symphony** ~~University Band~~
Abbreviated Course Title	**Wind Symphony** ~~University Band~~

Catalog Description

Open to all students who play a band instrument. **Auditions may be used for placement in ensemble.** ~~This ensemble is both the "Miner" Marching Band and the UMR Symphonic Band. Students assigned to the ensemble after satisfactory audition.~~

Prerequisites

Field Trip Statement

Credit Hours	LEC: 0	LAB: 2	IND: 0	RSD: 0	Total: 2
Required for Majors	No				
Elective for Majors	No				

Justification for change:

To bring consistency to the Spring and Fall course listings.

In Workflow

1. **RPHILOSO Chair**
2. **CCC Secretary**
3. **Arts & Humanities DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 01/05/16 6:44 pm audram: Approved for RPHILOSO Chair
2. 01/06/16 8:21 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/06/16 9:17 am dewittp: Approved for Arts & Humanities DSCC Chair
4. 01/14/16 9:24 am Kaylon Buckner (kleb6b):

Semesters previously offered as an experimental course	
Co-Listed Courses:	
Course Reviewer Comments	

Key: 916

Approved for Pending CCC Agenda post

5. 02/02/16 2:13 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:06 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

New Course Proposal

Date Submitted: 01/05/16 11:24 am

Viewing: **MUSIC 1131 : Marching Band**

File: 4293

Last edit: 01/05/16 11:59 am

Changes proposed by: denises

Requested Effective Change Date	Fall 2016
Department	Arts, Languages, & Philosophy
Discipline	Music (MUSIC)
Course Number	1131
Title	Marching Band
Abbreviated Course Title	Marching Band

Catalog Description

Open to all students who play a band instrument. Auditions may be used for placement in ensemble.

Prerequisites

Field Trip Statement

Credit Hours	LEC: 0	LAB: 2	IND: 0	RSD: 0	Total: 2
Required for Majors	No				
Elective for Majors	No				

Justification for new course:

This course is offered as part of the requirement for the Music Minor degree.

Semesters

In Workflow

1. **RPHILOSO Chair**
2. **CCC Secretary**
3. **Arts & Humanities DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 01/05/16 6:44 pm audram: Approved for RPHILOSO Chair
2. 01/06/16 8:22 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/06/16 9:16 am dewittp: Approved for Arts & Humanities DSCC Chair
4. 01/14/16 9:25 am Kaylon Buckner (kleb6b):

previously offered as an experimental course	
Co-Listed Courses:	
Course Reviewer Comments	

Key: 4293

Approved for Pending CCC Agenda post

5. 02/02/16 2:13 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:06 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

Date Submitted: 01/05/16 11:40 am

Viewing: **MUSIC 1135 : Symphonic Band ~~Wind And Percussion Ensemble~~**

File: 921.1

Last edit: 01/06/16 9:14 am

Changes proposed by: denises

Requested Effective Change Date	Fall **2016** ~~2014~~
Department	Arts, Languages, & Philosophy
Discipline	Music (MUSIC)
Course Number	1135
Title	**Symphonic Band** ~~Wind And Percussion Ensemble~~
Abbreviated Course Title	**Symphonic Band** ~~Wind&Percussion Ensemble~~

Catalog Description

Open to all students who play **a band instrument.** ~~wind or percussion instruments.~~ **Auditions may be used for placement in ensemble.**

Prerequisites

Field Trip Statement

Credit Hours	LEC: 0	LAB: **0-2** ~~1~~	IND: 0	RSD: 0	Total: **0-2** ~~1~~
Required for Majors	No				
Elective for Majors	No				

Justification for change:

To bring consistency to the Spring and Fall course listings.

In Workflow

1. **RPHILOSO Chair**
2. **CCC Secretary**
3. **Arts & Humanities DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 01/05/16 6:43 pm audram: Approved for RPHILOSO Chair
2. 01/06/16 8:22 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/06/16 9:14 am dewittp: Approved for Arts & Humanities DSCC Chair
4. 01/14/16 9:25 am Kaylon Buckner (kleb6b):

Semesters previously offered as an experimental course	
Co-Listed Courses:	
Course Reviewer Comments	

Key: 921

Approved for Pending CCC Agenda post

5. 02/02/16 2:13 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:06 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

Date Submitted: 01/08/16 2:43 pm

Viewing: **MUSIC 1140 : University Choir**

File: 730.1

Last edit: 01/14/16 2:52 pm

Changes proposed by: denises

Requested Effective Change Date	Fall **2016** ~~2014~~
Department	Arts, Languages, & Philosophy
Discipline	Music (MUSIC)
Course Number	1140
Title	University Choir
Abbreviated Course Title	University Choir

Catalog Description

SATB choral group. Open to all who are interested in learning to sing in a choral setting. No audition required. ~~Open to any student of the university. Students assigned after satisfactory audition.~~

Prerequisites

Field Trip Statement

Credit Hours	LEC: 0	LAB: 1	IND: 0	RSD: 0	Total: 1
Required for Majors	No				
Elective for Majors	No				

Justification for change:

Update per Lorie Francis

Semesters

In Workflow

1. **RPHILOSO Chair**
2. **CCC Secretary**
3. **Arts & Humanities DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 01/12/16 10:07 pm audram: Approved for RPHILOSO Chair
2. 01/13/16 8:02 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 8:38 am dewittp: Approved for Arts & Humanities DSCC Chair
4. 01/14/16 9:26 am Kaylon Buckner

previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

Key: 730

(kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 2:13 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:06 pm imorgan: Approved for Campus Curricula Committee Chair

Preview Bridge

Course Inventory Change Request

Date Submitted: 01/08/16 2:47 pm

Viewing: MUSIC 2161 : Theory of ~~Of~~ Music I

File: 1951.4

Last approved: 06/22/15 3:46 am

Last edit: 01/14/16 9:27 am

Changes proposed by: denises

Other Courses referencing this course	In The Prerequisites: MUSIC 2162 : Theory Of Music II
Requested Effective Change Date	Fall **2016** ~~2015~~
Department	Arts, Languages, & Philosophy
Discipline	Music (MUSIC)
Course Number	2161
Title	Theory **of** ~~Of~~ Music I
Abbreviated Course Title	Theory **of** ~~Of~~ Music I

Catalog Description

Basic musicianship. Notation, rhythm, meter, scales, intervals, triads, nonharmonic tones, major-minor seventh, modulations of common practice period. Applications of these materials in original composition and analysis of melodies and elementary homophonic form.

