CLEMSON
CHEMICAL AND BIOMOLECULAR ENGINEERING

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Memo:

To: Undergraduate Curriculum Committee

From: CECAS Curriculum Committee

DEPARTMENT OF CHEMICAL & BIOMOLECULAR ENGINEERING

Clemson University
127 Earle Hall
Box 340909
Clemson, SC
29634-0909

P 864-656-3055

The purpose of this memo is to change current text in the Undergraduate Catalog Information for the College of Engineering, Computing, and Applied Sciences under the subheading General Education Requirements for Engineering Curricula. Changes are underlined and highlighted.

The previous text reads "In addition to the University General Education Requirements, some engineering majors are required to complete additional credit hours from a college approved list. Individual engineering curricula may have more specific requirements. For a complete list of acceptable courses, please speak with an advisor."

This will be replaced by "In addition to the University General Education Requirements, some CECAS majors are required to complete additional credit hours from a college or department approved list. Individual curricula may have more specific requirements. These additional courses may not be used to satisfy the Arts and Humanities or Social Science General Education Requirements. For a complete list of acceptable courses, please speak with an advisor.

The purpose of this change is to ensure that these additional courses are in fact additional and not double counted with other general education requirements.

John D. Kiffe

000002

Change Major

If Gen Ed requirements are changed a separate Gen Ed Checklist form must accompany this form.

Major Name: Computer Science

Degree: Bachelor of Science

Effective Catalog Year: 2018-2019

- [ ] Change Major Name to: CPSC
- [ ] Change Degree to: Bachelor of Science
- [x] Change Curriculum Requirements
- [ ] Change General Education Requirements
- [ ] Add, Change, or Delete Concentration(s)
- [ ] Add, Change, or Delete Emphasis Area(s)

Curriculum Map: BS-CPSC-AY1819-20171010220827.docx

Description: revised course map BS-CPSC

Additional Information:

Description:

Summary/Explanation

1. Collapse the additional six credits of "Arts and Humanities Requirement" and "Social Science Requirement" in the Junior and Senior years into a "Breadth Requirement". This will aid in advising and highlight that the courses applied to the Breadth Requirement are not to be double counted with the General Education Requirements for Arts and Humanities and Social Science.
2. Add "Technical" to "Computer Science Requirement". This will aid in advising and highlight that these are selected technical elective courses.
3. Following the recommendation of the Registrar's office, explicitly list the two possible paths of Geology courses to clarify the GEOL lab science sequence in the Natural Science Requirement.
4. Allow MATH 4190 as a substitute for CPSC 2070 in footnote 4. MATH 4190 provides similar coverage of the topics found in CPSC 2070.
5. Following the recommendation of the Registrar's office, add a mutual exclusion statement in footnote 7 to distinguish the Breadth Requirement from the General Education Requirements. This will prevent double counting between the Breadth Requirement and the General Education Requirements A-D.
6. Disallow MATH 4190 as a substitute for the Computer Science Technical Requirement in footnote 8 since allowing MATH 4190 would allow the repeat of much of the material already covered in CPSC 2070. Add a mutual exclusion statement to prevent double counting of required CPSC 3000-level courses as selected technical electives.
7. Remove the AS and ML courses as options to satisfy the Writing Requirement since these courses are not writing-intensive.

Rationale for Change Major

- [x] Strengthen Program Requirement(s)
- [ ] Alignment of Student Learning Outcomes
- [ ] Alternative Delivery of Content
- [ ] Improve Time to Degree
- [ ] Evolution of the Discipline
- [ ] Changing Prerequisites
- [ ] Address DWF Rates
- [ ] General Education Modifications
- [ ] Other (Please specify.)

Form

User ID: mark **Name:** Mark Smotherman

Date: 10/11/2017 **Number:** 34097

000003

Mark Smotherman Oct. 11, 2017

Chair, Department Curriculum Committee — Date

Mark Smotherman (for E. Kraemer)

Digitally signed by Mark Smotherman (for E. Kraemer)
DN: cn=Mark Smotherman (for E. Kraemer), o=Clemson University, ou=School of Computing, email=mark@clemson.edu, c=US
Date: 2017.10.11 13:20:23 -04'00'

Department Chair — Date

Christopher Kitchens 10/21/2017

Chair, College Curriculum Committee — Date

10/22/17

College Dean — Date

Director, Calhoun Honors College — Date

Chair, Undergraduate Curriculum Committee — Date

Chair, Graduate Curriculum Committee — Date

Robert W Jones 1/12/18

Provost — Date

President — Date

BS-CPSC DEGREE REQUIREMENTS AY18-19

Bachelor of Science in Computer Science

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Freshman Year

First Semester

3 – ENGL 1030 Composition and Rhetoric
4 – MATH 1060 Calculus of One Variable I
4 – Introduction to Computing Requirement[1]
4 – Natural Science Requirement[2]

15

Second Semester

4 – MATH 1080 Calculus of One Variable II
3 – Arts and Humanities (Non-Lit) Requirement[3]
4 – Introduction to Computing Requirement[1]
4 – Natural Science Requirement[2]

15

Sophomore Year

First Semester

3 – CPSC 2070 Discrete Structures for Computing[4]
4 – CPSC 2120 Algorithms and Data Structures
3 – Arts and Humanities (Literature) Requirement[3]
3 – Natural Science Requirement[2]
3 – Oral Communications Requirement[5]

16

Second Semester

3 – CPSC 2150 Software Development Foundations
4 – CPSC 2310 Intro. to Computer Organization
1 – CPSC 2910 Seminar in Professional Issues I
3 – STAT 3090 Introductory Business Statistics[6]
3 – Natural Science Requirement[2]
2 – Elective

16

Junior Year

First Semester

3 – CPSC 3300 Computer Systems Organization
3 – CPSC 3600 Networks and Network Program.
3 – CPSC 3720 Intro. to Software Engineering
3 – MATH 3110 Linear Algebra
3 – Social Science Requirement[3]

