

#### A MEMORANDUM

DATE:

January 19, 2017

TO:

Academic Deans Council

FROM:

Dr. Dana Pomykal Franz, Chair

UCCC Chair

RE:

Change Notice 5

Listed below are curriculum change proposals which have been recommended by the University Committee Courses and Curricula. Under current procedure, members of the Academic Deans Council may question the approval of these proposals at any time prior to 5:00 p.m. on February 1, 2017 by contacting Dr. Dana Pomykal Franz (5-7117) or the office of the Vice President for Academic Affairs (5-3742). If no questions have been raised, the proposals will be considered approved automatically.

# 1. Course Proposals

## **BUSINESS**

| Technical Change | FIN 4733 | Approved | FROM: FIN 4733 Advanced Bank                     |
|------------------|----------|----------|--|
|                  |          |          | Management. (3). (Prerequisites: ACC 3203,       |
|                  |          |          | FIN 4423, and FIN 4723.) Three hours seminar.    |
|                  |          |          | Applications of financial management             |
|                  |          |          | techniques to bank management decisions          |
|                  |          |          | through experiential learning opportunities.     |
|                  |          |          | Computer-based analysis, simulations, and        |
|                  |          |          | written and oral presentations.                  |
|                  |          |          | TO: FIN 4733 Advanced Bank Management.           |
|                  |          |          | (3). (Prerequisites: FIN 4723 or FIN 3123 and    |
|                  |          |          | Instructor Consent.) Three hours seminar.        |
|                  |          |          | Applications of financial management             |
|                  |          |          | techniques to bank management decisions          |
|                  |          |          | through experiential learning opportunities.     |
|                  |          |          | Computer-based analysis, simulations, and        |
|                  |          |          | written and oral presentations.                  |
|                  |          |          | Effective: Spring 2017                           |
| Technical Change | MKT 3323 | Approved | FROM: MKT 3323 International Logistics.          |
|                  |          | PP       | (3). Three hours lecture. Understanding and      |
|                  |          |          | applying logistics concepts in a global context. |
|                  |          |          | Includes analysis of logistics tradeoffs and     |
|                  |          |          | integration with other business functions.       |
|                  |          |          | TO: MKT 3323 International Logistics. (3).       |
|                  |          |          | Three hours lecture. Understanding and           |
|                  |          |          | applying logistics concepts in a global context. |
|                  |          |          | Includes analysis of logistics tradeoffs and     |
|                  |          |          | integration with other business functions. Must  |
|                  |          |          | be of junior standing or higher.                 |
|                  |          |          | Effective: Spring 2017                           |

### **EDUCATION**

| EDUCATION    |                |            |   |
|--------------|----------------|------------|---|
| Addition     | <u>KI 8543</u> | Passed     | KI 8543 Postural and Locomotor            |
|              |                | Contingent | Rehabilitation                            |
| Addition     | KI 8553        | Passed     | KI 8553 Exercise Management for           |
|              |                | Contingent | Persons with Disabilities                 |
| Addition     | KI 8563        | Passed     | KI 8563 Motor Behavior in Special         |
|              |                | Contingent | Populations                               |
| Modification | KI 8603        | Passed     | FROM: EP 8603 Disability, Physical        |
|              |                | Contingent | Activity and Health.                      |
|              |                |            | TO: KI 8603 Disability, Physical Activity |
|              |                |            | and Health                                |

## **ENGINEERING**

| Technical Change | CE 2803        | Approved | FROM: CE 2803 Environmental                      |
|------------------|----------------|----------|--|
| Tochincal Change | <u>CE 2003</u> | Approved | Engineering Issues. (3). (Prerequisite: Grade    |
|                  |                |          | of C or better in CH 1223). Three hours lecture. |
|                  |                |          | An overview of the scientific, social and legal  |
|                  |                |          | issues impacting environmental management        |
|                  |                |          | and protection in the United States.             |
|                  |                |          |  |
|                  |                |          | TO: CE 2803 Environmental Engineering            |
|                  |                |          | Issues. (3). (Prerequisite: Grade of C or better |
|                  |                |          | in CH 1213 and CH 1223). Three hours lecture.    |
|                  |                |          | An overview of the scientific, social and legal  |
|                  |                |          | issues impacting environmental management        |
|                  |                |          | and protection in the United States.             |
|                  |                |          | Effective Date: Spring 2017                      |
| Technical Change | <u>CE 3801</u> | Approved | FROM: CE 3801 Environmental                      |
|                  |                |          | Engineering and Water Resources                  |
|                  |                |          | Engineering Lab. (1). (Co-requisite: Credit      |
|                  |                |          | or concurrent enrollment enollment [sic] in CE   |
|                  |                |          | 3803). Three hours laboratory. A laboratory      |
|                  |                |          | introduction to processes and operations used in |
|                  |                |          | systems for water supply and wastewater          |
|                  |                |          | reclamation.                                     |
|                  |                |          | TO: CE 3801 Environmental Engineering            |
|                  |                |          | and Water Resources Engineering Lab. (1).        |
|                  |                |          | (Co-requisite: Credit or concurrent enrollment   |
|                  |                |          | in CE 3823). Three hours laboratory. A           |
|                  |                |          | laboratory introduction to processes and         |
|                  |                |          | operations used in systems for water supply and  |
|                  |                |          | wastewater reclamation.                          |
|                  |                |          | Effective: Spring 2017                           |
| Technical Change | CE 4103/6103   | Approved | FROM: CE 4103/6103 Pavement Design.              |
|                  |                | **       | (3). (Prerequisite: Grade of C or better in CE   |
|                  |                |          | 3413 and CE 3313). Three hours lecture.          |
|                  |                |          | Analysis design of both flexible and rigid       |
|                  |                |          | pavement structures.                             |
|                  |                |          | TO: CE 4103/6103 Pavement Design. (3).           |
|                  |                |          | (Prerequisite: Grade of C or better in CE 3313;  |
|                  |                |          | or consent of major advisor). Three hours        |
|                  |                |          | lecture. Analysis design of both flexible and    |
|                  |                |          | rigid pavement structures.                       |
|                  |                |          | Effective: Spring 2017                           |
| L                |                |          | Effective. Spring 2017                           |

| Technical Change CE 4133/6133 | Approved | FROM: CE 4133/6133 Geometric Design of Highways. (3). (Prerequisite: Grade of C or better in CE 3113). Three hours lecture. Highway finance, organization and planning. Economic analysis. Elements of highway and street design. Computer applications to highway engineering.  TO: CE 4133/6133 Geometric Design of Highways. (3). (Prerequisite: Grade of C or better in CE 3113; consent of major advisor). Three hours lecture. Highway finance, organization and planning, economic analysis, elements of highway and street design, computer applications to highway engineering. Effective: Spring 2017  |
|-------------------------------|----------|--|
| Technical Change CE 4143/6143 | Approved | FROM: CE 4143/6143 Traffic Engineering. (3). (Prerequisite: Grade of C or better in CE 3113, credit in ST 3123; or consent of major advisor). Three hours lecture. Three hours lecture. Human and vehicular characteristics as they affect highway traffic flow; traffic regulation, accident cause and prevention; improving flow on existing facilities; planning traffic systems.  TO: CE 4143/6143 Traffic Engineering. (3). (Prerequisite: Grade of C or better in CE 3113, grade of C or better in ST 3123; or consent of major advisor). Three hours lecture. Human and vehicular characteristics as they affect highway traffic flow; traffic regulation, accident cause/prevention; improving flow on existing facilities; planning traffic systems. Effective: Spring 2017 |
| Technical Change CE 4153/6153 | Approved | FROM: CE 4153/6153 Freight Transportation System. (3). (Prerequisite: CE 3113 and consent of instructor). Three hours lecture. Definition, taxonomy and emerging issues for multi-modal transportation systems with focus on freight transportation and mathematical models for complex logistics and supply chain systems. TO: CE 4153/6153 Freight Transportation System. (3). (Prerequisite: CE 3113 and consent of instructor; or consent of major advisor). Three hours lecture. Definition, taxonomy and emerging issues for multi-modal transportation systems with focus on freight transportation and mathematical models for complex logistics and supply chain systems. Effective: Spring 2017  |