Prerequisites

Field Trip Statement

Credit Hours	LEC: 3	LAB: **0** ~~1~~	IND: 0	RSD: 0	Total: **3** ~~4~~
Required for Majors	No				

In Workflow

1. **RPHILOSO Chair**
2. **CCC Secretary**
3. **Arts & Humanities DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 01/12/16 10:45 pm audram: Approved for RPHILOSO Chair
2. 01/13/16 8:03 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 8:37 am dewittp: Approved for Arts & Humanities DSCC Chair
4. 01/14/16 9:27 am Kaylon Buckner

Elective for Majors	No
Justification for change:	Update per Lorie Francis
Semesters previously offered as an experimental course	
Co-Listed Courses:	
Course Reviewer Comments	

Key: 1951

(kleb6b): Approved for Pending CCC Agenda post
5. 02/02/16 2:13 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:06 pm imorgan: Approved for Campus Curricula Committee Chair

History

1. Jun 22, 2015 by denises (1951.1)

Preview Bridge

Course Inventory Change Request

Date Submitted: 01/08/16 2:49 pm

Viewing: MUSIC 2162 : Theory of ~~Of~~ Music II

File: 929.1

Last edit: 02/02/16 6:08 pm

Changes proposed by: denises

Other Courses referencing this course	In The Prerequisites: MUSIC 3251 : History And Analysis Of Music I
Requested Effective Change Date	Fall **2016** ~~2014~~
Department	Arts, Languages, & Philosophy
Discipline	Music (MUSIC)
Course Number	2162
Title	Theory **of** ~~Of~~ Music II
Abbreviated Course Title	Theory **of** ~~Of~~ Music II

Catalog Description

A continuation of the requisite theory and fundamentals of **Music 2161.** ~~music I.~~

Prerequisites

Music 2161.

Field Trip Statement

Credit Hours	LEC: 3	LAB: **0** ~~1~~	IND: 0	RSD: 0	Total: **3** ~~4~~
Required for Majors	No				
Elective for Majors	No				

Justification for change:

In Workflow

1. **RPHILOSO Chair**
2. **CCC Secretary**
3. **Arts & Humanities DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. lshelton
11. Peoplesoft

Approval Path

1. 01/12/16 10:45 pm audram: Approved for RPHILOSO Chair
2. 01/13/16 8:03 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 8:36 am dewittp: Approved for Arts & Humanities DSCC Chair
4. 01/14/16 9:28 am Kaylon Buckner

Update per Lorie Francis

Semesters previously offered as an experimental course

Co-Listed Courses:

Course Reviewer Comments

imorgan (02/02/16 6:08 pm): Slightly changed description to match what we thought was intended.

(kleb6b): Approved for Pending CCC Agenda post

5. 02/02/16 2:13 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:09 pm imorgan: Approved for Campus Curricula Committee Chair

Key: 929
Preview Bridge

Program Change Request

Date Submitted: 01/14/16 11:06 am

Viewing: BUS&MS-BS : Business and Mgmt Systems BS

File: 148.20

Last approved: 07/14/15 2:49 pm

Last edit: 02/02/16 2:14 pm

Changes proposed by: barryf

Catalog Pages Using this Program	Business and Management Systems

Start Term	Fall **2016** ~~2015~~
Program Code	BUS&MS-BS
Department	Business and Information Technology
Title	Business and Mgmt Systems BS

In Workflow

1. **RINFSCTE Chair**
2. **CCC Secretary**
3. **Pending CCC Agenda post**
4. **CCC Meeting Agenda**
5. **Campus Curricula Committee Chair**
6. **FS Meeting Agenda**
7. Faculty Senate Chair
8. Registrar
9. kristyg

Approval Path

1. 01/15/16 3:46 pm Kaylon Buckner (kleb6b): Approved for RINFSCTE Chair
2. 01/15/16 3:46 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/15/16 3:46 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
4. 02/02/16 2:14 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
5. 02/02/16 6:34 pm imorgan: Approved for Campus Curricula Committee Chair

History

1. Aug 5, 2014 by barryf
2. Jan 30, 2015 by barryf
3. Jun 17, 2015 by pantaleoa
4. Jul 14, 2015 by pantaleoa

Program Requirements and Description

Bachelor of Science
Business and Management Systems

In **Business** ~~business~~ and **Management Systems,** ~~management systems,~~ the **Bachelor** ~~bachelor~~ of **Science** ~~science~~ degree consists of 120 credit **hours. All undergraduate students in Business and Management Systems are required to complete a General Education Requirements Core, including courses in Humanities, Social Sciences, Mathematics, Science, and Communication Skills.** ~~hours.~~

~~First, all undergraduate students in business and management systems are required to complete a prescribed general education requirements core that corresponds to the recommendations of the Missouri State Coordinating Board for Higher Education and consists of 54 credit hours in the areas of natural systems, human institutions, quantitative skills, and communication skills.~~**A common departmental core of courses in Management and Information Technology helps provide** ~~In addition, all undergraduate~~ students **with skills** ~~are required~~ to **succeed in** ~~complete~~ a **fast-changing and globalized environment. Business Core courses and Business Electives provide students with comprehensive knowledge in business disciplines.** ~~27 credit hour core consisting of courses in information technology, management, and entrepreneurship.~~

~~A minimum grade of "C" is required for courses in these areas.Finally, the degree includes 12 credit hours of free electives.~~**A minimum grade** ~~The remaining 27 credit hours~~ of **"C" is required in** the **Business Core, Business Electives, Management,** ~~required 120 credit hours for the business~~ and **Information Technology courses. Students have 9 credit hours for free** ~~management systems degree are divided into a prescribed 18 credit hour degree core and 9 credit hours of degree specific~~ electives.

Freshman Year			
First Semester	**Credits**	**Second Semester**	**Credits**
PSYCH 1101	3	MATH 1140	3

BUS 1810[1]	1	IS&T 1750	3
BUS 1110	3	ENGLISH 1600 or TCH COM 1600	3
ENGLISH 1120	3	ECON 1200	3
Science Elective[3]	3	Science Elective[3]	3
Laboratory w/ Science Elective[3]	1		
	14		15

Sophomore Year

First Semester	Credits	Second Semester	Credits
BUS 1210	3	FINANCE 2150	3
MATH 1212	4	IS&T 1552	3
IS&T 1551	3	ERP 2110	3
ECON 1100	3	POL SCI 1200	3
SP&M S 1185	3	History Elective	3
	16		15

Junior Year

First Semester	Credits	Second Semester	Credits
MKT 3110	3	~~ECON 2300~~	~~3~~
IS&T 4654	3	BUS 5580	3
STAT 3111	3	ENGLISH 2560 or TCH COM 2560	3
~~BUS 3220~~	~~3~~	~~Business Elective~~	~~3~~
Business Elective	3	~~Free Elective~~	~~3~~
Free Elective	**3**	**BUS 3220**	**3**
		Business Electives	**6**
	15		15