15

Second Semester

3 – CPSC 3220 Introduction to Operating Systems
~~3 – Arts and Humanities Requirement[7] *or*~~
~~3 – Social Science Requirement[7]~~
3 – Breadth Requirement[7]
3 – Computer Science Technical Requirement[8]
3 – Social Science Requirement[3]
3 – Theory Requirement[9]

15

Senior Year

First Semester

3 – CPSC 3520 Programming Systems
6 – Computer Science Technical Requirement[8]
3 – Writing Requirement[10]
3 – Elective

15

Second Semester

3 – CPSC 4910 Seminar in Professional Issues II
~~3 – Arts and Humanities Requirement[7] *or*~~
~~3 – Social Science Requirement[7]~~
3 – Breadth Requirement[7]
6 – Computer Science Technical Requirement[8]
3 – Elective

15

122 Total Semester Hours

[1] Select either the CPSC 1010 and 1020 sequence; or the CPSC 1060 and 1070 sequence. The sequence of CPSC 1110 and 1020 is also acceptable with one elective credit taken in the first semester.
[2] Two-semester sequence in the same physical or biological science, each including a laboratory, is required. Select from BIOL 1030/1050, 1040/1060; 1100, 1110; CH 1010, 1020; GEOL 1010/1030, 2020; 1010/1030, 1120/1140; PHYS 1220/1240, 2210/2230. The six remaining hours may be selected from BIOL, BCHM, CH, GEOL, MICR, PHYS; or ENSP 2000. Excess credits in the lab sciences can apply to the remaining science requirements.
[3] See General Education Requirements.
[4] MATH 1190 or MATH 4190 may be substituted.
[5] Select from: COMM 1500, 2500, HON 2230; or the cluster of courses AS 3090, 3100, 4090, 4100; or ML 1010, 1020.
[6] MATH 3020 or STAT 3300 may be substituted.
[7] Select from courses in AAH, ANTH, ART, CHIN, COMM, DANC, EAS, ECON, ENGL, FR, GEOG, GER, HIST, HUM, ITAL, JAPN, MUSC, PA, PAS, PHIL, POSC, PSYC, REL, RUSS, SOC, SPAN, THEA, WS. Courses applied to this requirement cannot also be applied to General Education requirements A-D.
[8] Select from 3000-level or higher CPSC courses or DPA 3070. No more than three credits of CPSC 3990 or 4810 may be applied to this requirement, and no more than six credits of CPSC 4820 may be applied. Up to three credits of ECE 3000-level or higher courses; or MATH 3650; or MATH 4000-level courses may be substituted. MATH 4190 may not substitute. Courses applied to this requirement cannot also be applied to other requirements of the major.
[9] Select either CPSC 3120 or 3500.
[10] Select from: ENGL 3040, 3120, 3140, 3150, 3160, 3330. ~~, AS 3090, 3100, 4090, 4100; ML 3010, 3020, 4010, 4020.~~

Notes:

1. For graduation, a candidate for the BS degree in Computer Science must have earned a grade of C or better in each CPSC course applied to the non-elective requirements of the degree.
2. A grade of C or better must be earned in all prerequisite courses (including CPSC and MATH courses) before enrolling in the next CPSC course.
3. General Education Cross-Cultural Awareness and Science and Technology in Society requirements must be satisfied.

Change Major

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If Gen Ed requirements are changed a separate Gen Ed Checklist form must accompany this form.

Major Name: Computer Science

Degree: Bachelor of Arts

Effective Catalog Year: 2018-2019

- [ ] Change Major Name to: CPSC
- [ ] Change Degree to: Bachelor of Arts
- [x] Change Curriculum Requirements
- [ ] Change General Education Requirements
- [ ] Add, Change, or Delete Concentration(s)
- [ ] Add, Change, or Delete Emphasis Area(s)

Curriculum Map: BA-CPSC-AY1819-20171010221736.docx

Description: revised course map BA-CPSC

Additional Information:

Description:

Summary/Explanation

1. Replace CPSC 2910 with 2920. CPSC 2920 has three credits instead of one and covers topics beyond CPSC 2910. CPSC 2920 also is an approved STS course and will assist our BA majors in understanding the role of computers in society. This change requires moving the Natural Science Requirement from the second semester of the Sophomore Year to the second semester of the Junior Year, moving three credits of the minor from the second semester of the Junior Year to the second semester of the Senior Year, and replacing three credits of general elective in the second semester of the Senior Year with one credit of general electives in the second semester of the Sophomore Year. The reduction in general electives outside the Freshman Year from three to one matches the difference of two credits when replacing CPSC 2910 with 2920.
2. Add "Technical" to "Computer Science Requirement". This will aid in advising and highlight that these are selected technical elective courses.
3. Allow MATH 4190 as a substitute for CPSC 2070 in footnote 5. MATH 4190 provides similar coverage of the topics found in CPSC 2070.
4. Disallow MATH 4190 as a substitute for the Computer Science Technical Requirement in footnote 9 since allowing MATH 4190 would allow the repeat of much of the material already covered in CPSC 2070.
5. Remove the AS and ML courses as options to satisfy the Writing Requirement since these courses do not focus on writing.
6. Add a mutual exclusion statement in footnote 11 to prevent double or triple counting a course between the Departmental Humanities Requirement, the Fine Arts Requirements, and/or the General Education Requirements A-D.
7. Add a mutual exclusion statement in footnote 12 to prevent double or triple counting a course between the Fine Arts Requirement, the Departmental Humanities Requirements, and/or the General Education Requirements A-D.
8. Add a new footnote that states that CPSC 2920 satisfies STS, and revise general note 3 to alert the student that only CCA remains to be satisfied.

Rationale for Change Major

- [x] Strengthen Program Requirement(s)
- [ ] Alignment of Student Learning Outcomes
- [ ] Alternative Delivery of Content
- [ ] Improve Time to Degree
- [ ] Evolution of the Discipline
- [ ] Changing Prerequisites
- [ ] Address DWF Rates
- [ ] General Education Modifications
- [ ] Other (Please specify.)