| Technical Change   | CF 4163/6163        | Approved | FROM: CE 4163/6163 Urban  |
|--------------------|---------------------|----------|---|
| recilificat Change | <u>CL 4103/0103</u> | Approved | Transportation Planning. (3). (Prerequisite:  |
|                    |                     |          |   |
|                    |                     |          | CE 3113 and consent of instructor). Three hours   |
|                    |                     |          | lecture. This course will provide an  |
|                    |                     |          | understanding of the nature of travel demand  |
|                    |                     |          | and methods and computer software used to   |
|                    |                     |          | plan for future transportation systems.   |
|                    |                     |          | TO: CE 4163/6163 Urban Transportation   |
|                    |                     |          | Planning. (3). (Prerequisite: CE 3113 and   |
|                    |                     |          | consent of instructor; or consent of major  |
|                    |                     |          | advisor). Three hours lecture. This course will   |
|                    |                     |          | provide an understanding of the nature of travel  |
|                    |                     |          | demand and methods and computer software  |
|                    |                     |          | used to plan for future transportation systems.   |
|                    |                     |          | Effective: Spring 2017  |
| Technical Change   | CE 4192/6192        | Ammanad  | FROM: CE 4183/6183 Waterborne   |
| Technical Change   | CE 4103/0103        | Approved | •   |
|                    |                     |          | Transportation Engineering. (3).  |
|                    |                     |          | (Prerequisite: Grade of C or better in CE 3113).  |
|                    |                     |          | Three hours lecture .Navigation vessels and   |
|                    |                     |          | their characteristics. Planning and design of   |
|                    |                     |          | Marine Transportation System facilities   |
|                    |                     |          | including navigation ports, channels and locks.   |
|                    |                     |          | TO: CE 4183/6183 Waterborne   |
|                    |                     |          | Transportation Engineering. (3).  |
| <br> -             |                     |          | (Prerequisite: Grade of C or better in CE 3113;   |
|                    |                     |          | or consent of major advisor). Three hours   |
|                    |                     |          | lecture. Navigation vessels and their   |
|                    |                     |          | characteristics. Planning and design of Marine  |
|                    |                     |          | Transportation System facilities including  |
|                    |                     |          | navigation ports, channels and locks.   |
|                    |                     |          | Effective: Spring 2017  |
| Technical Change   | CE 4243/6243        | Approved | FROM: CE 4243/6243 Land Surveys. (3).   |
|                    |                     |          | (Prerequisites: Grade of C or better in CE  |
|                    |                     |          | 2213). Three hours lecture. Methods of  |
|                    |                     |          | surveying and describing property with  |
|                    |                     |          | emphasis on Mississippi's public land surveys.  |
|                    |                     |          |   |
|                    |                     |          | (Prerequisites: Grade of C or better in CE 2213;  |
|                    |                     |          | or consent of major advisor). Three hours   |
|                    |                     |          |   |
|                    |                     |          | property with emphasis on Mississippi's public  |
|                    |                     |          | land surveys.   |
|                    |                     |          |   |
|                    |                     |          | TO: CE 4243/6243 Land Surveys. (3). (Prerequisites: Grade of C or better in CE 2213; or consent of major advisor). Three hours lecture. Methods of surveying and describing |

| Technical Change <u>CE 4433/6433</u> | Approved | FROM: CE 4433/6433 Foundations. (3).              |
|--------------------------------------|----------|---|
|                                      |          | (Prerequisite: Grade of C or better in CE         |
|                                      |          | 3413). Three hours lecture. Introduction to       |
|                                      |          | exploration and engineering evaluation of         |
|                                      |          | subsoil and groundwater conditions for selection  |
|                                      |          | and design of foundations for structures and      |
|                                      |          | earth masses.                                     |
|                                      |          | <b>TO:</b> CE 4433/6433 Foundations. (3).         |
|                                      |          | (Prerequisite: Grade of C or better in CE 3413;   |
|                                      |          | or consent of major advisor). Three hours         |
|                                      |          | lecture. Introduction to exploration and          |
|                                      |          | engineering evaluation of subsoil and             |
|                                      |          | groundwater conditions for selection and design   |
|                                      |          | of foundations for structures and earth masses.   |
|                                      |          | Effective: Spring 2017                            |
| Technical Change CE 4513/6513        | Approved | FROM: CE 4513/6513 Engineering                    |
| _                                    |          | Hydrology. (3). (Prerequisite: CE 3523). Three    |
|                                      |          | hours lecture. Hydrologic processes; rainfall-    |
|                                      |          | runoff analysis; groundwater flow; frequency      |
|                                      |          | analysis; hydrologic design.                      |
|                                      |          | TO: CE 4513/6513 Engineering Hydrology.           |
|                                      |          | (3). (Prerequisite: grade of C or better in CE    |
| 1                                    |          | 3503; or consent of major advisor). Three hours   |
|                                      |          | lecture. Hydrologic processes; rainfall-runoff    |
|                                      |          | analysis; groundwater flow; frequency analysis;   |
|                                      |          | hydrologic design.                                |
|                                      |          | Effective: Spring 2017                            |
| Technical Change CE 4523/6523        | Approved | FROM: CE 4523/6523 Open Channel                   |
|                                      | ••       | Hydraulics. (3). (Prerequisite Grade of C or      |
|                                      |          | better in CE 3813). Three hours lecture.          |
|                                      |          | Continuity. [sic] Energy and momentum             |
|                                      |          | principles in open channel flow; flow resistance; |
|                                      |          | uniform and non-uniform flow; channel controls    |
|                                      |          | and transitions; unsteady flow routing.           |
|                                      |          | TO: CE 4523/6523 Open Channel                     |
|                                      |          | Hydraulics. (3). (Prerequisite: Grade of C or     |
|                                      |          | better in CE 3503; or consent of major advisor).  |
|                                      |          | Three hours lecture. Continuity, energy and       |
|                                      |          | momentum principles in open channel flow,         |
|                                      |          | flow resistance, uniform and non-uniform flow,    |
|                                      |          | channel controls and transitions, unsteady flow   |
|                                      |          | routing.  |
|                                      |          | Effective: Spring 2017                            |

