TO: The Faculty of the College of Engineering

FROM: The Lyles School of Civil Engineering of the College of Engineering

RE: Curriculum change for the B.S. Degree in Civil Engineering

The faculty of the Lyles School of Civil Engineering has approved the following new change in the curriculum for the B.S. degree in Civil Engineering effective for students entering the School in the Fall Semester 2018. This action is now submitted to the Engineering Faculty with a recommendation for approval.

New Requirement: A new honors course number has been established in First Year Engineering, ENGR 16200.

Reason: Incorporated ENGR 16200 into CE curriculum as acceptable for PHYS 17200

Rao S. Govindaraju
Bowen Engineering Head and Christopher B. and Susan S. Burke Professor
Lyles School of Civil Engineering

Current

Minimum Degree Requirements for Civil Engineering Accredited by the Engineering Accreditation Commission of ABET, www.abet.org. Credit Hours Required for Graduation: 132

Courses	Credit Hours
Mathematics and Physical Science	
Calculus: MA 16500, 16600, 26100, 26500, 26600	18
Statistics: STAT 51100	3
Chemistry: CHM 11500	4
Physics: PHYS 17200, 24100	7
Science Selective CHM 11600 or CS 15900	3
Engineering Design	
ENGR 13100, 13200, CGT 16400	6
First-Year (or other) Electives	
Communication and General Education	
English Composition: ENGL 10600 or 108	3
Speech: COM 11400	3
Basic Science Requirement‡	3
Humanities and Social Sciences*: Courses must be chosen in accordance with the School of Civil Engineering's general education policies and with the help of a faculty advisor	15
Core Engineering Courses	
Geomatics: CE 20300	4
Basic Mechanics/Materials: CE 23100, 27000, 29700, 29800, 33100, 34000, 34300	20
Contemporary Issues in CE: CE 29202	2
Technical Communication in Civil Engineering: CE 39201	2
Thermodynamics: ME 20000	3
Systems Design: CE 39800	3
Final Design Project: CE 49800 This course must be taken during the student's final semester.	3
Technical Electives† Courses selected with the help of a Faculty advisor to accommodate the student's Professional goals and to provide the student with sufficient design background. At least 21 of these credits must be CE-designated courses.	30

Proposed

Minimum Degree Requirements for Civil Engineering Accredited by the Engineering Accreditation Commission of ABET, www.abet.org. Credit Hours Required for Graduation: 132

Courses	Credit Hours
Mathematics and Physical Science	
Calculus: MA 16500, 16600, 26100, 26500, 26600	18
Statistics: STAT 51100	3
Chemistry: CHM 11500	4
Physics: PHYS 17200 **or ENGR 16200**, PHYS 24100	7
Science Selective: CHM 11600 or CS 15900	3
Engineering Design	
ENGR 13100, 13200, CGT 16400	6
First-Year (or other) Electives	
Communication and General Education	
English Composition: ENGL 10600 or 10800	3
Speech: COM 11400	3
Basic Science Requirement‡	3
Humanities and Social Sciences*: Courses must be chosen in accordance with the School of Civil Engineering's general education policies and with the help of a faculty advisor	15
Core Engineering Courses	
Geomatics: CE 20300	4
Basic Mechanics/Materials: CE 23100, 27000, 29700, 29800, 33100, 34000, 34300	20
Contemporary Issues in CE: CE 29202	2
Technical Communication in Civil Engineering: CE 39201	2
Thermodynamics: ME 20000	3
Systems Design: CE 39800	3
Final Design Project: CE 49800 This course must be taken during the student's final semester.	3
Technical Electives† Courses selected with the help of a Faculty advisor to accommodate the student's Professional goals and to provide the student with sufficient design background. At least 21 of these credits must be CE-designated courses.	30

Current

GPA Requirement

A graduation index of 2.0 or better is required for graduation with a B.S.CE degree. In addition, a minimum grade point average (GPA) of 2.0 is required in the core civil engineering (CE) (sophomore level or higher) to qualify for graduation.

*Fifteen of eighteen credit hours of general electives are chosen in accordance with the general education requirements of the College of Engineering and the following departmental requirements:

1. The program must contain at least 6 credit hours in the humanities.
2. The program must contain at least 6 credit hours in social sciences. It is strongly recommended that ECON 25100 be included in the program in social sciences.
3. CE Communication courses [CE29202 (1cr. of 2cr.) and CE 39201 (2 cr.)] will be counted towards 3 cr. hrs. of the 18 credit hours of required general education electives.
4. All general education courses must be taken for a grade.