Senior Year

First Semester	Credits	Second Semester	Credits
BUS 2910	3	BUS 5980[1]	3
~~Fine Art, Social Science, or Humanities Electives[2]~~	~~3~~	BUS 4675	3
BUS 5360	3	Business Elective	3
MKT 5310	**3**	Fine Art, Social Science, or Humanities Elective[2]	3
Business Elective	3	Free Elective	3
Free Elective	3		
	15		15
Total Credits: 120			

~~A minimum grade of "C" is required in these courses.~~The electives for this degree are then chosen from business-related upper-level courses.A grade of “C” or better is required in the following courses for **graduation: IS&T 1551, IS&T 1552,IS&T 1750, IS&T 4654,** ~~graduation: IS&T 1552,~~ ERP 2110, **FIN 2150, MKT 3110, MKT 5310, ECON 1100, ECON 1200,** BUS 1110, **BUS 1210,BUS 2150 , BUS 2910 , BUS 3220,** ~~BUS 1210, ECON 1100, ECON 1200, MKT 3110, FINANCE 2150,~~ BUS 4675,BUS 5360, ~~IS&T 4654,~~ BUS 5580, **BUS 5980,** and **all Business Electives.** ~~ECON 2300.~~

1	Writing intensive course
2	Any course in the following areas not used for other degree requirements: Art, economics, English, foreign language, history, literature, music, philosophy, political science, psychology, sociology, theater.
3	Any course in the following areas: Biology, Chemistry, Geology, Geological Engineering, Physics.

Areas of Concentration

All students are required to complete twelve credit hours chosen from 2000, 3000, 4000, or 5000-level courses in business, economics, finance, enterprise resource

planning, information science & technology, or marketing. A “C” or better grade is required in all twelve credit hours. If the student chooses to designate an area of concentration for these courses, focusing at least 3 courses (9 credits) in one area, he or she may do so. Students are not required to choose a concentration area. Areas of concentration are:

E-Commerce

IS&T 5652	Advanced Web Development	3
IS&T 4641	Electronic and Mobile Commerce	3
IS&T 4642	E-Commerce Architecture	3
IS&T 4257	Network Economy	3
IS&T 5168	Law and Ethics in E-Commerce	3

Enterprise Resource Planning

Any 9 hours of ERP-designated courses at the 4000-level or above.

Finance

FINANCE 5160	Corporate Finance II	3
FINANCE 5260	Investments I	3
ECON 4720	International Finance	3
Any other finance course at the 3000-level or above.		

ECON 4410, and ECON 5337 cannot be used toward this concentration.

Human-Computer Interaction

IS&T 5652	Advanced Web Development	3
IS&T 5885	Human-Computer Interaction	3
IS&T 5886	Prototyping Human-Computer Interactions	3
IS&T 5887	Human-Computer Interaction Evaluation	3

Management

~~BUS 3115~~	~~Introduction to Teambuilding and Leadership~~	~~3~~
BUS 5470	Human Resource Management	3
BUS 4111	Business Negotiations	3
IS&T 5251	Technological Innovation Management and Leadership	3

Marketing

MKT 3210	Consumer Behavior	3
~~MKT 5310~~	~~Digital Marketing and Promotions~~	~~3~~
MKT 4150	Customer Focus and Satisfaction	3
MKT 4580	Marketing Strategy	3
ERP 4610	Customer Relationship Management in ERP Environment	3
MKT 5320	**Marketing for Non-Profits**	**3**

Justification for request	Revise description of degree; one course change in Business core and one addition to Business electives. Corrected list of courses where "C" grade is required and reordered them for easier understanding.
Supporting Documents	
Course Reviewer	**kleb6b (01/14/16 10:59 am):** Rollback: Edit

Comments	**kleb6b (02/02/16 2:14 pm):** Update per CCC meeting

Key: 148
Preview Bridge

Program Change Request

Date Submitted: 12/23/15 9:38 am

Viewing: CH ENG-BS : Chemical Engineering BS

File: 150.30

Last approved: 11/18/15 8:39 am

Last edit: 02/03/16 8:04 am

Changes proposed by: forcinit

Catalog Pages Using this Program	Chemical & Biochemical Engineering

Start Term	Fall 2016
Program Code	CH ENG-BS
Department	Chemical and Biochemical Engineering
Title	Chemical Engineering BS

In Workflow

1. **RCHEMENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. kristyg

Approval Path

1. 12/23/15 1:18 pm aldahhanm: Approved for RCHEMENG Chair
2. 12/23/15 1:31 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 9:05 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:27 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 02/03/16 8:04 am Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/03/16 8:54 am imorgan: Approved for Campus Curricula Committee Chair

History

1. Mar 18, 2014 by lahne
2. May 2, 2014 by lahne
3. Jan 30, 2015 by Kaylon Buckner (kleb6b)
4. Jul 15, 2015 by pantaleoa

Program Requirements and Description

Bachelor of Science
Chemical Engineering

Entering freshmen desiring to study chemical engineering will be admitted to the Freshman Engineering Program. They will be permitted, if they wish, to state a chemical engineering preference, which will be used as a consideration for available freshman departmental scholarships. The focus of the Freshman Engineering Program is on enhanced advising and career counseling, with the goal of providing to the student the information necessary to make an informed decision regarding the choice of a major.

For the bachelor of science degree in chemical engineering a minimum of **129** ~~130~~ credit hours is required. These requirements are in addition to credit received for algebra, trigonometry and basic ROTC courses. An average of at least two grade points per credit hour must be attained. At least two grade points per credit hour must also be attained in all courses taken in chemical engineering.

Each student's program of study must contain a minimum of 21 credit hours of course work in general education and must be chosen according to the following rules:

1. All students are required to take one American history course, one economics course, one humanities course, and ENGLISH 1120. The history course is to be selected from HISTORY 1200, HISTORY 1300, HISTORY 1310, or POL SCI 1200. The economics course may be either ECON 1100 or ECON 1200. The humanities course must be selected from the approved lists for art, English, foreign languages, music, philosophy, speech and media studies, or theater.
2. Depth requirement. Three credit hours must be taken in humanities or social sciences at the 1000 level or above and must be selected from the approved list. This course must have as a prerequisite one of the humanities or social sciences courses already taken. Foreign language courses numbered 1180 will be considered to satisfy this requirement. Students may receive humanities credit for foreign language courses in their native tongue only if the course is at the 3000 level or above. All courses taken to satisfy the depth requirement must be taken after graduating from high school.
3. The remaining two courses are to be chosen from the list of approved humanities/social sciences courses and may include one communications course in addition to ENGLISH 1120.
4. Any specific departmental requirements in the general studies area must be satisfied.
5. Special topics and special problems and honors seminars are allowed only by petition to and approval by the student's department chairman.

The chemical engineering program at Missouri S&T is characterized by its focus on the scientific basics of engineering and its innovative

application; indeed, the underlying theme of this educational program is the application of the scientific basics to engineering practice through attention to problems and needs of the public. The necessary interrelations among the various topics, the engineering disciplines, and the other professions as they naturally come together in the solution of real world problems are emphasized as research, analysis, synthesis, and design are presented and discussed through classroom and laboratory instruction.