| T1-1-1 Cl OF 4522/6522                | •        | EDOM OF 4522/6522 C                               |
|---------------------------------------|----------|---|
| Technical Change <u>CE 4533</u> /6533 | Approved | FROM: CE 4533/6533 Computational                  |
|                                       |          | Methods in Water Resources Engineering.           |
|                                       |          | (3). (Prerequisite: Grade of C or better in CE    |
|                                       |          | 3813). Three hours lecture. Review of relevant    |
|                                       |          | numerical analysis; numerical methods for         |
|                                       |          | kinematic wave, St. Venant, Boussinesq and        |
|                                       |          | depth-averaged [sic] equations; simulation of     |
|                                       |          | one- and two-dimensional free-surface flows.      |
|                                       |          | TO: CE 4533/6533 Computational Methods            |
|                                       |          | in Water Resources Engineering. (3).              |
|                                       |          | (Prerequisite: Grade of C or better in CE 3503;   |
|                                       |          | or consent of major advisor). Three hours         |
|                                       |          | lecture. Review of relevant numerical analysis;   |
|                                       |          |   |
|                                       |          | numerical methods for kinematic wave, St.         |
|                                       |          | Venant, Boussinesq and dept-averaged              |
|                                       |          | equations; simulation of one and two dimension    |
|                                       |          | free-surface flows.                               |
|                                       |          | Effective: Spring 2017                            |
| Technical Change <u>CE 4543/6543</u>  | Approved | FROM: CE 4543/6543 Advanced Reinforced            |
|                                       |          | Concrete. (3). (Prerequisite: Grade of C or       |
|                                       |          | better in CE 4601 and CE 4633). Three hours       |
|                                       |          | lecture. Two-way slab systems, shear walls,       |
|                                       |          | retaining walls, bi-axial bending of columns,     |
|                                       |          | torsion, brackets and corbels. Introduction to    |
|                                       |          | prestressed concrete.                             |
|                                       |          | TO: CE 4543/6543 Advanced Reinforced              |
|                                       |          | ·   |
|                                       |          | Concrete. (3). (Prerequisite: Grade of C or       |
|                                       |          | better in CE 4973; or consent of major advisor).  |
|                                       |          | Three hours lecture. Two-way slab systems,        |
|                                       |          | shear walls, retaining walls, bi-axial bending of |
|                                       |          | columns, torsion, brackets and corbels.           |
|                                       |          | Introduction to prestressed concrete.             |
|                                       |          | Effective: Spring 2017                            |
| Technical Change CE 4563/6563         | Approved | FROM: CE 4563/6563 Sedimentation                  |
|                                       |          | Engineering. (3). (Prerequisite: Grade of C or    |
|                                       |          | better in CE 4523/6523). Three hours lecture.     |
|                                       |          | Processes by which cohesive and non-cohesive      |
| ·                                     |          | sediments are transported in overland flow and    |
|                                       |          | in rivers, reservoirs, estuaries and coastlines.  |
|                                       |          | Deposition and erosion rates. Design criteria.    |
|                                       |          | 1 .   |
|                                       |          | TO: CE 4563/6563 Sedimentation                    |
|                                       |          | Engineering. (3). (Prerequisite: Grade of C or    |
|                                       |          | better in CE 4523; or consent of major advisor).  |
|                                       |          | Three hours lecture. Processes by which           |
|                                       |          | cohesive and non-cohesive sediments are           |
|                                       |          | transported in overland flow and in rivers,       |
|                                       |          | reservoirs, estuaries and coastlines. Deposition  |
|                                       |          | and erosion rates. Design criteria.               |
|                                       | I .      | Effective: Spring 2017                            |

|                              | 202.1202 |          | [  |
|------------------------------|----------|----------|--|
| Technical Change <u>CE 4</u> | 583/6583 | Approved | FROM: CE 4583/6583 Stream                        |
| ]                            |          |          | Reconnaissance. (3). Three hours lecture.        |
| İ                            |          |          | Stream channel form and sedimentary features.    |
|                              |          |          | Understanding how water flows into trough        |
|                              |          |          | streams and channel form and function.           |
|                              |          |          | Hydrologic, hydraulic and geomorphic channel     |
|                              |          |          | evolution processes.                             |
| 1                            |          |          | TO: CE 4583/6583 Stream Reconnaissance.          |
|                              |          |          | (Prerequisite: Grade of C or better in CE 3503;  |
|                              |          |          | or consent of major advisor). Three hours        |
| İ                            |          |          | lecture. Stream channel form and sedimentary     |
|                              |          |          | features. Understanding how water flows into     |
| }                            |          |          | trough streams and channel form and function.    |
|                              |          |          | Hydrologic, hydraulic and geomorphic channel     |
|                              |          |          | evolution processes.                             |
|                              |          |          | Effective: Spring 2017                           |
| Technical Change             | CE 4633  | Approved | FROM: CE 4633 Concrete Structures. (3).          |
|                              |          |          | (Prerequisite: Grade of C or better in CE 3603   |
|                              |          |          | and CE 3601; credit or current enrollment in CE  |
|                              |          |          | 4601). Three hours lecture. Theory and           |
| ŀ                            |          |          | problems in the analysis and design of concrete  |
|                              |          |          | structures.                                      |
|                              |          |          | TO: CE 4633 Concrete Structures. (3).            |
|                              |          |          | (Prerequisite: Grade of C or better in CE 3603). |
|                              |          |          | Three hours lecture. Theory and problems in the  |
|                              |          |          | analysis and design of concrete structures.      |
|                              |          |          | Effective: Spring 2017                           |
| Technical Change CE 4        | 703/6703 | Approved | FROM: CE 4703/6703 Construction                  |
| recimear change <u>ell</u>   | 100/0100 | Approved | Engineering and Management. (3).                 |
|                              |          |          | (Prerequisite: Senior standing or consent of     |
|                              |          |          | instructor). Three hours lecture. Construction   |
| ]                            |          |          | contracts and law, cost estimating, and project  |
|                              |          |          | scheduling.                                      |
|                              |          |          | TO: CE 4703/6703 Construction                    |
|                              |          |          | Engineering and Management. (3).                 |
|                              |          |          | (Prerequisite: Grade of C or better in IE 3913,  |
|                              |          |          | Senior standing or consent of instructor; or     |
|                              |          |          | consent of major advisor). Three hours lecture.  |
|                              |          |          | Construction contracts and law, cost estimating, |
|                              |          |          | and project scheduling.                          |
|                              |          |          |  |
|                              |          |          | Effective: Spring 2017                           |

| Tachnical Change CE 4732/6702        | A        | EDOM: OF ABANGBAR C                               |
|--------------------------------------|----------|---|
| Technical Change <u>CE 4733/6733</u> | Approved | FROM: CE 4733/6733 Construction                   |
|                                      |          | Engineering Equipment and Methods. (3).           |
|                                      |          | Three hours lecture. Aspects of planning,         |
|                                      |          | operation and management of civil engineering     |
|                                      |          | support equipment, site logistics, equipment      |
|                                      |          | cost engineering, power systems and               |
|                                      |          | environmental considerations of equipment use.    |
|                                      |          | TO: CE 4733/6733 Construction                     |
|                                      |          | Engineering Equipment and Methods. (3).           |
|                                      |          | (Prerequisite: Grade of C or better in IE 3913,   |
|                                      |          | 1 ` -   |
|                                      |          | Senior standing or consent of instructor; or      |
|                                      |          | consent of major advisor). Three hours lecture.   |
|                                      |          | Aspects of planning, operation and management     |
|                                      |          | of civil engineering support equipment, site      |
|                                      |          | logistics, equipment cost engineering, power      |
|                                      |          | systems and environmental considerations of       |
|                                      |          | equipment use.                                    |
|                                      |          | Effective: Spring 2017                            |
| Technical Change CE 4743/6743        | Approved | FROM: CE 4743/6743 Analysis and                   |
| <u> </u>                             | pp.o.ca  | Mitigation of Conflicts, Claims and Disputes.     |
|                                      |          | (3). Three hour lecture. Overview of the          |
|                                      |          | different techniques used to analyze and          |
|                                      |          |   |
|                                      |          | mitigate conflicts, claims, and disputes (C2D) in |
|                                      |          | civil engineering projects.                       |
|                                      |          | TO: CE 4743/6743 Analysis and Mitigation          |
|                                      |          | of Conflicts, Claims and Disputes. (3).           |
|                                      |          | Prerequisite: Senior standing or consent of       |
|                                      |          | instructor; or consent of major advisor). Three   |
|                                      |          | hour lecture. Overview of the different           |
|                                      |          | techniques used to analyze and mitigate           |
|                                      |          | conflicts, claims, and disputes (C2D) in civil    |
|                                      |          | engineering projects.                             |
|                                      |          | Effective: Spring 2017                            |
| T-1-1-1-01                           | A        |   |
| Technical Change <u>CE 4843/6843</u> | Approved | FROM: CE 4843/6843 Environmental                  |
|                                      |          | Engineering Chemistry. (3). (Prerequisite:        |
|                                      |          | Grade of C or better in CE 3823 or consent of     |
|                                      |          | instructor). Three hours lecture. Introduction to |
|                                      |          | advanced theoretical concepts in sanitary         |
|                                      |          | engineering analysis with special emphasis on     |
|                                      |          | inorganic, organic, and physical chemistry.       |
|                                      |          | TO: CE 4843/6843 Environmental                    |
|                                      |          | Engineering Chemistry. (3). (Prerequisite:        |
|                                      |          | Grade of C or better in CE 3823 or consent of     |
|                                      |          | instructor; or consent of major advisor). Three   |
|                                      | ]        | hours lecture. Introduction to advanced           |
|                                      | 1        | theoretical concepts in sanitary engineering      |
|                                      |          |   |
|                                      |          | analysis with special emphasis on inorganic,      |
|                                      |          | organic, and physical chemistry.                  |
|                                      |          | Effective: Spring 2017                            |