Form

User ID: mark Name: Mark Smotherman

Date: 10/11/2017 Number: 34099

Mark Smotherman Oct. 11, 2017 000006

Chair, Department Curriculum Committee Date

Mark Smotherman (for E. Kraemer) Digitally signed by Mark Smotherman (for E. Kraemer) DN: cn=Mark Smotherman (for E. Kraemer), o=Clemson University, ou=School of Computing, email=mark@clemson.edu, c=US Date: 2017.10.11 13:22:51 -04'00'

Department Chair Date

Christopher Kitchens 10/21/2017

Chair, College Curriculum Committee Date

10/22/17

College Dean Date

Director, Calhoun Honors College Date

11/3/2017

Chair, Undergraduate Curriculum Committee Date

Chair, Graduate Curriculum Committee Date

1/12/18

Provost Date

President Date

Bachelor of Arts in Computer Science

Freshman Year

First Semester

3 – ENGL 1030 Composition and Rhetoric
3 – MATH 1020 Business Calculus I[1] *or*
4 - MATH 1060 Calculus of One Variable I[1]
4 – Modern Language Requirement[2]
4 – Introduction to Computing Requirement[3]
1 – Elective[1]

15

Second Semester

3 – MATH 2070 Business Calculus II[1] *or*
4 - MATH 1080 Calculus of One Variable II[1]
3 – Arts and Humanities (Non-Lit.) Requirement[4]
4 – Modern Language Requirement[2]
4 – Introduction to Computing Requirement[3]
1 – Elective[1]

15

Sophomore Year

First Semester

3 – CPSC 2070 Discrete Structures for Computing[5]
4 – CPSC 2120 Algorithms and Data Structures
3 – Arts and Humanities (Literature) Requirement[4]
3 – Modern Language Requirement[2]
3 – Oral Communications Requirement[6]

16

Second Semester

3 – CPSC 2150 Software Development Foundations
4 – CPSC 2310 Intro. to Computer Organization
~~1 – CPSC 2910 Seminar in Professional Issues I~~
3 – CPSC 2920 Computing, Ethics, and Global Society[13]
3 – Modern Language Requirement[2]
~~4 – Natural Science Requirement[7]~~
1 – Elective

~~15~~ 14

Junior Year

First Semester

3 – STAT 3090 Introductory Business Statistics[8]
6 – Computer Science Technical Requirement[9]
3 – Minor Requirement
3 – Natural Science Requirement[7]

15

Second Semester

3 – Computer Science Technical Requirement[9]
~~6~~ 3 – Minor Requirement
3 – Social Science Requirement[4]
3 – Writing Requirement[10]
4 – Natural Science Requirement[7]

~~15~~ 16

Senior Year

First Semester

6 – Computer Science Technical Requirement[9]
3 – Departmental Humanities Requirement[11]
3 – Minor Requirement
3 – Social Science Requirement[4]

15

Second Semester

6 – Computer Science Technical Requirement[9]
3 – Fine Arts Requirement[12]
~~3~~ 6 – Minor Requirement
~~3 – Elective~~

15

121 Total Semester Hours

[1] Select either the MATH 1020/2070, 1060/2070 or 1060/1080 sequence. Students who select the 1060/1080 sequence will have satisfied the elective credits in the freshman year. Students interested in computer graphics should select the 1060/1080 sequence.
[2] Students must complete through 2020 in a modern language. See Modern Languages Requirement at Clemson University statement on page 27.
[3] Select either CPSC 1010 and 1020; or the CPSC 1060 and 1070 sequence. The sequence of CPSC 1110 and 1020 is also acceptable with one elective credit taken in the first semester.
[4] See General Education Requirements.
[5] MATH 1190 or MATH 4190 may be substituted.
[6] Select from: COMM 1500, 2500, HON 2230; or the cluster of courses AS 3090, 3100, 4090, 4100; or ML 1010, 1020.
[7] Select from courses in BIOL, BCHM, CH, GEOL, MICR, PHYS; or ENSP 2000. At least one course must include a laboratory and satisfy the Natural Science General Education requirement.
[8] MATH 3020 or MATH 3110 or STAT 3300 may be substituted. MATH 3110 is required for computer graphics courses.
[9] Select from 3000-level or higher CPSC courses or DPA 3070. No more than three credits of CPSC 3990 or 4810 may be applied to this requirement, and no more than six credits of CPSC 4820 may be applied. Up to three credits of ECE 3000-level or higher courses; or MATH 3650; or MATH 4000-level courses may be substituted. MATH 4190 may not substitute.
[10] Select from: ENGL 3040, 3120, 3140, 3150, 3160, 3330. ~~, AS 3090, 3100, 4090, 4100; ML 3010, 3020, 4010, 4020~~.
[11] Select from courses in AAH, ANTH, ART, CHIN, DANC, ENGL, FR, GER, HUM, ITAL, JAPN, MUSC, PA, PHIL, REL, RUSS, SPAN, THEA. A course applied to this requirement cannot also be applied to the Fine Arts Requirement or the General Education requirements A-D.
[12] MUSC 2100 or any course in AAH, ART, or THEA. A course applied to this requirement cannot also be applied to the Departmental Humanities Requirement or the General Education requirements A-D.
[13] CPSC 2920 satisfies the Science and Technology in Society Requirement.

Notes:

1. For graduation, a candidate for the BA degree in Computer Science must have earned a grade of C or better in each CPSC course applied to the non-elective requirements of the degree.
2. A grade of C or better must be earned in all prerequisite courses (including CPSC and MATH courses) before enrolling in the next CPSC course.
3. The General Education Cross-Cultural Awareness ~~and Science and Technology in Society~~ requirements must be satisfied.

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Change Major

If Gen Ed requirements are changed a separate Gen Ed Checklist form must accompany this form.