5. Jul 15, 2015 by pantaleoa
6. Nov 18, 2015 by marlene

Freshman Year			
First Semester	**Credits**	**Second Semester**	**Credits**
FR ENG 1100	1	MECH ENG 1720	3
CHEM 1310	4	CHEM ENG 1100, or COMP SCI 1970 ***and*** COMP SCI 1980, or COMP SCI 1971 ***and*** COMP SCI 1981	3
CHEM 1319	1	CHEM 1320	3
ENGLISH 1120	3	MATH 1215	4
HISTORY 1200, or 1300, or 1310, or POL SCI 1200	3	PHYSICS 1135	4
MATH 1214	4		
CHEM 1100	1		
	17		17
Sophomore Year			
First Semester	**Credits**	**Second Semester**	**Credits**
CHEM ENG 2100[1]	3	CHEM ENG 2310[2]	1
CHEM 2210	4	CHEM ENG 2110[1]	3
~~ECON 1100 or 1200~~	~~3~~	~~CHEM ENG 2300~~	~~3~~
MATH 2222	4	~~Humanities or Social Science Electives[2]~~	~~3~~
PHYSICS 2135	4	~~Humanities or Social Science Elective[2]~~	~~3~~
CHEM ENG 2300	**3**	**Humanities and Social Sciences Elective[4]**	**3**
		Humanities and Social Sciences Elective[4]	**3**
		MATH 3304	3
		Science Elective[5]	**4**
	18		17
Junior Year			
First Semester	**Credits**	**Second Semester**	**Credits**
~~CHEM ENG 3100~~	~~3~~	~~CHEM ENG 4100[4]~~	~~2~~
~~CHEM ENG 3110~~	~~2~~	~~CHEM ENG 3130~~	~~3~~
CHEM ENG 3120	3	~~CHEM ENG 3140~~	~~3~~
~~CHEM 3410~~	~~3~~	~~CHEM ENG 3160~~	~~3~~
~~Humanities or Social Science Elective[2]~~	~~3~~	~~Chem & Lab Elective[6]~~	~~4~~
~~Humanities or Social Science Elective[2]~~	~~3~~	**CHEM ENG 3141**	**2**
CHEM ENG 3101	**4**	**CHEM ENG 3131**	**3**
CHEM ENG 3111	**3**	**CHEM ENG 3150**	**3**
ECON 1100 or 1200	**3**	**STAT 3113**	**3**
Upper level Humanities or Social Science Elective[4]	**3**	**ENGLISH 1160 or 3560**	**3**
	16		14
Senior Year[3]			
First Semester	**Credits**	**Second Semester**	**Credits**
~~CHEM ENG 4130[4]~~	~~3~~	~~CHEM ENG 4096~~	~~2~~
CHEM ENG 4110	3	~~CHEM ENG 4140~~	~~3~~
~~CHEM ENG 4120[4]~~	~~1~~	CHEM ENG 4097[2]	3
~~CHEM ENG 3150~~	~~3~~	CHEM ENG 5XXX-Chem Eng Elective[6]	3

CHEM ENG 5XXX-Chem Eng Elective[6]	3	~~Free Electives[8]~~	~~3~~
~~Free Electives[8]~~	~~3~~	**CHEM ENG 4130[2]**	**3**
CHEM ENG 4101[2]	**3**	**Chem Eng 5xxx --Chem Eng Elective[6]**	**3**
CHEM ENG 4140	**3**	**Chem Eng 5xxx -Chem Eng Elective[6]**	**3**
CHEM ENG 4091	**3**		
	15		15
Total Credits: 129			

~~Free Electives Footnote:Free electives.Each student is required to take six hours of free electives in consultation with his/her academic advisor.Credits which do not count towards this requirement are deficiency courses (such as algebra and trigonometry) and extra credits in required courses.Any courses outside of engineering and science must be at least three credit hours.~~Note: The minimum number of hours required for a degree in chemical engineering is **129.** ~~130.~~

A cumulative grade point average of 2.50 or better and a “C” or better in Chem 1310, Chem 1319, Chem 1320, Math 1214, Math 1215 and Physics 1135 are required to be admitted into the chemical engineering major.

1	A grade of "C" or better is required in Chem Eng 2100 & Chem Eng 2110 in order to enroll in Chem Eng 3120 .
2	Communications emphasized course (See bachelor of science degree, general education communications requirement).
3	Prior to graduation, all chemical engineering majors must take the fundamentals of engineering exam (See assessment requirements, major field). A passing grade is not required to earn a degree, however it is the first step toward becoming a registered professional engineer.
4	From approved list published on the website of Undergraduate Studies. The prerequisites for the upper level course must be completed with a passing grade.
5	CHEM 2510 (Analytical Chemistry Lec 3 Lab 1) or CHEM 4610 (Biochem. Lec 3) and CHEM 4619 (Biochem Lab 2) or BIO SCI 2213 (Cell Biology Lec 3) and BIO SCI 2219 (Cell Biology Lab 1) or CHEM 2220 (Organic Chemistry II, Lect 4) and CHEM 2289 (Lab 1) or Bio Sci 3313 (Microbiology Lec 3) and Bio Sci 3319 (Microbiology Lab 2) or CHEM 3420 (Quantum Chemistry Lec 3) and CHEM 3419 (Physical Chem. Lab 1).
6	Any Chem Eng 5xxx and any class from the approved list published in the Chemical Engineering web site but only 3 cr. hr of Chem. Eng. 4000, Chem Eng 4099 or Chem Eng 4099. Students may have no more than three hours from approved, out-of-department elective.
~~7~~	~~Any CHEM ENG 5XXX class, CHEM ENG 4150%7C, CHEM ENG 4210%7C, CHEM ENG 4300%7C, or CHEM ENG 4310%7C but only one of CHEM ENG 4000%7CCode, CHEM ENG 4099%7CCode or CHEM ENG 4099H can be used to fulfill this requirement.~~
~~8~~	~~Each student is required to take six credit hours of free electives in consultation with his/her academic advisor. Credits which do not count towards this requirement are deficiency courses (such as algebra and trigonometry), and extra credits in required courses. Any courses outside of engineering and science must be at least three credit hours. ELEC ENG 2800%7CCode is recommended for preparation for fundamentals of engineering exam.~~