| Technical Change CE 4962/69    | 2   4      | EDOM: CE 40/2//0/2 W-4   |
|--------------------------------|------------|--|
| Technical Change CE 4863/686   | 3 Approved | FROM: CE 4863/6863 Water and                                   |
|                                |            | Wastewater Engineering. (3). (CE 3823 with                     |
|                                |            | grade of C or better). Three hour lecture.                     |
|                                |            | Evaluation of municipal water and wastewater                   |
|                                |            | characteristics and flows; application of various              |
|                                |            | unit processes/unit operations for the treatment               |
|                                |            | of municipal water and wastewater.                             |
|                                |            | TO: CE 4863/6863 Water and Wastewater                          |
|                                |            | Engineering. (3). (Prerequisite: CE 3823 with                  |
|                                |            | grade of C or better; or consent of major                      |
|                                |            | advisor). Three hour lecture. Evaluation of                    |
|                                |            | municipal water and wastewater characteristics                 |
|                                |            | and flows; application of various unit                         |
|                                |            | processes/unit operations for the treatment of                 |
|                                |            | municipal water and wastewater.                                |
|                                |            | Effective: Spring 2017   |
| Technical Change CE 4883/688   | 3 Approved | FROM: CE 4883/6883 Engineered                                  |
| 5                              | _   ``     | Environmental Systems. (3). (Prerequisite: CE                  |
|                                |            | 3503 & CE 3823 with grade of C or                              |
|                                |            | better). Three hour lecture. Evaluation and                    |
|                                |            | characterization of storm water quality;                       |
|                                |            | selection, design and application of various                   |
|                                |            | treatment technologies; surface water quality                  |
|                                |            | management and modeling; and sustainable                       |
|                                |            | engineering.   |
|                                |            | TO: CE 4883/6883 Engineered                                    |
|                                |            | Environmental Systems. (3). (Prerequisite: CE                  |
|                                |            | 3503 & CE 3823 with grade of C or better; or                   |
|                                |            | consent of major advisor). Three hour lecture.                 |
|                                |            | Evaluation and characterization of storm water                 |
|                                |            | quality; selection, design and application of                  |
|                                |            | various treatment technologies; surface water                  |
|                                |            | quality management and modeling; and                           |
|                                |            | sustainable engineering.                                       |
|                                |            | Effective: Spring 2017   |
| Technical Change CE 4893/689   | 3 Approved | FROM: CE 4893/6893 Hazardous Waste                             |
| Technical Change   CE 4093/009 | Approved   | Management. (3). (Prerequisite: Consent of                     |
|                                |            | Instructor). Three hours lecture. Examination of               |
|                                |            | state-of-the-art technologies available for the                |
|                                |            | handling treatment; storage; and disposal of                   |
|                                |            | hazardous waste materials.                                     |
|                                |            | TO: CE 4893/6893 Hazardous Waste                               |
|                                |            | Management. (3). (Prerequisite: Grade of C or                  |
|                                |            | better in CE 3823; or consent of major advisor).               |
|                                |            | Three hours lecture. Examination of state-of-                  |
|                                |            |  |
|                                |            | the-art technologies available for the handling                |
|                                |            | treatment; storage; and disposal of hazardous waste materials. |
|                                |            |  |
|                                |            | Effective: Spring 2017   |

| Technical Change CE 4913/6913        | Annound  | FROM: CE 4913/6913 Matrix of Analysis of           |
|--------------------------------------|----------|--|
| Technical Change <u>CE 4913/0913</u> | Approved |  |
|                                      |          | Structures. (3). (Prerequisite: Grade of C or      |
|                                      |          | better in CE 3603, or consent of instructor).      |
|                                      |          | Matrix formulation and computer analysis of        |
|                                      |          | structures. Linear stiffness analysis of truss and |
|                                      |          | frames structures.                                 |
| †                                    |          | TO: CE 4913/6913 Matrix of Analysis of             |
|                                      |          | Structures. (3). (Prerequisite: Grade of C or      |
| 1                                    |          | better in CE 3603, or consent of instructor; or    |
|                                      |          | consent of major advisor). Matrix formulation      |
|                                      |          | and computer analysis of structures. Linear        |
|                                      |          | stiffness analysis of truss and frames structures. |
|                                      |          | Effective: Spring 2017                             |
| Technical Change CE 4923/6923        | Approved | FROM: CE 4923/6923 Structural Dynamics.            |
|                                      |          | (3). (Grade of C or better in CE 3603, or          |
|                                      |          | consent of instructor). Three hours lecture.       |
|                                      |          | Response of a single and multi-degree of           |
|                                      |          | freedom structures to dynamic loading: free        |
|                                      |          | vibration, harmonic excitation, pulses, and        |
|                                      |          | earthquakes.                                       |
|                                      |          | TO: CE 4923/6923 Structural Dynamics.              |
|                                      |          | (3). (Prerequisite: Grade of C or better in CE     |
|                                      |          | 3603, or consent of instructor; or consent of      |
|                                      |          | major advisor). Three hours lecture. Response      |
|                                      |          | of a single and multi-degree of freedom            |
|                                      |          | structures to dynamic loading: free vibration,     |
|                                      |          | 1  |
|                                      |          | harmonic excitation, pulses, and earthquakes.      |
|                                      |          | CE 4923/6923 Structural Dynamics.                  |
| T1-1-1 Ob OF 4000/6000               | A        | Effective: Spring 2017                             |
| Technical Change CE 4983/6983        | Approved | FROM: CE 4983/6983 Engineering of Wood             |
|                                      |          | Structures. (3). (Prerequisite: Grade of C or      |
|                                      |          | better in CE 3603). Three hours lecture. Loads     |
|                                      |          | on structures. Analysis and design of wood         |
|                                      |          | structures using the appropriate specifications.   |
|                                      |          | Focus on beams and columns.                        |
|                                      |          | TO: CE 4983/6983 Engineering of Wood               |
|                                      |          | Structures. (3). (Prerequisite: Grade of C or      |
|                                      |          | better in CE 3603; or consent of major             |
|                                      |          | advisor). Three hours lecture. Loads on            |
|                                      |          | structures. Analysis and design of wood            |
|                                      |          | structures using the appropriate specifications.   |
|                                      |          | Focus on beams and columns.                        |
|                                      |          | Effective: Spring 2017                             |