Major Name:	Computer Info Systems
Degree:	Bachelor of Science
Effective Catalog Year:	2018-2019
☐ Change Major Name to: CIS	Curriculum Map: BS-CIS-AY1819-20171010221426.docx
☐ Change Degree to: Bachelor of Science	Description: revised course map BS-CIS
☑ Change Curriculum Requirements	Additional Information:
☐ Change General Education Requirements	Description:
☐ Add, Change, or Delete Concentration(s)	
☐ Add, Change, or Delete Emphasis Area(s)	

Summary/Explanation

1. Add "Technical" to "Computer Science Requirement". This will aid in advising and highlight that these are selected technical elective courses.
2. Allow MATH 4190 as a substitute for CPSC 2070 in footnote 5. MATH 4190 provides similar coverage of the topics found in CPSC 2070.
3. Remove the AS and ML courses as options to satisfy the Writing Requirement since these courses are not writing-intensive.
4. Disallow MATH 4190 as a substitute for the Computer Science Technical Requirement in footnote 8 since allowing MATH 4190 would allow the repeat of much of the material already covered in CPSC 2070. Add a mutual exclusion statement to prevent double counting of required CPSC 3000-level courses as selected technical electives.
5. Add a mutual exclusion statement in footnote 10 to prevent double counting a course between the Economics Requirement and the Social Science General Education Requirement.
6. Add a mutual exclusion statement in footnote 12 to prevent double counting a course between the Information Systems Requirement and the other requirements for the major.

Rationale for Change Major

- ☑ Strengthen Program Requirement(s)
- ☐ Alignment of Student Learning Outcomes
- ☐ Alternative Delivery of Content
- ☐ Improve Time to Degree
- ☐ Evolution of the Discipline
- ☐ Changing Prerequisites
- ☐ Address DWF Rates
- ☐ General Education Modifications
- ☐ Other (Please specify.)

Form

User ID:	mark	Name:	Mark Smotherman
Date:	10/11/2017	Number:	34098

000016

Mark Smotherman Oct. 11, 2017

Chair, Department Curriculum Committee — Date

Mark Smotherman (for E. Kraemer) Digitally signed by Mark Smotherman (for E. Kraemer) DN: cn=Mark Smotherman (for E. Kraemer), o=Clemson University, ou=School of Computing, email=mark@clemson.edu, c=US Date: 2017.10.11 13:25:02 -04'00'

Department Chair — Date

Christopher Kitchens 10/21/2017

Chair, College Curriculum Committee — Date

10/22/17

College Dean — Date

Director, Calhoun Honors College — Date

11/3/2017

Chair, Undergraduate Curriculum Committee — Date

Chair, Graduate Curriculum Committee — Date

1/12/18

Provost — Date

President — Date

Bachelor of Science in Computer Information Systems

Freshman Year

First Semester

3 – ENGL 1030 Composition and Rhetoric
3 – MATH 1020 Business Calculus I[1] *or*
4 – MATH 1060 Calculus of One Variable I[1]
4 – Introduction to Computing Requirement[2]
4 – Natural Science Requirement[3]
1 – Elective[1]

15

Second Semester

3 – MATH 2070 Business Calculus II[1] *or*
4 - MATH 1080 Calculus of One Variable II[1]
3 – Arts and Humanities (Non-Lit.) Requirement[4]
4 – Introduction to Computing Requirement[2]
3 – Natural Science Requirement[3]
3 – Social Science Requirement[4]
1 – Elective[1]

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Sophomore Year

First Semester

3 – CPSC 2070 Discrete Structures for Computing[5]
4 – CPSC 2120 Algorithms and Data Structures
3 – Arts and Humanities (Literature) Requirement[4]
3 – Oral Communications Requirement[6]
3 – Social Science Requirement[4]

16

Second Semester

3 – CPSC 2150 Software Development Foundations
4 – CPSC 2310 Intro. to Computer Organization
1 – CPSC 2910 Seminar in Professional Issues I
3 – MGT 2010 Principles of Management
3 – STAT 3090 Introductory Business Statistics[7]

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Junior Year

First Semester

3 – ACCT 2010 Financial Accounting Concepts
3 – CPSC 2200 Microcomputer Applications
3 – CPSC 3220 Introduction to Operating Systems
3 – CPSC 3720 Intro. to Software Engineering
3 – Writing Requirement[8]

15

Second Semester

3 – ACCT 2020 Managerial Accounting Concepts
3 – CPSC 3600 Networks and Network Programming
3 – CPSC 3710 System Analysis *or*
3 – MGT 4520 Systems Analysis and Design
3 – Computer Science Technical Requirement[9]
3 – Economics Requirement[10]

15

Senior Year

First Semester

3 – CPSC 4200 Computer Security Principles *or*
3 – CPSC 4240 System Admin. and Security
3 – CPSC 4620 Database Management Systems
3 – CPSC 4910 Seminar in Professional Issues II
3 – Business Requirement[11]
3 – Computer Science Technical Requirement[9]

15

Second Semester

3 – MGT 3120 Decision Models for Management
3 – MKT 3010 Principles of Marketing
3 – Business Requirement[11]
3 – Computer Science Technical Requirement[9]
3 – Information Systems Requirement[12]