Chemical Engineering
Biochemical Engineering Emphasis

Freshman Year			
First Semester	**Credits**	**Second Semester**	**Credits**
FR ENG 1100	1	MECH ENG 1720	3
CHEM 1310	4	CHEM ENG 1100, or COMP SCI 1970 ***and*** COMP SCI 1980, or COMP SCI 1971 ***and*** COMP SCI 1981	3
CHEM 1319	1	CHEM 1320	3
ENGLISH 1120	3	MATH 1215	4
HISTORY 1200, or 1300, or 1310, or POL SCI 1200	3	PHYSICS 1135	4
MATH 1214	4		
CHEM 1100	1		
	17		17
Sophomore Year			
First Semester	**Credits**	**Second Semester**	**Credits**
~~BIO SCI 2213~~	~~3~~	~~BIO SCI 3313~~	~~3~~
~~BIO SCI 2219~~	~~1~~	~~BIO SCI 3319~~	~~2~~
CHEM ENG 2100[1]	3	CHEM ENG 2110[1]	3

CHEM 2210	4	~~CHEM ENG 2300~~	~~3~~
MATH 2222	4	~~CHEM 2220~~	~~4~~
PHYSICS 2135	4	~~CHEM 2289~~	~~1~~
CHEM ENG 2300	**3**	**STAT 3113**	**3**
		CHEM ENG 2310[2]	**1**
		Science Elective[5]	**4**
		MATH 3304	3
	18		14

Junior Year

First Semester	Credits	Second Semester	Credits
~~BIO SCI 4323~~	~~3~~	~~CHEM ENG 2310[4]~~	~~1~~
~~CHEM ENG 3100~~	~~3~~	~~CHEM ENG 3130~~	~~3~~
~~CHEM ENG 3110~~	~~2~~	~~CHEM ENG 3160~~	~~3~~
CHEM ENG 3120	3	~~CHEM ENG 3200~~	~~3~~
~~CHEM 3410~~	~~3~~	ECON 1100 or 1200	3
CHEM ENG 3101	**4**	~~Humanities or Social Science Elective[2]~~	~~3~~
Humanities or Social Sciences Elective[4]	**3**	**Science Elective[5]**	**4**
Science Elective[5]	**4**	**CHEM ENG 3141**	**2**
CHEM ENG 3111	**3**	**CHEM ENG 3131**	**3**
		ENGLISH 1160 (or English 3560)	**3**
		CHEM ENG 3150	**3**
	17		18

Senior Year[3]

First Semester	Credits	Second Semester	Credits
CHEM ENG 4110	3	~~CHEM ENG 4096~~	~~2~~
~~CHEM ENG 4120[4]~~	~~1~~	CHEM ENG 4210	3
~~CHEM ENG 4200[4]~~	~~2~~	~~CHEM ENG 4220[4]~~	~~3~~
~~CHEM ENG 3150~~	~~3~~	CHEM ENG 4097[2]	3
~~Humanities or Social Science Elective[2]~~	~~3~~	Humanities or Social Science Elective[4]	3
~~Humanities or Social Science Upper Level Elective[2]~~	~~3~~	~~CHEM ENG 4230~~	~~1~~
Upper Levrel Humanities or Social Sciences Elective[4]	**3**	**CHEM ENG 4201[2]**	**3**
CHEM ENG 4091	**3**	**CHEM ENG 4241**	**3**
CHEM ENG 4220[2]	**3**		
CHEM ENG 5250	**3**		
	15		15
Total Credits: 131			

Note: The minimum number of hours required for a degree in chemical engineering with an emphasis in biochemical engineering is **131.** ~~132.~~

A cumulative grade point average of 2.50 or better and a “C” or better in Chem 1310, Chem 1319, Chem 1320, Math 1214, Math 1215 and Physics 1135 are required to be admitted into the chemical engineering major.

1	A grade of "C" or better is required in Chem Eng 2100 & Chem Eng 2110 in order to enroll in Chem Eng 3120.
2	Communications emphasized course (See bachelor of science degree, general education communications requirement).
3	Prior to graduation, all chemical engineering majors must take the fundamentals of engineering exam (See assessment requirements, major field). A passing grade is not required to earn a degree, however, it is the first step toward becoming a registered professional engineer.
4	From approved list published on the website of Undergraduate Studies. The prerequisites for the upper level course must be completed with a passing grade.

5	A minimum of 12 credit hours in Science Electives are required. Select three courses from Chem 2220, Chem 4610, Chem 4620, BioSci 2213, BioSci 3313, and BioSci 4323; and a minimum of two laboratory courses from Chem 2229 or Chem 2289, Chem 4619, BioSci 2219, BioSci 3319, and BioSci 4329.

Justification for request	See attached documents.
Supporting Documents	**new curriculum justification.docx**
Course Reviewer Comments	**kleb6b (02/03/16 8:04 am):** Updates per CCC meeting

Key: 150
Preview Bridge

Program Change Request

Date Submitted: 01/14/16 11:02 am

Viewing: IST-BS : Information Science and Tch BS

File: 75.16

Last approved: 07/28/15 11:44 am

Last edit: 02/02/16 2:20 pm

Changes proposed by: barryf

Catalog Pages Using this Program	Information Science and Technology

Start Term	Fall **2016** ~~2015~~
Program Code	IST-BS
Department	Business and Information Technology
Title	Information Science and Tch BS

Program Requirements and Description

Bachelor of Science
Information Science and Technology

In **Information Science** ~~information science~~ and **Technology,** ~~technology,~~ the **Bachelor** ~~bachelor~~ of **Science** ~~science~~ degree consists of 120 credit hours. ~~First, all undergraduate students in information science and technology are required to complete a prescribed general education requirements core that corresponds to the recommendations of the Missouri State Coordinating Board for Higher Education and consists of 54 credit hours in the areas of natural systems, human institutions, quantitative skills, and communication skills.~~**All** ~~In addition, all~~ undergraduate students **in Business and Management Systems** are required to complete a **General Education Requirements Core, including** ~~27 credit hour core consisting of~~ courses **in Humanities, Social Sciences, Mathematics, Science, and Communication Skills.** ~~in information technology, management, and entrepreneurship.~~

~~A minimum grade of "C" is required for courses in these areas.Finally, the degree includes 12 credit hours of free electives.The remaining 27 credit hours of the required 120 credit hours for the information science and technology degree are divided into a prescribed 18 credit hour degree core and 9 credit hours of specific degree electives.A minimum grade of "C" is required in these courses.~~**A common departmental core of** ~~The information science and technology degree requires~~ courses in **Management and Information Technology helps provide students with skills** ~~database management, systems analysis, introduction~~ to **succeed in a fast-changing** ~~data science~~ and **globalized environment. Information Science** ~~management, computing internals, networks~~ and **Technology (IST) Core courses** ~~communications,~~ and **IST Electives provide students with comprehensive knowledge of information technology utilization in businesses. These courses include database management, systems analysis, introduction to data science** ~~electronic~~ and **management, computing internals, networks and communications, and electronic and** mobile **commerce. The electives for this degree consist of advanced coursework in the areas introduced by the required courses.** ~~commerce.~~