| Technical Change CE 4993/6993        | Approved | FROM: CE 4993/6993 Prestressed Concrete           |
|--------------------------------------|----------|---|
| Technical Change <u>CE 4993/0993</u> | Approved | Structures. (3). (Prerequisite: Grade of C or     |
|                                      |          | better in CE 4953). Three hours lecture. Loads    |
|                                      |          | ·   |
|                                      |          | on structures. Analysis and design of prestressed |
|                                      |          | concrete structures using ACI specifications.     |
|                                      |          | Focus on beams.                                   |
|                                      |          | TO: CE 4993/6993 Prestressed Concrete             |
|                                      |          | Structures. (3). (Prerequisite: Grade of C or     |
|                                      |          | better in CE 4973; or consent of major advisor).  |
|                                      |          | Three hours lecture. Loads on structures.         |
|                                      |          | Analysis and design of prestressed concrete       |
|                                      |          | structures using ACI specifications. Focus on     |
|                                      |          | beams.  |
|                                      |          | Effective: Spring 2017                            |
| Technical Change CE 8133             | Approved | FROM: CE 8133 Traffic Flow Theory. (3).           |
|                                      |          | (Prerequisite: Grade of C or better in CE         |
|                                      |          | 4143/6143). Three hours lecture. An analysis of   |
|                                      |          | the engineering and mathematical principles of    |
|                                      |          | traffic flow.                                     |
|                                      |          | TO: CE 8133 Traffic Flow Theory. (3).             |
|                                      |          | (Prerequisite: Consent of Major Advisor). Three   |
|                                      |          | hours lecture. An analysis of the engineering     |
|                                      |          | and mathematical principles of traffic flow.      |
|                                      |          | Effective: Spring 2017                            |
| Technical Change CE 8143             | Approved | FROM: CE 8143 Traffic Simulation and              |
|                                      |          | Advanced Traffic Management. (3).                 |
|                                      |          | (Prerequisite: CE 4143/6143 or one computer       |
|                                      |          | programming related course). Introduction of      |
|                                      |          | traffic control concepts. Understanding of        |
|                                      |          | existing traffic control systems. In-depth        |
|                                      | ]        | knowledge of traffic simulation.                  |
|                                      |          | TO: CE 8143 Traffic Simulation and                |
|                                      |          | Advanced Traffic Management. (3).                 |
|                                      |          | (Prerequisite: Consent of Major Advisor).         |
|                                      |          | Introduction of traffic control concepts.         |
|                                      |          | Understanding of existing traffic control         |
|                                      |          | systems. In-depth knowledge of traffic            |
|                                      |          | simulation.                                       |
|                                      |          | Effective Spring 2017                             |

| Technical Change | <u>CE 8163</u> | Approved | FROM: CE 8163 Public Transportation. (3).         |
|------------------|----------------|----------|---|
|                  |                |          | (Prerequisite: CE 4153/6153 or consent of         |
|                  |                |          | instructor). Three hours lecture. Principles of   |
|                  |                |          | efficient management, and planning of public      |
|                  |                |          | transportation systems: capabilities and          |
|                  |                |          | limitations, optimal scale and layout, design and |
|                  |                |          | operation of transit systems.                     |
|                  |                |          | TO: CE 8163 Public Transportation. (3).           |
|                  |                |          |   |
|                  |                |          | (Prerequisite: Consent of Major Advisor).         |
|                  |                |          | Three hours lecture. Principles of efficient      |
|                  |                |          | management, and planning of public                |
|                  |                |          | transportation systems: capabilities and          |
|                  |                |          | limitations, optimal scale and layout, design and |
|                  |                |          | operation of transit systems.                     |
|                  |                |          | Effective: Spring 2017                            |
| Technical Change | CE 8203        | Approved | FROM: CE 8203 Finite Element Modeling in          |
|                  |                |          | CEE. (3). Three hours lecture. Modern finite      |
|                  |                |          | element methods for continum [sic] mechanical     |
|                  |                |          | models relevant to civil and environmental        |
|                  |                |          | engineering, including surface and subsurface     |
|                  |                |          | fluid flow, mass transport, and solid mechanics.  |
|                  |                |          |   |
|                  |                |          | TO: CE 8203 Finite Element Modeling in            |
|                  |                |          | CEE. (3). (Prerequisite: Consent of Major         |
|                  |                |          | Advisor). Three hours lecture. Modern finite      |
|                  |                |          | element methods for continuum mechanical          |
|                  |                |          | models relevant to civil and environmental        |
|                  |                |          | engineering, including surface and subsurface     |
|                  |                |          | fluid flow, mass transport, and solid mechanics.  |
|                  |                |          | Effective: Spring 2017                            |
| Technical Change | CE 8303        | Approved | FROM: CE 8303 Material Characterization.          |
|                  |                |          | (3). (Prerequisite: CE 3413 and CE 3313 or        |
|                  |                |          | equivalent). Three hours lecture.                 |
|                  | İ              |          | Characterization of advanced material behaviors   |
|                  |                |          | for pavement subgrades, bases and surface         |
|                  |                |          | courses, Stree dependency, viscoelasticity,       |
|                  |                |          | repeated load moduli, and stabilization are       |
|                  |                |          | central behaviors of interest.                    |
|                  |                |          | TO: CE 8303 Material Characterization.            |
|                  |                |          | _ •   |
|                  |                |          | (3). (Prerequisite: Consent of Major Advisor).    |
|                  |                |          | Three hours lecture. Characterization of          |
|                  |                |          | advanced material behaviors for pavement          |
|                  |                |          | subgrades, bases and surface courses, Stree       |
|                  |                |          | dependency, viscoelasticity, repeated load        |
|                  |                |          | moduli, and stabilization are central behaviors   |
|                  |                |          | of interest.                                      |
|                  |                |          | Effective: Spring 2017                            |

| Technical Change | CE 8313 | Approved | FROM: CE 8313 Materials Science and Durability of Concrete. (3). (Prerequisite: Consent of Instructor). Three hours lecture. Materials science of concrete and cement-based materials with a focus on materials specification and testing as well as identifying mechanisms of material degradation.  TO: CE 8313 Materials Science and Durability of Concrete. (3). (Prerequisite: Consent of Major Advisor). Three hours lecture. Materials science of concrete and cement-based materials with a focus on materials specification and testing as well as identifying mechanisms of material degradation.  Effective: Spring 2017   |
|------------------|---------|----------|---|
| Technical Change | CE 8333 | Approved | FROM: CE 8333 Pavement Performance and Rehabilitation. (3). (Prerequisites: CE 3313, 3413, and CE 4103/6103, or consent of instructor). Three hours lecture. Field methods for evaluating pavement performance including surveys, profiling, and frictional resistance. Impulse deflection testing of structural integrity. Pavement preservation and rehabilitation techniques.  TO: CE 8333 Pavement Performance and Rehabilitation. (3). (Prerequisites: Consent of Advisor). Three hours lecture. Field methods for evaluating pavement performance including surveys, profiling, and frictional resistance. Impulse deflection testing of structural integrity. Pavement preservation and rehabilitation techniques.  Effective: Spring 2017 |
| Technical Change | CE 8343 | Approved | FROM: CE 8343 Advanced Pavement Materials. (3). (Prerequisite: Consent of Major Advisor). CE 3413 and CE 3313, or equivalent). Three hours lecture. Properties, behavior and performance of highway and airfield paving materials; principally asphalt and concrete. Quality control and assurance. Constitute material properties and specifications. TO: CE 8343 Advanced Pavement Materials. (3). (Prerequisite: Consent of Major Advisor). Three hours lecture. Properties, behavior and performance of highway and airfield paving materials; principally asphalt and concrete. Quality control and assurance. Constitute material properties and specifications. Effective: Spring 2017   |