15

122 Total Semester Hours

[1] Select either the MATH 1020/2070, 1060/2070 or 1060/1080 sequence. Students who select the 1060/1080 sequence will have satisfied the two elective credits in the freshman year.
[2] Select either the CPSC 1010 and 1020 sequence; or the CPSC 1060 and 1070 sequence. The sequence of CPSC 1110 and 1020 is also acceptable with one elective credit taken in the first semester.
[3] Select from courses in BIOL, BCHM, CH, GEOL, MICR, PHYS; or ENSP 2000. At least one course must include a laboratory and satisfy the Natural Science General Education requirement.
[4] See General Education Requirements.
[5] MATH 1190 or MATH 4190 may be substituted.
[6] Select from: COMM 1500, 2500, HON 2230; or the cluster of courses AS 3090, 3100, 4090, 4100; or ML 1010, 1020.
[7] MATH 3020 or STAT 3300 may be substituted.
[8] Select from: ENGL 3040, 3120, 3140, 3150, 3160, 3330. ~~, AS 3090, 3100, 4090, 4100; ML 3010, 3020, 4010, 4020~~.
[9] Select from 3000-level or higher CPSC courses or DPA 3070. No more than three credits of CPSC 3990 or 4810 may be applied to this requirement, and no more than six credits of CPSC 4820 may be applied. Up to three credits of ECE 3000-level or higher courses; or MATH 3650; or MATH 4000-level courses may be substituted. MATH 4190 may not substitute. Courses applied to this requirement cannot also be applied to other requirements of the major.
[10] Select from ECON 2000, 2110, and 2120. The course applied to this requirement cannot also be applied to the Social Science Requirement.
[11] Select from MGT 3900, 4000 and FIN 3060.
[12] Select from MGT 4520, 4540, 4550, 4560, or any 4000-level CPSC course. CPSC 4810 may not substitute. Courses applied to this requirement cannot also be applied to other requirements of the major.

Notes:

1. For graduation, a candidate for the BS degree in Computer Information Systems must have earned a grade of C or better in each CPSC course applied to the non-elective requirements of the degree.
2. A grade of C or better must be earned in all prerequisite courses (including CPSC and MATH courses) before enrolling in the next CPSC course.
3. General Education Cross-Cultural Awareness and Science and Technology in Society requirements must be satisfied.

000013

Minor

Name: Kevin Finneran **Lead Dept:** Environmental Engr & Earth Sci

Change Minor

Effective Catalog Year: 2018-2019

☐

☑ **Change Minor Requirements:**

Current Catalog Description	Proposed Catalog Description
See attached	See attached

Summary / Explanation

Chang GEOL minor requirements from 20 credits to 16 credits, with additional electives available to meet the minor

Rationale for Change Minor

- ☐ Strengthen Program Requirement(s)
- ☐ Alignment of Student Learning Outcomes
- ☑ Alternative Delivery of Content
- ☑ Improve Time to Degree
- ☐ Evolution of the Discipline
- ☐ Changing Prerequisites
- ☐ Address DWF Rates
- ☐ General Education Modifications
- ☐ Other (Please specify.)

Form

User ID: ktf **Name:** Kevin Finneran
Date: 09/14/2017 **Number:** 33367

Kevin Thomas Finneran — Digitally signed by Kevin Thomas Finneran Date: 2017.09.18 12:52:57 -04'00'

000019

Chair, Department Curriculum Committee — Date

Department Chair — David L. Freeman — Date 9/18/2017

Chair, College Curriculum Committee — Christopher Kitchens — Date 10/21/2017

College Dean — Date 10/22/17

Director, Calhoun Honors College — Date

Chair, Undergraduate Curriculum Committee — John D. Kniffin — Date 11/3/2017

Chair, Graduate Curriculum Committee — Date

Provost — Robert H. Jones — Date 1/12/18

President — Date

GEOLOGY MINOR REQUIREMENTS

Current listing in UG Catalog

Geology (20 credits minimum)

A minor in Geology requires GEOL 1010/1030, 2020, and 12 additional credits in geology, at least nine of which must be drawn from 3000–4000-level geology courses.

Proposed listing in UG Catalog

Geology (16 credits minimum)

A minor in Geology requires GEOL 1010, 1030, and 12 additional credits in Geology, at least nine of which must be at the 3000 level or higher.

Explanation/Notes:

(1) The proposed change eliminates GEOL 2020 as a required course for the minor.

(2) The proposed change decreases the required number of credits from 20 to 16.

(3) After completing GEOL 1010 + 1030, the proposed change decreases the required number of geology courses from five to four (not taking into account 4-credit courses that include a laboratory).

(4) Although it would be possible to satisfy the minor with only three 4-credit courses after completing GEOL 1010 + 1030, that would be rather unlikely for a student to do because the 4-credit courses would all have labs associated with them.

(5) Based on our current offerings, a representative listing of courses that students would like use to satisfy the minor might be:

GEOL 1010 + 1030
GEOL 1120 or 2700 (or 2020 or 2050 + 2070 if students desire a lab)
GEOL 3000
Pick two 3-credit courses from among GEOL 3180, 3700, 3800, 4210 or 4820

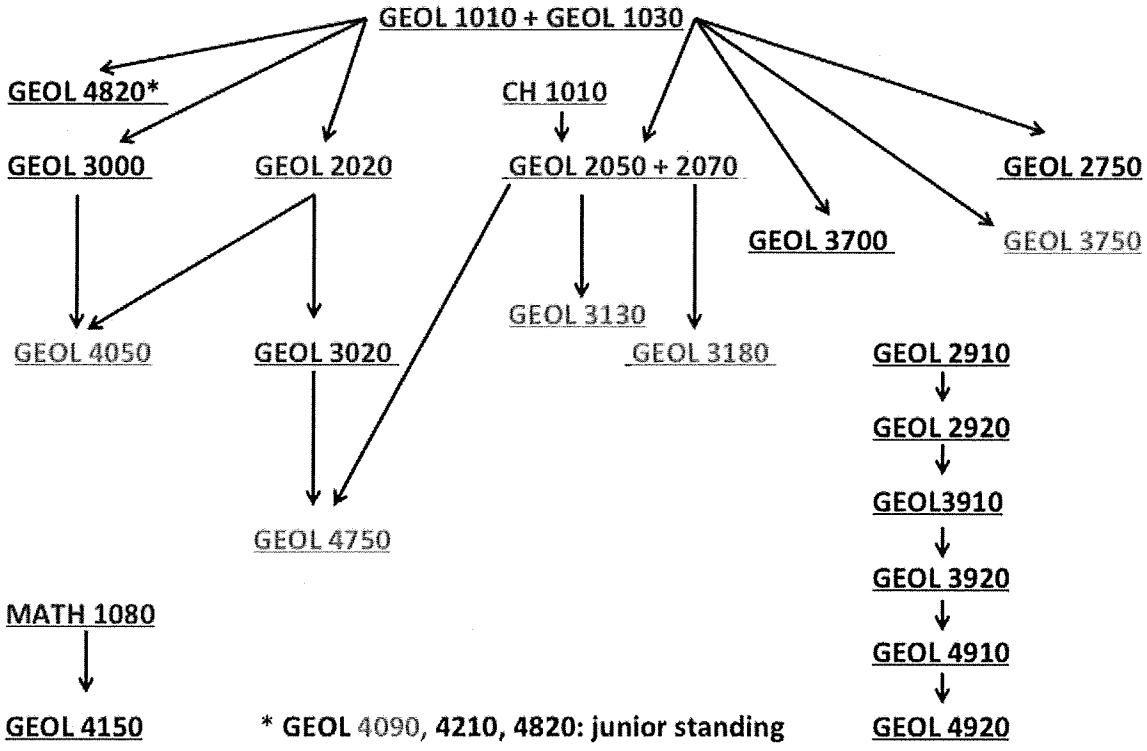
Of the 3-credit "pick two" geology courses above, GEOL 3180 is offered only alternating years. Plus, it has the prerequisite of GEOL 2050 + 2070. GEOL 3700 and 3800 are field courses. GEOL 4210 has a lab but is 3-credit hour course.