A minimum grade ~~The remaining 27 credit hours~~ **of "C" is required in the IST Core, IST Electives, Management,** ~~required 120 credit hours for the information science~~ **and Information Technology courses. Students have** ~~technology degree are divided into a prescribed 18 credit hour degree core and~~ **9 credit hours for free** ~~of specific degree~~ **electives.**

Freshman Year

In Workflow

1. **RINFSCTE Chair**
2. **CCC Secretary**
3. **Pending CCC Agenda post**
4. **CCC Meeting Agenda**
5. **Campus Curricula Committee Chair**
6. **FS Meeting Agenda**
7. Faculty Senate Chair
8. Registrar
9. kristyg

Approval Path

1. 01/15/16 3:46 pm Kaylon Buckner (kleb6b): Approved for RINFSCTE Chair
2. 01/15/16 3:46 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/15/16 3:46 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
4. 02/02/16 2:21 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
5. 02/02/16 6:35 pm imorgan: Approved for Campus Curricula Committee Chair

History

1. Apr 28, 2014 by barryf
2. Jan 30, 2015 by barryf
3. Jul 21, 2015 by pantaleoa
4. Jul 21, 2015 by pantaleoa
5. Jul 28, 2015 by Kaylon Buckner (kleb6b)

First Semester	Credits	Second Semester	Credits
BUS 1810[1]	1	PSYCH 1101	3
ENGLISH 1120	3	MATH 1212	4
MATH 1140[5]	3	IS&T 1551	3
Science Elective[2]	3	BUS 1110	3
IS&T 1750	3	BUS 1210	3
Laboratory w/Science Elective	1		
	14		16

Sophomore Year

First Semester	Credits	Second Semester	Credits
ECON 1200	3	IS&T 3131	3
SP&M S 1185	3	Science Elective[2]	3
IS&T 1552	3	~~IS&T Elective~~	~~3~~
ENGLISH 1600 or TCH COM 1600	3	**IS&T Elective or Emphasis Area[4]**	**3**
ERP 2110	3	STAT 3111	3
		ECON 1100	3
	15		15

Junior Year

First Semester	Credits	Second Semester	Credits
IS&T 4654	3	IS&T 3343	3
FINANCE 2150	3	MKT 3110	3
IS&T 3423	3	IS&T 3420	3
IS&T 3333	3	IS&T 4641	3
~~Fine Art, Social Science, or Humanities Elective[3]~~	~~3~~	ENGLISH 2560 or TCH COM 2560	3
IS&T Elective or Emphasis Area[4]	**3**		
	15		15

Senior Year

First Semester	Credits	Second Semester	Credits
~~Free Electives~~	~~6~~	BUS 5980	3
Free Elective	3	POL SCI 1200	3
Fine Art, Social Science, or Humanities Elective[3]	3	IS&T Elective or Emphasis Area[4]	3
IS&T Electives or Emphasis Area[4]	**6**	Free Electives	6
History Elective	3		
	15		15
Total Credits: 120			

~~The electives for this degree consist of advanced coursework in the areas introduced by the required courses.~~A grade of "C" or better is required in the following courses for graduation; **BUS 1110** ~~BUS 1810~~ , **BUS 1210** ~~BUS 5980~~ , **BUS 1810** ~~IS&T 1750~~ , **BUS 5980** ~~IS&T 1551~~ , **ECON 1100** ~~IS&T 1552~~ , **ECON 1200** , **ERP 2110** , **FINANCE 2150** , **MKT 3110** ~~BUS 1110~~ , **IS&T 1551** ~~BUS 1210~~ , **IS&T 1552** ~~MKT 3110~~ , **IS&T 1750** ~~FINANCE 2150 , ECON 1100~~ , **IS&T 3131** , **IS&T 3333** , **IS&T 3343** ~~ECON 1200~~ , **IS&T 3420** ~~IS&T 4654~~ , **IS&T 3423, IS&T 4641, IS&T 4654,** ~~IS&T 3423 , IS&T 3131 , IS&T 3333 , IS&T 3420~~ and **all IST Electives.** ~~IS&T 3343 .~~

1	Writing intensive course
2	Any course in the following areas: biology, chemistry, geology, geological engineering, physics.
3	Any course in the following areas not used for other degree requirements: art, economics, English, foreign language, history, literature, music, philosophy, political science, psychology, sociology, theater.
4	A grade of "C" or better is required in IS&T electives and emphasis area courses for graduation. Students choosing the human-computer interaction emphasis area must take IS&T 5885, IS&T 5886, and either IS&T 5887 . Students choosing the enterprise resource planning emphasis area must take 9 hours of

	ERP-designated courses at the 4000-level or above. Students who choose no emphasis area must take three courses from: IS&T 4000-level or above, ERP 4000-level or above, COMP SCI 4700, COMP SCI 5601.
5	MATH 1120 may be subsituted for MATH 1140.

Emphasis Areas

Two emphasis areas may be taken to specialize if the student wishes to do so. The first, human-computer interaction, consists of three courses:

IS&T 5885	Human-Computer Interaction	3
IS&T 5886	Prototyping Human-Computer Interactions	3
IS&T 5887	Human-Computer Interaction Evaluation	3

The second emphasis area, enterprise resource planning, consists of any 9 hours of ERP-designated courses at the 4000-level or above.

Justification for request	Revise description of degree; replace one course with an IS&T elective, Correct and reorder list of courses for which a "C" grade is required. Correct Footnote 4 to include ERP-designated courses as approved for IST Electives.
Supporting Documents	
Course Reviewer Comments	**kleb6b (01/12/16 1:38 pm):** Rollback: Table **kleb6b (01/14/16 10:59 am):** Rollback: Edit **kleb6b (02/02/16 2:20 pm):** Update per CCC Meeting

Key: 75
Preview Bridge

Program Change Request

Date Submitted: 01/07/16 11:42 am

Viewing: BIOMED-MI : Biomedical Engineering Minor

File: 237.19

Last approved: 10/15/15 4:18 pm

Last edit: 01/07/16 11:42 am

Changes proposed by: smiller

Catalog Pages Using this Program	Materials Science and Engineering

Start Term	Fall 2016
Program Code	BIOMED-MI
Department	Materials Science & Engineering
Title	Biomedical Engineering Minor

Program Requirements and Description

Biomedical Engineering Minor

Minimum number of credit hours: 15 hours, consisting of 1 required course, Cer Eng 3110: Introduction to Biomedical Engineering, plus at least 4 courses from an approved list. At least 2 of the elective courses will be at or above the 4000 level. Core courses used toward a student's major degree requirements cannot be used for the minor degree program in BME. Elective courses used toward a student's major degree requirements or another minor degree program cannot be used unless they are approved by the biomedical engineering program committee.