| Technical Change | CE 8413 | Approved | FROM: CE 8413 Advanced Geotechnical Site Characterization. (3). (Prerequisite: Consent of Instructor). Three hours lecture. Fundamentals of geotechnical engineering site characterization and special techniques for large projects involving difficult complex geological soils. TO: CE 8413 Advanced Geotechnical Site Characterization. (3). (Prerequisite: Consent of Major Advisor). Three hours lecture. Fundamentals of geotechnical engineering site characterization and special techniques for large projects involving difficult complex geological soils. Effective: Spring 2017  |
|------------------|---------|----------|--|
| Technical Change | CE 8423 | Approved | FROM: CE 8423 Geotechnical Earthquake Engineering. (3). (Prerequisite: Grade of C or better in CE 3413 or Consent of Instructor). Three hours lecture. Dynamic soil properties, seismic site response analysis, and evaluation of soil liquefication, seismic stability of dams and embankments, seismic aspects of foundation design. TO: CE 8423 Geotechnical Earthquake Engineering. (3). (Prerequisite: Consent of Major Advisor). Three hours lecture. Dynamic soil properties, seismic site response analysis, and evaluation of soil liquefication, seismic stability of dams and embankments, seismic aspects of foundation design. Effective: Spring 2017 |
| Technical Change | CE 8433 | Approved | FROM: CE 8433 Advanced Foundations. (3). (Prerequisite: Grade of C or better in CE 4433 or consent of instructor). Three hours lecture. A continuation of CE 3433 with emphasis on unusual soil conditions and foundations.  TO: CE 8433 Advanced Foundations. (3). (Prerequisite: Consent of Major Advisor). Three hours lecture. A continuation of CE 3433 with emphasis on unusual soil conditions and foundations.  Effective: Spring 2017   |

| T. 1 . 1 . 1 C!  | OF 0446        | A                                       | EDOM CE 0442 C U.D. 1 (2)                          |
|--|----------------|---|--|
| Technical Change   | <u>CE 8443</u> | Approved                                | FROM: CE 8443 Soil Behavior. (3).                  |
|  |                |   | (Prerequisite: Grade of C or better in CE 3413     |
|  |                |   | or equivalent). Three hours lecture. Review of     |
|  |                |   | methods of testing to define response; rationale   |
|  |                |   | for choosing shear strength and deformation        |
|  |                |   | parameters for soils for design applications.      |
|  |                |   | TO: CE 8443 Soil Behavior. (3).                    |
|  |                |   | (Prerequisite: Consent of Major Advisor). Three    |
|  |                |   | hours lecture. Review of methods of testing to     |
|  |                |   | 1  |
|  |                |   | define response; rationale for choosing shear      |
|  |                |   | strength and deformation parameters for soils      |
|  |                |   | for design applications.                           |
|  |                |   | Effective: Spring 2017                             |
| Technical Change   | CE 8453        | Approved                                | FROM: CE 8453 Physical Properties of               |
|  |                |   | Soils. (3). (Prerequisite: Grade of C or better in |
|  |                |   | CE 3413). Three hours lecture. Three hours         |
|  |                |   | laboratory. A study of the physical properties of  |
|  |                |   | soil masses as related to foundation engineering.  |
|  |                |   | TO: CE 8453 Physical Properties of Soils.          |
|  |                |   | (3). (Prerequisite: Consent of Major Advisor).     |
|  |                |   | Three hours lecture. Three hours laboratory. A     |
|  |                |   | study of the physical properties of soil masses    |
|  |                |   |  |
|  |                |   | as related to foundation engineering.              |
| To the state of th | CE 04(2        | , | Effective: Spring 2017                             |
| Technical Change   | <u>CE 8463</u> | Approved                                | FROM: CE 8463 Slopes & Embankments.                |
|  |                |   | (3). (Prerequisite: Consent of Major Advisor).     |
|  |                |   | Analysis and design of geotechnical systems        |
|  |                |   | placed on an angle from the horizontal.            |
| -  |                |   | TO: CE 8463 Slopes & Embankments. (3).             |
|  |                |   | (Prerequisite: Consent of Major Advisor).          |
|  |                |   | Analysis and design of geotechnical systems        |
|  |                |   | placed on an angle from the horizontal.            |
|  |                |   | Effective: Spring 2017                             |
| Technical Change   | CE 8473        | Approved                                | FROM: CE 8473 Theoretical Soil                     |
|  |                |   | Mechanics. (3). (Prerequisite: Consent of          |
|  |                |   | Instructor). Three hours lecture. Modern           |
|  |                |   | interpretation of soil behavior for engineering    |
|  |                |   | applications. Extrapolation of actual conditions   |
|  |                |   | from standard testing results.                     |
|  |                |   | TO: CE 8473 Theoretical Soil Mechanics.            |
|  |                |   | (3). (Prerequisite: Consent of Advisor). Three     |
|  |                |   | hours lecture. Modern interpretation of soil       |
|  |                |   | behavior for engineering applications.             |
|  |                |   |  |
|  |                |   | Extrapolation of actual conditions from standard   |
|  |                |   | testing results.                                   |
|  |                |   | Effective: Spring 2017                             |

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| Technical Change | CE 8553         | Approved    | FROM: CE 8553 Rivers, Estuaries and  |
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|                  | <u>-52-56-6</u> | 1. Ipprovou | Coasts. (3). (Prerequisite: Consent CE   |
|                  |                 |             | 4523/6523 or equivalent course or consent of instructor). Three hours lecture. Basic |
|                  |                 |             | introduction to the physical processes in river,                                     |
|                  |                 |             | estuaries, and coastal zones. Engineered   |
|                  |                 |             | solutions to common problems concerning flow   |
|                  |                 |             | and sedimentation.   |
|                  |                 |             | TO: CE 8553 Rivers, Estuaries and Coasts.  |
|                  |                 |             | (3). (Prerequisite: Consent of Major Advisor).                                       |
|                  |                 |             | Three hours lecture. Basic introduction to the                                       |
|                  |                 |             | physical processes in river, estuaries, and  |
|                  |                 |             | coastal zones. Engineered solutions to common  |
|                  |                 |             | problems concerning flow and sedimentation.  |
|                  |                 |             | Effective: Spring 2017   |
| Technical Change | CE 8563         | Approved    | FROM: CE 8563 Groundwater Resource   |
|                  |                 |             | Evaluation. (3). (Prerequisite: Grade C or   |
|                  |                 |             | better in CE 3813). Three hours lecture.   |
|                  |                 |             | Groundwater movement; Darcy's law; equations   |
|                  |                 |             | of groundwater flow; confined and unconfined   |
|                  |                 |             | flow; wells and well field analysis; groundwater                                     |
|                  |                 |             | quality; aquifer management.  TO: CE 8563 Groundwater Resource                       |
|                  |                 |             | Evaluation. (3). (Prerequisite: Consent of   |
|                  |                 |             | Major Advisor). Three hours lecture.   |
|                  |                 |             | Groundwater movement; Darcy's law; equations   |
|                  |                 |             | of groundwater flow; confined and unconfined   |
|                  |                 |             | flow; wells and well field analysis; groundwater                                     |
|                  |                 |             | quality; aquifer management.   |
|                  |                 |             | Effective: Spring 2017   |
| Technical Change | CE 8573         | Approved    | FROM: CE 8573 Hydro-environmental  |
|                  |                 |             | Analysis. (3). (Prerequisite: Consent of   |
|                  |                 |             | instructor) Three hours lecture. Environmental                                       |
|                  |                 |             | engineering aspects of physical/chemical/  |
|                  |                 |             | biological processes impacting conventional and                                      |
|                  |                 |             | toxic materials in surface waters. Characteristics                                   |
|                  |                 |             | of rivers/streams, lakes and estuaries related to                                    |
|                  |                 | 1           | environmental quality.  TO: CE 8573 Hydro-environmental                              |
|                  |                 |             | Analysis. (3). (Prerequisite: Consent of Major                                       |
|                  |                 |             | Advisor.) Three hours lecture. Environmental   |
|                  |                 |             | engineering aspects of physical/chemical/  |
|                  |                 |             | biological processes impacting conventional and                                      |
|                  |                 |             | toxic materials in surface waters. Characteristics                                   |
|                  |                 |             | of rivers/streams, lakes and estuaries related to                                    |
|                  |                 |             | environmental quality.   |
|                  |                 |             | Effective: Spring 2017   |