Alternatively, 4-credit courses with labs could be selected as indicated in (4) above. Such as GEOL 3020, 3130, 4050, 4090, or 4150. However, prerequisites become a major stumbling block – only GEOL 4090 has no stated course prerequisite listed (see following page). GEOL 3020 and 4150 are taught every year, whereas GEOL 3130, 4050 and 4090 are taught every other year.

From our geology handbook:

PREREQUISITES FOR GEOL COURSES

Purple = required of all GEOL majors
Orange = offered every other year



*** GEOL 4090, 4210, 4820: junior standing**

Change Undergraduate Course

000032

Change a Course

Subject: ENGR-Engineering
Number: 2100
Effective Term: Spring 2018
Title: CAD & Engineering Applications
Honors Course:
☐ Add Honors Course:
Last Term Course was taught: 201705

Brief Statement of Change Based on Assessment Results:
Change of course description and interaction of lecture and lab percentages

Rationale for Changing a Course

- ☐ **Strengthen Program Requirement(s)**
- ☐ **Alignment of Student Learning Outcomes**
- ☐ **Alternative Delivery of Content**
- ☐ **Improve Time to Degree**
- ☐ **Evolution of the Discipline**
- ☐ **Changing Prerequisites**
- ☐ **Address DWF Rates**
- ☐ **General Education Modifications**
- ☑ **Other (Please specify.)**

Updating course description and lecture/lab interaction

☑ Change Catalog Description

From Introduction to graphics applications for engineering and related professions. 2D and 3D drawings are used to visualize, communicate, rapid prototype and analyze engineering problems. Engineering applications include site plans, contour plots, grading, and architectural, transportation and hydrology drawings. Credit toward a degree will be given for only one of...

To Introduction to graphics applications for engineering and related professions. Two dimensional drawings and CAD tools are used to visualize, communicate, and analyze engineering problems. Engineering applications include contour plots, hydrology, transportation, architectural, and site plan drawings.

Learning Objectives

- Apply basic drawing principles to visually represent engineering problems
- Develop 2D drawings using industry standard graphical techniques
- Identify and accurately express drawings in ANSI and SI units and use dimensions to enhance the understanding of a drawing
- Demonstrate ability to read and modify existing engineering drawings
- Demonstrate ability to effectively communicate using electronic and hard copy drawings
- Use AutoCAD software to transform ideas into engineering drawings

000023

Topical Outline

1. Course Mechanics and Overview – 4 hours
a. Course and Technology Introduction (Canvas)
b. Introduction to Engineering Graphics
c. Getting started with AutoCAD
d. Testing

2. Software Skills (Designing with CAD) – 5 hours
a. Computer-Aided Design (CAD)
b. Basics of 2-Dimensional Drawings
c. Basics of 2-Dimensional Drawing Editing
d. Layers
e. Blocks
f. Dimensioning Techniques

3. Solving Engineering Problems & Professional Communication – 6 hours
a. Land Survey
i. Contour Map
ii. Survey systems

b. Hydrology
i. Drainage basin
ii. Floodplain

c. Road Design
i. Plan
ii. Profile
iii. Cross-section
iv. Earthwork

d. Architectural Drawing
i. Floor Plan
ii. Roof Plan
iii. Elevations
iv. Site Plan
v. Family of Working Drawings

e. Projects
i. Individual Project I
ii. Individual Project I
iii. Individual Project III

Evaluation

Undergraduate

A	90	-	100
B	80	-	89
C	70	-	79
D	60	-	69
F	<		60

Laboratories (i.e. From ENGR 2101) - 30%
Individual Projects (3) - 45%
Test (2) - 25%

Syllabus

Upload File: ENGR 2100 - Syllabus full-20171005160609.pdf

Description: ENGR 2100 Syllabus

Form

User ID: jminor **Name:** John Minor
Date: 10/05/2017 **Number:** 33964

000024

Chair, Department Curriculum Committee — Date: 10/5/2017

Department Chair — Date: 10/9/17

Chair, College Curriculum Committee — Date: 10/21/2017

College Dean — Date: 10/22/17

Director, Calhoun Honors College — Date

Chair, Undergraduate Curriculum Committee — Date: 11/3/2017

Chair, Graduate Curriculum Committee — Date

Provost — Date: 1/12/18

President — Date

Change Undergraduate Course

Change a Course

Subject: ME-Mechanical Engineering
Number: 4930
Effective Term: Fall 2018
Title: Selected Topics in Mech Engr
Honors Course:
☐ Add Honors Course:
Last Term Course was taught: 201701

Brief Statement of Change Based on Assessment Results:
This Course is currently a course that can be repeated up to 6 credits provided the topics of the courses are different. With new technology, innovations, and opportunities, the department is requesting the upper limit of repeatable hours change from 6 credits to 9 credits provided the courses are all different topics.