†Thirty credit hours of Technical electives are chosen in accordance with the following requirements:

1. The elective course program shall be consistent with career objectives. For instance one can elect to concentrate on a major in a specialized area with an integrated sequence of courses or can choose a general program in civil engineering by taking courses in several areas.
2. At least 12 credit hours must be chosen from an approved list of introductory civil engineering courses to provide breadth of study.
3. At least 9 credit hours must be chosen from an approved list of design-intensive civil engineering courses.

‡The Basic Science requirement courses are chosen from an approved list. Examples include BIOL 11000, 12100 & 28600, 14600, 23000, or EAS 10000, 10400, 11100, 12000, 22100. See an advisor for current approved list.

Proposed

GPA Requirement

A graduation index of 2.0 or better is required for graduation with a B.S.CE degree. In addition, a minimum grade point average (GPA) of 2.0 is required in the core civil engineering (CE) (sophomore level or higher) to qualify for graduation.

*Fifteen of eighteen credit hours of general electives are chosen in accordance with the general education requirements of the College of Engineering and the following departmental requirements:

1. The program must contain at least 6 credit hours in the humanities.
2. The program must contain at least 6 credit hours in social sciences. It is strongly recommended that ECON 25100 be included in the program in social sciences.
3. CE Communication courses [CE 29202 (1cr. of 2 cr.) and CE 39201 (2 cr.)] will be counted towards 3 cr. hrs. of the 18 credit hours of required general education electives.
4. All general education courses must be taken for a grade.

†Thirty credit hours of Technical electives are chosen in accordance with the following requirements:

1. The elective course program shall be consistent with career objectives. For instance, one can elect to concentrate on a major in a specialized area with an integrated sequence of courses or can choose a general program in civil engineering by taking courses in several areas.
2. At least 12 credit hours must be chosen from an approved list of introductory civil engineering courses to provide breadth of study.
3. At least 9 credit hours must be chosen from an approved list of design-intensive civil engineering courses.

‡The Basic Science requirement courses are chosen from an approved list. Examples include BIOL 11000, 12100 & 28600, 14600, 23000 or **EAPS** 10000, 10400, 11100, 12000, 22100. See an advisor for current approved list.

Current

4. At least 21 credit hours must be CE designated courses that must include two integrated sequences with a minimum of six credit hours in each.
5. The remaining credit hours required must be selected in support of the career objectives of the student. See an advisor for current policies.

Core Course Policy Grades

Students in the School of Civil Engineering must satisfy a core course policy to graduate. A core course is defines as any course required for graduation with a Bachelor of Science in Civil Engineering degree that is not required by the First-Year Engineering (FYE) program.

The policy is as follows:

1. A student must earn a grade of "C-"or better in all core courses.
2. A student must earn a grade of "C-"or better in a core course in order to use the course as a prerequisite.
3. A student shall be dismissed from the School of Civil Engineering after three attempts to complete a core course where each attempt resulted in a grade of "D+", "D", "D-", "E", "F", or "WF". A grade of "W' does not count toward the three attempts. Re-Entry will be solely at the discretion of the Civil Engineering Undergraduate Committee and will be reviewed on a case-by-case basis. The Undergraduate Committee has the prerogative to set the requirements, if any, for re-entry.
4. Technical electives and general education electives are not subject to this policy. Also, the Science Selective from the FYE program is not subject to this policy.

English Requirement

Students in the School of Civil Engineering must receive a grade of "C-" or better in a first course in English composition to graduate.

Proposed

4. At least 21 credit hours must be CE designated courses that must include two integrated sequences with a minimum of six credit hours in each.
5. The remaining credit hours required must be selected in support of the career objectives of the student. See an advisor for current policies.

Core Course Policy and Grades

Students in the **Lyles** School of Civil Engineering must satisfy a core course policy to graduate. A core course is defined as any course required for graduation with a Bachelor of Science in Civil Engineering degree that is not required by the First-Year Engineering (FYE) program.