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| Technical Change   | <u>CE 8593</u> | Approved                                | FROM: CE 8593 Environmental Hydrology.  |
|                    |                |   | (3). (Prerequisite: Consent of instructor). Three                                     |
|                    |                |   | hours lecture. Discuss hydrologic cycle and its                                       |
|                    |                |   | effects on water quality; principles and models                                       |
|                    |                |   | for pollutant transport and transformations in  |
|                    |                |   | surface runoff, in-stream, unsaturated soil, and                                      |
|                    |                |   | groundwater.  |
|                    |                |   | TO: CE 8593 Environmental Hydrology.  |
|                    |                |   | (3). (Prerequisite: Consent of Major Advisor).  |
|                    |                |   | Three hours lecture. Discuss hydrologic cycle   |
|                    |                |   | and its effects on water quality; principles and                                      |
|                    |                |   | · · · · · ·   |
|                    |                |   | models for pollutant transport and  |
| 1                  |                |   | transformations in surface runoff, in-stream,   |
|                    |                |   | unsaturated soil, and groundwater.  |
|                    |                |   | Effective: Spring 2017  |
| Technical Change   | CE 8603        | Approved                                | FROM: CE 8603 Mat Struct Analysis II.   |
|                    |                |   | (3). (Prerequisite: Grade of B or better in CE  |
| 1                  |                |   | 4913/6913). Advanced topics in matrix   |
|                    |                |   | structural analysis using the direct stiffness  |
|                    |                |   | method.   |
|                    |                |   | TO: CE 8603 Mat Struct Analysis II. (3).  |
|                    |                |   | (Prerequisite: Consent of Major Advisor).   |
|                    |                |   | Advanced topics in matrix structural analysis   |
|                    |                |   | using the direct stiffness method.  |
|                    |                |   | Effective: Spring 2017  |
| Technical Change   | CE 8623        | Approved                                | FROM: CE 8623 Theory of Plates and  |
| 1 confidencial ge  | <u>CE 8023</u> | Approved                                | Shells. (3). (Prerequisites: Grade of B or better                                     |
|                    |                |   | in CE 3603 or consent of instructor). Three   |
|                    |                |   | 1 '   |
|                    |                |   | hours lecture. Equations of equilibrium for   |
|                    |                |   | plates, slabs, and shells.  |
|                    |                |   | TO: CE 8623 Theory of Plates and Shells.  |
|                    |                |   | (3). (Prerequisites: Consent of Major Advisor.)                                       |
| 1                  |                |   | Three hours lecture. Equations of equilibrium   |
|                    |                |   | for plates, slabs, and shells.  |
|                    |                |   | Effective: Spring 2017  |
| Technical Change   | CE 8653        | Approved                                | FROM: CE 8653 Computational Inelasticity.   |
|                    |                |   | (3). Three hour lecture. Computational methods  |
|                    |                |   | and finite elements applied to inelastic  |
|                    |                |   | deformations of solids; deformation continuum   |
|                    |                |   | plasticity, viscoplasticity and viscoelasticity;                                      |
|                    |                |   | with application to metals, soils, concrete, and                                      |
|                    |                |   | polymers.   |
|                    |                |   | TO: CE 8653 Computational Inelasticity.   |
|                    |                |   | (3). (Prerequisite: Consent of Major Advisor).  |
|                    |                |   | Three hour lecture. Computational methods and   |
|                    |                |   | finite elements applied to inelastic deformations                                     |
|                    |                |   | of solids; deformation continuum plasticity,  |
|                    |                |   | 1   |
|                    |                |   | viscoplasticity and viscoelasticity; with application to metals, soils, concrete, and |
|                    |                | i e e e e e e e e e e e e e e e e e e e | i apprication to metals solls concrete and  |
|                    |                |   | ••  |
|                    |                |   | polymers. Effective: Spring 2017  |

| Technical Change | CE 8673 | Approved | FROM: CE 8673 Blast Effects and Structures Responses. (3). (Prerequisite: Consent of instructor). Three hours lecture. Fundamental blast phenomena. Blast loadings on structures and effects on occupants. Design   |
|------------------|---------|----------|---|
|                  |         |          | and analysis of structural elements and systems subjected to blast.  TO: CE 8673 Blast Effects and Structures Responses. (3). (Prerequisite: Consent of Major Advisor). Three hours lecture. Fundamental blast phenomena. Blast loadings on structures and effects on occupants. Design and analysis of structural elements and systems   |
|                  |         |          | subjected to blast.   |
| Technical Change | CE 8683 | Approved | Effective: Spring 2017 FROM: CE 8683 Finite Element Analysis in   |
|                  |         |          | Structural Engineering. (3). (Prerequisite: CE 4663/6663). Three hours lecture. Energy and elasticity principles. Development of planar three-dimensional and curved elements. Applications to plates and shells. Use of computer programs.  TO: CE 8683 Finite Element Analysis in Structural Engineering. (3). (Prerequisite: Consent of Major Advisor). Three hours lecture. Energy and elasticity principles. Development of planar three-dimensional and curved elements. Applications to plates and shells. Use of computer programs.  Effective: Spring 2017 |
| Technical Change | CE 8713 | Approved | FROM: CE 8713 Green Building Systems.  (3). Three hour lecture. Understanding negative impacts of construction on the societal sustainability and using life-cycle assessment, systems analysis and economic valuation for mitigation.  TO: CE 8713 Green Building Systems. (3). (Prerequisite: Consent of Major Advisor). Three hour lecture. Understanding negative impacts of construction on the societal sustainability and using life-cycle assessment, systems analysis and economic valuation for mitigation.  Effective: Spring 2017                       |

| Technical Change | CE 8803        | Approved | FROM: CE 8803 Unit Processes and Operations in Environmental Engineering I. (3). Three hours lecture. Theory and application of physical and chemical unit processes and operations available for the treatment of water and wastewater. TO: CE 8803 Unit Processes and Operations in Environmental Engineering I. (3).   |
|------------------|----------------|----------|---|
|                  |                |          | (Prerequisite: Consent of Major Advisor). Three hours lecture. Theory and application of physical and chemical unit processes and operations available for the treatment of water and wastewater.  Effective: Spring 2017   |
| Technical Change | <u>CE 8823</u> | Approved | FROM: CE 8823 Unit Processes and Operations in Environmental Engineering II. (3). Three hours lecture. Theory and application of biological processes available for the treatment of wastewater. TO: CE 8823 Unit Processes and Operations in Environmental Engineering II. (3). (Prerequisite: Consent of Major Advisor). Three hours lecture. Theory and application of biological processes available for the treatment of wastewater. Effective: Spring 2017  |
| Technical Change | CE 8863        | Approved | FROM: CE 8863 Solid Waste Management. (3). (Prerequisite: CE 3824) Three hours lecture. Define and characterize non-hazardous solid wastes and how to minimize, handle, transport, store, recycle and dispose of these materials.  TO: CE 8863 Solid Waste Management. (3). (Prerequisite: Consent of Major Advisor.)  Three hours lecture. Define and characterize non-hazardous solid wastes and how to minimize, handle, transport, store, recycle and dispose of these materials.  Effective: Spring 2017 |