Rationale for Changing a Course

- ☑ **Strengthen Program Requirement(s)**
- ☐ **Alignment of Student Learning Outcomes**
- ☐ **Alternative Delivery of Content**
- ☐ **Improve Time to Degree**
- ☑ **Evolution of the Discipline**
- ☐ **Changing Prerequisites**
- ☐ **Address DWF Rates**
- ☐ **General Education Modifications**
- ☐ **Other (Please specify.)**

☑ Change Course Modifier

From	To
☐ Variable Title	☐ Variable Title
☐ Creative Inquiry	☐ Creative Inquiry
☑ Repeatable	☑ Repeatable
Max Credits: 6	**Max Credits:** 9

☑ Change Catalog Description

From Study of topics not found in other courses. Maybe be repeated for a maximum of six credits, but only if different topics are covered.

To Study of topics not found in other courses. Maybe be repeated for a maximum of nine credits, but only if different topics are covered.

Learning Objectives

no changes

Topical Outline

no changes

Evaluation

Undergraduate

A	90	-	100
B	80	-	89
C	70	-	79
D	60	-	69
F	<		60

No changes

Syllabus

Upload File: Syllabus not applicable here-20171011155246.docx

Description: No Changes

Form

User ID:	janeen	**Name:**	Janeen Putman
Date:	10/22/2017	**Number:**	34167

000027

Chair, Department Curriculum Committee — Date 10/20/17

Department Chair — Date

Christopher Kitchens — Date 10/21/2017

Chair, College Curriculum Committee — Date

College Dean — Date 10/22/17

Director, Calhoun Honors College — Date

Chair, Undergraduate Curriculum Committee — Date 11/3/2017

Chair, Graduate Curriculum Committee — Date

Provost — Date 1/12/18

President — Date

000023

Change Undergraduate Course

Change a Course

Subject: ME-Mechanical Engineering
Number: 3000
Effective Term: Fall 2018
Title: Junior Honors Seminar
Honors Course: ME 3000
☐ Add Honors Course:
Last Term Course was taught: 201701

Brief Statement of Change Based on Assessment Results:
This honors seminar is required for departmental honors to be taken twice, but currently is not repeatable. We are correcting this error though it is a 0 credit pass/no pass course.

Rationale for Changing a Course

- ☐ Strengthen Program Requirement(s)
- ☐ Alignment of Student Learning Outcomes
- ☐ Alternative Delivery of Content
- ☐ Improve Time to Degree
- ☐ Evolution of the Discipline
- ☐ Changing Prerequisites
- ☐ Address DWF Rates
- ☐ General Education Modifications
- ☑ Other (Please specify.)

Departmental Honors Requireements

☑ Change Course Modifier

From	To
☐ Variable Title	☐ Variable Title
☐ Creative Inquiry	☐ Creative Inquiry
☑ Repeatable	☑ Repeatable

Learning Objectives

No change

Topical Outline

No change

Evaluation

Undergraduate

A	90	-	100
B	80	-	89
C	70	-	79
D	60	-	69
F	<		60

No change (Pass/No Pass)

Syllabus

Upload File: Syllabus not applicable here-20171011154514.docx

Description: No Changes

Form

User ID: janeen **Name:** Janeen Putman
Date: 10/20/2017 **Number:** 34165

000029

Chair, Department Curriculum Committee — Date 10/20/17

Department Chair — Date

Christopher Kitchens — Date 10/21/2017

Chair, College Curriculum Committee — Date

College Dean — Date 10/22/17

Director, Calhoun Honors College — Date

Chair, Undergraduate Curriculum Committee — Date 11/3/2017

Chair, Graduate Curriculum Committee — Date

Robert H Jones — Date 1/12/18

Provost

President — Date

Change Undergraduate Course

Change a Course

Subject: ME-Mechanical Engineering
Number: 3120
Effective Term: Fall 2018
Title: Manuf Processes
Honors Course:
☐ Add Honors Course:
Last Term Course was taught: 201705

Brief Statement of Change Based on Assessment Results:
This course material requires some basic knowledge in Materials Science, but the prerequisiste does not indicate this. The course is already required in our program and would not create additional enrollments, but it would require students to have the course (MSE 2100 complete with a C or better before enrollment.

Rationale for Changing a Course

- ☐ Strengthen Program Requirement(s)
- ☐ Alignment of Student Learning Outcomes
- ☐ Alternative Delivery of Content
- ☐ Improve Time to Degree
- ☐ Evolution of the Discipline
- ☑ Changing Prerequisites
- ☐ Address DWF Rates
- ☐ General Education Modifications
- ☐ Other (Please specify.)

☑ Change Prerequisite(s) / Corequisite(s)

From	Preq or concurrent enrollment: ME 3040 and ME 3060 and ME 3330, each with a C or better.
To	Prereq: MSE 2100 with a C or better; Preq or concurrent enrollment: ME 3040 and ME 3060 and ME 3330, each with a C or better.

Learning Objectives

NO Changes

Topical Outline

No Changes

Evaluation

Undergraduate

A	90	-	100
B	80	-	89
C	70	-	79
D	60	-	69
F	<		60

No Changes

Syllabus

Upload File: Syllabus not applicable here-20171011154017.docx

Description: No Changes

Form

User ID: janeen **Name:** Janeen Putman
Date: 10/20/2017 **Number:** 34163

Chair, Department Curriculum Committee — Date 10/20/17

Department Chair — Date

Christopher Kitchens — Date 10/21/2017

Chair, College Curriculum Committee — Date

College Dean — Date 10/22/17

Director, Calhoun Honors College — Date

Chair, Undergraduate Curriculum Committee — Date 11/3/2017

Chair, Graduate Curriculum Committee — Date

Provost — Date 1/12/18

President — Date

Change Major

If Gen Ed requirements are changed a separate Gen Ed Checklist form must accompany this form.