Elective courses:

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. kristyg

Approval Path

1. 01/07/16 6:32 pm Richard Brow (brow): Approved for RMATSENG Chair
2. 01/08/16 6:53 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:13 pm sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:26 am Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 02/02/16 2:21 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:33 pm imorgan: Approved for Campus Curricula Committee Chair

History

1. Oct 27, 2014 by rahaman
2. Nov 18, 2014 by Kaylon Buckner (kleb6b)
3. Jan 23, 2015 by pantaleoa
4. Jan 23, 2015 by

pantaleoa
5. Jun 19, 2015 by pantaleoa
6. Jul 21, 2015 by pantaleoa
7. Oct 15, 2015 by smiller

BIO SCI 2213	Cell Biology	3
BIO SCI 2219	Cell Biology Laboratory	1
BIO SCI 2223	General Genetics	3
BIO SCI 3313	Microbiology	3
BIO SCI 3319	Microbiology Lab	2
BIO SCI 3333	Human Anatomy and Physiology I	3
BIO SCI 3339	Human Anatomy Physiology I Lab	1
BIO SCI 3343	Human Anatomy and Physiology II	3
BIO SCI 3349	Human Anatomy and Physiology II Laboratory	1
BIO SCI 3483	Biomedical Problems	3
CHEM ENG 4210	Biochemical Reactors	3
BIO SCI 4323	Molecular Genetics	3
BIO SCI 4353	Cancer Cell Biology	3
BIO SCI 4383	Toxicology	3
CHEM 4610	General Biochemistry	3
CHEM 4620	Metabolism	3
BIO SCI 5001	Special Topics	0-6
~~BIO SCI 5210/CER ENG 5210/MET ENG 5210/CHEM ENG 5200~~	~~Biomaterials I~~	~~3~~
BIO SCI 5240/MS&E 5210	Tissue Engineering I	3
MS&E 5310/BIO SCI 5210/CHEM ENG 5200	**Biomaterials I**	**3**
CHEM ENG 5320	Introduction to Nanomaterials	3
BIO SCI 5323	Bioinformatics	3
STAT 5425	Introduction to Biostatistics	4
ENG MGT 5511	Technical Entrepreneurship	3
MET ENG 4099	Undergraduate Research [1]	0-6

[1] Undergraduate Research may be taken in any science or engineering discipline.

Justification for request: Renamed Cer Eng 5210 and Met Eng 5210 into MS&E 5310

Supporting Documents

Course Reviewer Comments

Key: 237
Preview Bridge

Program Change Request

Date Submitted: 12/22/15 9:29 am

Viewing: MT ENG-BS : Metallurgical Engineering BS

File: 90.18

Last approved: 07/21/15 11:08 am

Last edit: 12/22/15 11:00 am

Changes proposed by: smiller

Catalog Pages Using this Program	Metallurgical Engineering
Start Term	Fall **2016** ~~2015~~
Program Code	MT ENG-BS
Department	Materials Science & Engineering
Title	Metallurgical Engineering BS

Program Requirements and Description

Bachelor of Science
Metallurgical Engineering

Entering freshmen desiring to study metallurgical engineering will be admitted to the Freshman Engineering Program. They will be permitted to state a metallurgical engineering preference, which will be used as a consideration for available freshman departmental scholarships. The focus of the Freshman Engineering program is on enhanced advising and career counseling, with the goal of providing to the student the information necessary to make an informed decision regarding the choice of a major.

For the bachelor of science degree in metallurgical engineering a minimum of 128 credit hours is required. These requirements are in addition to credit received for algebra, trigonometry, and basic ROTC courses. A student must maintain an average of at least two grade points per credit hour in metallurgical engineering.

The metallurgical engineering curriculum contains a required number of hours in humanities and social sciences as specified by the Engineering Accreditation Commission of ABET. Each student's program of study must contain a minimum of 18 credit hours of course work from the humanities and the social sciences areas and should be chosen according to the following rules:

1. All students are required to take one American history course and one economics course. The history course is to be selected from HISTORY 1200, HISTORY 1300, HISTORY 1310, or POL SCI 1200. The economics course may be either ECON 1100 or ECON 1200.
2. Of the remaining hours, six credit hours must be taken in humanities or social sciences from the approved list of humanities and social science (HSS) courses posted on the undergraduate studies website (http://ugs.mst.edu/). Students may receive humanities credit for foreign language courses in their native tongue only if the course is at the 4000 level.)
3. Special topics, special problems courses and honors seminars are allowed only by petition to and approval by the student's department chair.

In Workflow

1. **RMATSENG Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. kristyg

Approval Path

1. 12/22/15 10:50 am Richard Brow (brow): Approved for RMATSENG Chair
2. 12/22/15 11:00 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 4:00 pm sraper: Approved for Engineering DSCC Chair
4. 01/14/16 8:27 am Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 02/02/16 2:22 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:34 pm imorgan: Approved for Campus Curricula Committee Chair

History

1. Oct 8, 2013 by lahne
2. Apr 28, 2014 by lahne
3. Aug 14, 2014 by lahne
4. Aug 20, 2014 by pantaleoa

5. Aug 20, 2014 by pantaleoa
6. Aug 20, 2014 by pantaleoa
7. Jul 21, 2015 by pantaleoa

Freshman Year			
First Semester	**Credits**	**Second Semester**	**Credits**
FR ENG 1100	1	MET ENG 1210[2]	3
CHEM 1310	4	MATH 1215	4
CHEM 1319	1	PHYSICS 1135	4
MATH 1214	4	Hum/Soc Sci Elective[1]	3
ENGLISH 1120	3	MECH ENG 1720	3
Hum/Soc Sci Elective[1]	3		
	16		17
Sophomore Year			
First Semester	**Credits**	**Second Semester**	**Credits**
PHYSICS 2135	4	CER ENG 3230	3
MATH 2222	4	CIV ENG 2210	3
MET ENG 2110	3	MET ENG 2125	2
CIV ENG 2200	3	MET ENG 3130	3
Hum/Soc Sci Elective[1]	3	MET ENG 3420	3
		MET ENG 3425	1
		Hum/Soc Sci Elective[1]	3
	17		18
Junior Year			
First Semester	**Credits**	**Second Semester**	**Credits**
MET ENG 3320	3	ENG MGT 1100	1
MATH 3304[3]	3	ENG MGT 1210	2
MET ENG 3120	3	MET ENG 3225	1
MET ENG 3125	2	MET ENG 3220	3
MET ENG 4420	3	CER ENG 3410	3
Communication Elective[1]	3	Out of Department Technical Elective[4]	3
		Core Elective I[5]	3
	17		16
Senior Year			
First Semester	**Credits**	**Second Semester**	**Credits**
MET ENG 4096	3	MET ENG 4097	3
Statistics Course[3]	3	Hum/Soc Sci Elective[1]	3
MET ENG 4350	3	Technical Elective[6]	3
Core Elective II[5]	3	Free Elective[7]	3
Technical Elective[6]	3		
	15		12
Total Credits: 128			