| Technical Change | CE 8923 | Approved | FROM: CE 8923 Surface Water Quality Modeling. (3). (Prerequisite: Consent of instructor). Development of the mathematical formulations describing the distribution of concentration of conserative [sic] and nonconservative pollutants describing the distribution of concentration of conservative in natural waters.  TO: CE 8923 Surface Water Quality Modeling. (3). (Prerequisite: Consent of Major Advisor). Development of the mathematical formulations describing the distribution of concentration of conservative and nonconservative pollutants describing the distribution of concentration of conservative in natural waters. Effective: Spring 2017                               |
|------------------|---------|----------|---|
| Technical Change | CE 8933 | Approved | FROM: CE 8933 Surface Water Quality Modeling II. (3). (Prerequisite: CE 8923) Three hours lecture. Advanced topics related to surface water quality modeling. Overview of the present state-of-the-art of modeling, analysis eutrophication, toxic materials (organice [sic] chemicals and metals) and review of recent trends.  TO: CE 8933 Surface Water Quality Modeling II. (3). (Prerequisite: Consent of Major Advisor.) Three hours lecture. Advanced topics related to surface water quality modeling. Overview of the present state-of-the-art of modeling, analysis eutrophication, toxic materials (organic chemicals and metals) and review of recent trends.  Effective: Spring 2017 |
| Technical Change | CE 8953 | Approved | FROM: CE 8953 Fine Sediment Processes.  (3). (Prerequisite: Consent of Instructor). Three hours lecture. Fine sediment processes in transport, deposition, and erosion by water. Fluid-particle interactions, flocculation process in clay sediments, lutocline, formations and fluid mud, bed formation processes.  TO: CE 8953 Fine Sediment Processes.  (3). (Prerequisite: Consent of Major Advisor). Three hours lecture. Fine sediment processes in transport, deposition, and erosion by water. Fluid-particle interactions, flocculation process in clay sediments, lutocline, formations and fluid mud, bed formation processes.  Effective: Spring 2017                                 |

| Technical Change | CE 8963 | Approved | FROM: CE 8963 Hydraulics of Closed              |
|------------------|---------|----------|---|
|                  |         |          | Conduits. (3). (Prerequisite: Consent of        |
|                  |         |          | instructor). Three hours lecture. Analysis of   |
|                  |         |          | steady, quasi-steady, time-dependent, and       |
|                  |         |          | transient conduit flow; flow resistance; system |
|                  |         |          | components; distribution systems; compute       |
|                  |         |          | applications to closed conduits.                |
|                  |         |          | TO: CE 8963 Hydraulics of Closed Conduits.      |
|                  |         |          | (3). (Prerequisite: Consent of Major Advisor).  |
|                  |         |          | Three hours lecture. Analysis of steady, quasi- |
|                  |         |          | steady, time-dependent, and transient conduit   |
|                  |         |          | flow; flow resistance; system components;       |
|                  |         |          | distribution systems; compute applications to   |
|                  |         |          | closed conduits.                                |
|                  |         |          | Effective: Spring 2017                          |

### FOREST RESOURCES

| FUREST RESOUR           | CED             |                    |  |
|-------------------------|-----------------|--------------------|--|
| Technical Change        | <u>WFA 4283</u> | Approved           | WFA 4283 Human-Wildlife Conflict               |
|                         |                 |                    | Techniques. Unlink the graduate and            |
|                         |                 |                    | undergraduate options for this course, so the  |
|                         |                 |                    | graduate level version (WFA 6283) can be       |
|                         |                 |                    | deleted.                                       |
|                         |                 |                    | Effective: Spring 2017                         |
| Technical Change        | WFA 4363        | Approved           | WFA 4363 Wildlife and Fisheries                |
|                         |                 | ••                 | Administration and Communication.              |
|                         |                 |                    | Unlink the graduate and undergraduate          |
|                         |                 |                    | options for this course, so the graduate level |
|                         |                 |                    | version (WFA 6363) can be deleted.             |
|                         |                 |                    | Effective: Spring 2017                         |
| Technical Change        | WFA 6283        | Approved           | WFA 6283 Human-Wildlife Conflict               |
| 100111110111 0111111190 |                 | 1- <b>PP</b> 1-0-0 | Techniques. Unlink the graduate and            |
|                         |                 |                    | undergraduate options for this course, so the  |
|                         |                 |                    | graduate level version (WFA 6283) can be       |
|                         |                 |                    | deleted.                                       |
|                         |                 |                    | Effective: Spring 2017                         |
| Technical Change        | WFA 6363        | Approved           | WFA 6363 Wildlife and Fisheries                |
|                         |                 |                    | Administration and Communication.              |
|                         |                 |                    | Unlink the graduate and undergraduate          |
|                         |                 |                    | options for this course, so the graduate level |
|                         |                 |                    | version (WFA 6363) can be deleted.             |
|                         |                 |                    | Effective: Spring 2017                         |

# 2. Program Proposals by college/school:

## AGRICULTURE AND LIFE SCIENCE

| Modification | Degree: BS     | Approved | See proposal for list of revisions. |
|--------------|----------------|----------|-------------------------------------|
|              | Major: Poultry |          |                                     |
|              | Science        |          | Effective: Fall 2017                |

## ARTS AND SCIENCES

| N | Modification | Degree: MA     | Approved | Approved by Graduate Council. |
|---|--------------|----------------|----------|-------------------------------|
|   |              | Major: Foreign |          |                               |
|   |              | Language       |          | Effective: Fall 2017          |

## **EDUCATION**

| Modification | Degree: MS           | Approved   | Forwarded to Graduate Council. |
|--------------|----------------------|------------|--------------------------------|
|              | Major: Education     |            |                                |
|              | Concentration:       |            |                                |
|              | Counselor Education, |            |                                |
|              | School Counseling    |            |                                |
| Addition     | Degree: MS           | Passed     |                                |
|              | Major: Kinesiology   | Contingent |                                |
|              | Concentration:       |            |                                |
|              | Disability Studies   |            |                                |
| Modification | Degree: Ph.D.        | Passed     |                                |
|              | Major: Kinesiology   | Contingent |                                |
|              | Concentrations:      | -          |                                |
|              | Exercise Science;    |            |                                |
|              | Sport Studies        |            |                                |
| Modification | Degree: Ph.D.        | Approved   | Forwarded to Graduate Council  |
|              | Major: Educational   |            |                                |
|              | Psychology           |            |                                |
|              | Concentration:       |            |                                |
|              | General Educational  |            |                                |
|              | Psychology & School  |            |                                |
|              | Psychology           |            |                                |

| All of the proposals were approved with the except Proposals** | otion of the following: |
|--|-------------------------|
|  |                         |
| Peter C. Ryan  | February 7, 2017        |
| Dr. Peter L. Ryan<br>Associate Provost for Academic Affairs    | Date                    |