Major Name: Civil Engineering

Degree: Bachelor of Science

Effective Catalog Year: 2017-2018

- ☐ Change Major Name to: CIVE
- ☐ Change Degree to: Bachelor of Science
- ☐ Change Curriculum Requirements
- ☐ Change General Education Requirements
- ☐ Add, Change, or Delete Concentration(s)
- ☑ Add, Change, or Delete Emphasis Area(s)

Curriculum Map: Emphasis Area Catalog1718 clean up vz3-20170913165146-20171011161455.pdf

Description: Corrections and changes needed to be made for clarification and correction.

Additional Information:

Description: Corrections and changes needed to be made for clarification and correction.

Summary/Explanation

There were corrections and changes that needed to be made to the current emphasis requirements. See attached file for changes. Construction Materials was not listed as an emphasis choice in previous catalogs. Applied Fluid Mechanics has now been changed to Water Resources Engineering. Construction is actually Construction Engineering and Management Emphasis area.

Rationale for Change Major

- ☐ Strengthen Program Requirement(s)
- ☐ Alignment of Student Learning Outcomes
- ☐ Alternative Delivery of Content
- ☐ Improve Time to Degree
- ☐ Evolution of the Discipline
- ☐ Changing Prerequisites
- ☐ Address DWF Rates
- ☐ General Education Modifications
- ☑ Other (Please specify.)

Emphasis modifications

Form

User ID: cwboldi Name: Candice Bolding

Date: 10/11/2017 Number: 33382

000033

10/11/17

Chair, Department Curriculum Committee — Date

11 Oct. 2017

Department Chair — Date

Christopher Kitchens — 10/21/2017

Chair, College Curriculum Committee — Date

10/22/17

College Dean — Date

Director, Calhoun Honors College — Date

11/3/2017

Chair, Undergraduate Curriculum Committee — Date

Chair, Graduate Curriculum Committee — Date

1/12/18

Provost — Date

President — Date

Justification: Construction Materials was not listed as an emphasis choice in previous catalogs. Applied Fluid Mechanics has now been changed to Water Resources Engineering. Construction is actually Construction Engineering and Management Emphasis area.

CHANGE From:

Applied Fluid Mechanics Emphasis Area—Two credits selected from CE 4430, 4460, 4470, 4620; and two credits selected from CE 4430, 4460, 4470, 4620, 4900, EES 4020

Construction Emphasis Area—Nine credits selected from CE 4330, 4340, 4360, 4380, 4390, 4560, 4570, 4910; and three credits selected from CE 4020, 4040, 4060, 4070, 4110, 4210, 4240, 4560, 4570, CSM 3040, 3050, 3510, 4530

Environmental Engineering Emphasis Area—Six credits selected from CE 4470, 4820, EES 4020, 4100, 4110, 4300, 4500, 4510, 4750, 4800; and six credits selected from CE 4900, any ENSP course or HIST 3920

Geotechnical/Geoenvironmental Engineering Emphasis Area—Three credits selected from CE 4210, 4240, 4910; and nine credits selected from CE 4020, 4210, 4240, 4570, 4820, 4900, 4910, EES 4800, 4840, GEOL 3000, 4210

Structural Engineering Emphasis Area—CE 4010, 4020 and 4060; and three additional credits selected from CE 4040, 4070, 4210, 4240, 4900

Transportation Engineering Emphasis Area—Six credits selected from CE 4100, 4110, 4120; and six credits selected from CE 4100, 4110, 4120, 4330, 4340, 4470, 4900, GEOG 3030, MGT 3050

TO:

Water Resources Engineering Emphasis Area—Total of 12 credits: Six credits selected from CE 4430, 4460, 4470, 4620; and six credits selected from CE 4430, 4460, 4470, 4620, 4820 , approved 4900, and approved 4910, EES 4020.

Construction Engineering and Management Emphasis Area— Total of 12 credits: Nine credits selected from CE 4330, 4340, 4360, 4380, 4390, approved 4900, and approved 4910; and three credits selected from CE 4020, 4040, 4060, 4070, 4110, 4210, 4240, CE 4330, 4340, 4360, 4380, 4390, CE 4020, 4040, 4060, 4070, 4110, 4210, 4240, 4560, 4570, approved 4900, and approved 4910, CSM 3040, 3050, 3510, 4530

Construction Materials Emphasis Area- Total of 12 credits: Six credit hours from CE 4560, 4570, approved 4910; six credit hours from CE 4020, 4110, 4210, 4240, 4330, 4340, 4470, CE 4560, 4570 approved 4900, and approved 4910, GEOL 3200.

Environmental Engineering Emphasis Area— Total of 12 credits: Six credits selected from CE 4470, 4820, EES 4020, 4100, 4110, 4300, 4500, 4510, 4750, 4800; and six credits selected from CE 4470, 4820, EES

4020, 4100, 4110, 4300, 4500, 4510, 4750, 4800, CE 4900, any 3000 level or above ENSP course, LAW 4290, HIST 3920

Geotechnical/Geoenvironmental Engineering Emphasis Area— Total of 12 credits: Six credits selected from CE 4210, 4240, approved 4900, and approved 4910; and six credits selected from CE 4020, 4210, 4240, 4560, 4570, 4820, approved 4900, and approved 4910, EES 4800, 4840, GEOL 3000, 4210

Structural Engineering Emphasis Area— Total of 12 credits: Nine credit hours from CE 4010, 4020, 4040, 4060, 4070, 4080; and three additional credits selected from from CE 4010, 4020, 4040, 4060, 4070, 4080, 4210, 4240, approved 4900, and approved 4910

Transportation Systems Emphasis Area— Total of 12 credits: Six credits selected from CE 4100, 4110, 4120; and six credits selected from CE 4100, 4110, 4120, 4210, 4240,4330, 4340, 4470, 4560, 4820 approved 4900, and approved 4910, CRP 4120, STAT 3300, GEOG 3030, , MGT 3050 from, CRP 4120, EES 4300