The policy is as follows:

1. A student must earn a grade of "C-" or better in all core courses.
2. A student must earn a grade of "C-"or better in a core course in order to use the course as a prerequisite.
3. A student shall be dismissed from the **Lyles** School of Civil Engineering after three attempts to complete a core course where each attempt resulted in a grade of "D+", "D", "D-", "E", "F", or "WF". A grade of "W" **does count** toward the three attempts. Re-Entry will be solely at the discretion of the Civil Engineering Undergraduate Committee and will be reviewed on a case-by-case basis. The Undergraduate Committee has the prerogative to set the requirements, if any, for re-entry.
4. Technical electives and general education electives are not subject to this policy. Also the Science Selective from the FYE program is not subject to this policy.

English Requirement

Students in the **Lyles** School of Civil Engineering must receive a grade of "C-" or better in a first course in English composition to graduate.

Current	*Proposed*
Plan of Study for Civil Engineering:	**Plan of Study for Civil Engineering:**
Credit Hours Required for Graduation: 132	**Credit Hours Required for Graduation: 132**
Freshman Year, see First -Year Engineering: 31	**Freshman Year,** see First-Year Engineering: 31
Communications. COM 11400 is a required course in the civil engineering curriculum and should be taken in the freshman year. General Education Elective I*. A total of 18 credit hours of General Education electives are required by Civil Engineering and a 3 cr. hr. course should be taken in the freshman year. **Science Selective. CHM 11600** is the recommended course and should be taken in the freshman year.	**Communications. COM 11400** is a required course in the civil engineering curriculum and should be taken in the freshman year. General Education Elective I*. A total of 18 credit hours of General Education electives are required by Civil Engineering and a 3 cr. hr. course should be taken in the freshman year. **Science Selective. CHM 11600** is the recommended course and should be taken in the freshman year.

Sophomore Year

Third Semester			
(4)	CE	20300	Principles & Practices of Geomatics
(2)	CE	29202	Contemporary Issues in CE
(3)	CE	29700	Basic Mechanics I: Statics
(4)	MA	26100	Multivariate Calculus
(3)	PHYS	24100	Electricity and Optics
(2)	CGT	16400	Computer Graphics
(18)	TOTAL		

Fourth Semester			
(3)	CE	23100	Engineering Materials I
(4)	CE	27000	Intro Structural Mechanics
(3)	CE	29800	Basic Mechanics II: Dynamics
(3)	MA	26500	Linear Algebra
(3)	General Education Elective II*		
(16)	TOTAL		

Sophomore Year

Third Semester			
(4)	CE	20300	Principles & Practices of Geomatics
(2)	CE	29202	Contemporary Issues in CE
(3)	CE	29700	Basic Mechanics I: Statics
(4)	MA	26100	Multivariate Calculus
(3)	PHYS	24100	Electricity and Optics
(2)	CGT	16400	Computer Graphics
(18)	TOTAL		

Fourth Semester			
(3)	CE	23100	Engineering Materials I
(4)	CE	27000	Intro Structural Mechanics
(3)	CE	29800	Basic Mechanics II: Dynamics
(3)	MA	26500	Linear Algebra
(3)	General Education Elective II*		
(16)	TOTAL		

Current

Civil Engineering
Junior Year
Fifth Semester

(3)	CE	33100	Engineering Materials II
(3)	CE	34000	Hydraulics
(1)	CE	34300	Elementary Hydraulics Laboratory
(3)	MA	26600	Ordinary Differential Equations
(3)	General Education Elective III*		
(3)	Technical Elective I†		
(16)	TOTAL		

Proposed

Civil Engineering
Junior Year
Fifth Semester

(3)	CE	33100	Engineering Materials II
(3)	CE	34000	Hydraulics
(1)	CE	34300	Elementary Hydraulics Laboratory
(3)	MA	26600	Ordinary Differential Equations
(3)	General Education Elective III*		
(3)	Technical Elective I†		
(16)	TOTAL		

Civil Engineering
Junior Year
Sixth Semester

(3)	STAT	51100	Statistical Methods
(3)	CE	39800	Intro to Civil Engineering System Design
(3)	Basic Science Requirement‡		
(2)	CE	39201	Technical Communication in Civil Engineering
(3)	Technical Elective II†		
(3)	Technical Elective III†		
(17)	TOTAL		