[1] Eighteen hours of required H/SS electives of which three hours must be history (HISTORY 1200, HISTORY 1300, HISTORY 1310, or POL SCI 1200), three hours of economics (ECON 1100 or ECON 1200) and three hours communications (ENGLISH 1160, ENGLISH 3560, or SP&M S 1185)

2	CHEM 1320 can be substituted for MET ENG 1210
3	All metallurgical engineering students must take MATH 3304 and one statistics course (STAT 3113 or STAT 3115)
4	CER ENG 3220 or CER ENG 5250 or CER ENG 5115, CHEM ENG 5320, CHEM 2210 or CHEM 2310 or CHEM 3410, ELEC ENG 2100 & ELEC ENG 2101 or ELEC ENG 2800, GEOLOGY 2610, MATH 3304 (if two stat courses taken[3]) or MATH 5603 or MATH 5325, MECH ENG 5212 or MECH ENG 5220 or MECH ENG 5229 or MECH ENG 5236 or MECH ENG 5238 or MECH ENG 5282, MIN ENG 3412, PHYSICS 2305 or PHYSICS 2311
5	Metallurgical Core Electives (9 hours) Core Elective I - Introduction to Particulate Materials (MET ENG 4160) or Corrosion And Its Prevention (MET ENG 4230) Core Elective II - Steelmaking (MET ENG 4450) or Steels And Their Treatment (MET ENG 4320)
6	Technical Electives (MET ENG or approved listing)
7	Free Electives (3 hours)-algebra, trigonometry, basic ROTC, and courses considered remedial excluded

Justification for request	Now requiring all Met Eng BS students to take Math 3304, no longer optional.
Supporting Documents	
Course Reviewer Comments	**kleb6b (12/22/15 11:00 am):** Update effective term

Key: 90
Preview Bridge

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 01/12/16 2:30 pm

Viewing: **ELEC ENG 5001.003 : LEDs for Solid State Lighting and Illumination Engineering**

File: 4296

Last edit: 02/02/16 2:23 pm

Changes proposed by: fergusoni

Requested Effective Change Date	Fall 2016
Department	Electrical and Computer Engineering
Discipline	Electrical Engineering (ELEC ENG)
Course Number	5001
Topic ID	003
Experimental Title	LEDs for Solid State Lighting and Illumination Engineering
Experimental Abbreviated Course Title	LEDs for Illumination
Instructors	Ian Ferguson (ECE)

Experimental Catalog Description

High-brightness LEDs have resulted in revolutionary new approaches for illumination. The future will see a broader adoption of this technology driven by the promise to reduce energy consumption. The course will review the historical development of LEDs, their current uses and system integration.

Prerequisites

Elec Eng 2200 or equivalent or graduate standing.

Field Trip Statement

n/a

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3

In Workflow

1. RELECENG Chair
2. CCC Secretary
3. Engineering DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. Registrar

Approval Path

1. 01/13/16 7:54 pm Daryl Beetner (daryl): Approved for RELECENG Chair
2. 01/14/16 8:21 am Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/14/16 11:10 am sraper: Approved for Engineering DSCC Chair
4. 01/14/16 12:49 pm Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 02/02/16 2:23 pm Kaylon Buckner

(kleb6b): Approved for CCC Meeting Agenda
6. 02/02/16 6:36 pm imorgan: Approved for Campus Curricula Committee Chair

Justification for new course:

The recent development of high-brightness Light Emitting Diodes (LEDs) based on III-Nitrides and AlInGaP has led to the possibility of revolutionary new approaches for lighting that have become known as Solid State Lighting (SSL). LEDs are already used in traffic signals, signage/contour lighting, large area displays, and automotive applications. SSL's greatest future still lays in a more broad-based adoption of solid-state light sources in general illumination. SSL promises to reduce energy consumption, cut down on carbon-dioxide emission, and even spur the development of a completely new lighting industry. SSL technology has largely been developed by the compound semiconductor community who has little or no understanding of the lighting industry. A similar lack of knowledge also exists about the advances of LEDs for lighting applications in the general lighting community. In particular, there is a need to move beyond retrofitting LED light bulbs into the pre-existing Edison socket. The scope of this course is to provide a state-of-the-art review of SSL technology from both the perspective of the engineer or scientist and those involved in the lighting industry. This is something that is not currently addressed at Missouri S&T and is needed in the industry.

Semester(s) previously taught	A similar course has been taught at Georgia Tech and National Taiwan University but not at Missouri S&T.
Co-Listed Courses:	
Course Reviewer Comments	**sraper (01/14/16 9:20 am):** Corrected a typo in the description.

Key: 4296
Preview Bridge

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 11/12/15 2:52 pm

Viewing: **MIN ENG 6001.001 : Integrating the National Environmental Policy Act and Project Management**

File: 4270

Last edit: 01/14/16 9:01 am

Changes proposed by: jrussell

Requested Effective Change Date	Summer 2016
Department	Mining & Nuclear Engineering
Discipline	Mining Engineering (MIN ENG)
Course Number	6001
Topic ID	001
Experimental Title	Integrating the National Environmental Policy Act and Project Management
Experimental Abbreviated Course Title	Integrat NEPA with Proj
Instructors	David Weiss

Experimental Catalog Description

Any new construction projects, plant expansions or other proposed significant activities can impact the environment, and public health and safety. Regulatory approval of a proposed action requires compliance with the National Environmental Policy Act (NEPA). The student will learn to integrate NEPA into Project Management processes.

Prerequisites

Min Eng 4742 or an equivalent course.

Field Trip Statement

In Workflow

1. RMINNUCL Chair
2. CCC Secretary
3. Engineering DSCC Chair
4. Pending CCC Agenda post
5. CCC Meeting Agenda
6. Campus Curricula Committee Chair
7. Registrar

Approval Path

1. 01/07/16 1:44 pm reflori: Approved for RMINNUCL Chair
2. 01/07/16 1:48 pm Kaylon Buckner (kleb6b): Approved for CCC Secretary
3. 01/13/16 3:56 pm sraper: Approved for Engineering DSCC Chair
4. 01/14/16 9:21 am Kaylon Buckner (kleb6b): Approved for Pending CCC Agenda post
5. 02/02/16 2:23 pm Kaylon Buckner (kleb6b): Approved for CCC Meeting Agenda

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0	Total: 3

6. 02/02/16 6:37 pm imorgan: Approved for Campus Curricula Committee Chair

Justification for new course:

EC originally approved Dec 15, 2014 File 4136. course title has been changed to broaden audience for all Engineering Disciplines. People need to know the big impact of any major projects whether identifying impacts, determining significance and developing mitigation measures for those impacts.

Semester(s) previously taught: SP2015

Co-Listed Courses:

Course Reviewer Comments

Key: 4270

Preview Bridge