Civil Engineering
Junior Year
Sixth Semester

(3)	STAT	51100	Statistical Methods
(3)	CE	39800	Intro to Civil Engineering System Design
(3)	Basic Science Requirement‡		
(2)	CE	39201	Technical Communication in Civil Engineering
(3)	Technical Elective II†		
(3)	Technical Elective III†		
(17**)**	TOTAL		

Current	*Proposed*
Civil Engineering **Senior Year** **Seventh Semester**	**Civil Engineering** **Senior Year** **Seventh Semester**
(3) ME 20000 Thermodynamics I	(3) ME 20000 Thermodynamics I
(3) General Education Elective V*	(3) General Education Elective IV*
(3) Technical Elective IV†	(3) Technical Elective IV†
(3) Technical Elective V†	(3) Technical Elective V†
(3) Technical Elective VI†	(3) Technical Elective VI†
(3) Technical Elective VII†	(3) Technical Elective VII†
(18) Total	(18) Total

Civil Engineering **Senior Year** **Eighth Semester**	**Civil Engineering** **Senior Year** **Eighth Semester**
(3) CE 49800 Civil Engineering Design Project	(3) CE 49800 Civil Engineering Design Project
(3) General Education Elective VI*	(3) General Education Elective V*
(3) Technical Elective VIII†	(3) Technical Elective VIII†
(3) Technical Elective IX†	(3) Technical Elective IX†
(3) Technical Elective X †	(3) Technical Elective X†
(15) Total	(15) Total

* Fifteen of eighteen credit hours of general electives are chosen in accordance with the general education requirements of the College of Engineering and the following departmental requirements:

1. The program must contain at least 6 credit hours in the humanities.
2. The program must contain at least 6 credit hours in social sciences. It is strongly recommended that ECON 25100 be included in the program in social sciences.
3. CE Communication courses [CE 29202 (1cr. of 2 cr.) and CE 39201 (2 cr.)] will be counted towards 3 cr. hrs. of the 18 credit hours of required general electives.
4. All general education courses must be taken for a grade.

†Thirty credit hours of Technical electives are chosen in accordance with the following requirements:

1. The elective course program shall be consistent with career objectives. For instance, one can elect to concentrate on a major in a specialized area with an integrated sequence of courses or can choose a general program in civil engineering by taking courses in several areas.
2. At least 12 credit hours must be chosen from an approved list of introductory civil engineering courses to provide breadth of study.
3. At least 9 credit hours must be chosen from an approved list of design-intensive civil engineering courses.
4. At least 21 credit hours must be CE designated courses that must include two integrated sequences with a minimum of six credit hours in each.
5. The remaining credit hours required must be selected in support of the career objectives of the student. See an advisor for current policies.

‡The Basic Science Requirement courses are chosen from an approved list. Examples include: BIOL 11000, 12100 & 28600, 14600, 23000 or EAS 10000, 10400, 11100, 12000, 22100. See advisor for current approved list.

*Fifteen of eighteen credit hours of general electives are chosen in accordance with the general education requirements of the College of Engineering and the following departmental requirements:

1. The program must contain at least 6 credit hours in the humanities.
2. The program must contain at least 6 credit hours in social sciences. It is strongly recommended that ECON 25100 be included in the program in social sciences.
3. CE Communication courses [CE 29202 (1cr. of 2 cr.) and CE 39201 (2 cr.)] will be counted towards 3 cr. hrs. of the 18 credit hours of required general electives.
4. All general education courses must be taken for a grade.

†Thirty credit hours of Technical electives are chosen in accordance with the following requirements:

1. The elective course program shall be consistent with career objectives. For instance, one can elect to concentrate on a major in a specialized area with an integrated sequence of courses or can choose a general program in civil engineering by taking courses in several areas.
2. At least 12 credit hours must be chosen from an approved list of introductory civil engineering courses to provide breadth of study.
3. At least 9 credit hours must be chosen from an approved list of design-intensive civil engineering courses.
4. At least 21 credit hours must be CE designated courses that must include two integrated sequences with a minimum of six credit hours in each.
5. The remaining credit hours required must be selected in support of the career objectives of the student. See an advisor for current policies.

‡The Basic Science Requirement courses are chosen from an approved list. Examples include: BIOL 11000, 12100 & 28600, 14600, 23000 or **EAPS** 10000, 10400, 11100, 12000, 22100. See advisor for current approved list.