

## Brothers, Sheila

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**From:** Cramer, Aaron  
**Sent:** Friday, April 05, 2019 1:39 PM  
**To:** Bird-Pollan, Jennifer; Brothers, Sheila; Ett-Mims, Joanie  
**Cc:** Wang, Yitin  
**Subject:** NEW GC: Structural Engineering  
**Attachments:** GC in Structural Engineering\_rev4319.pdf

Proposed New Graduate Certificate: Structural Engineering

This is a recommendation that the University Senate approve the establishment of a new Graduate Certificate: Structural Engineering, in the Department of Civil Engineering within the College of Engineering.

Rationale: The proposed certificate program will provide students with the necessary background and skills required of structural engineers. There is an increasing workforce need for well-prepared civil engineers to develop more sustainable and resilient infrastructure to replace the nation's aging infrastructure. Demand for civil engineers is projected to grow by 8% by 2024, and the National Council of Examiners for Engineering and Surveying has approved a model licensure law requiring a B.S. plus 30 credit hours to complete professional licensure. The proposed program would serve as a starting point toward these increased licensure requirements. Enrollment of five students growing to 15 students is projected.

Aaron

Aaron M. Cramer  
Associate Professor, Electrical and Computer Engineering  
Director of Graduate Studies, Electrical Engineering  
Chair, Senate Academic Programs Committee  
University of Kentucky  
859-257-9113  
[aaron.cramer@uky.edu](mailto:aaron.cramer@uky.edu)

## NEW GRADUATE CERTIFICATE

**Certificate Description.** A graduate certificate shall have a clear and focused academic topic or competency as its subject, meet a clearly defined educational need of a constituency group, such as required continuing-education or accreditation for a particular profession, respond to a specific state mandate or provide a basic competency in an emerging (preferably interdisciplinary) topic. Certificates are minimally nine graduate credit hours but typically no more than 15.

**Approval process.** Once approved at the college level, your college will send the proposal to the appropriate Senate academic council (possibly HCCC and/or UC) for review and approval. Once approved at the academic council level, the academic council will send your proposal to the Senate Council office for additional review via a committee and then to the SC and University Senate. (The contact person listed on the form will be informed when the proposal has been sent to committee and other times as appropriate.) The last step in the process is Senate approval; upon Senate approval, students can enroll in the new certificate.

By default, graduate certificates shall be approved for a period of six (6) years. Re-approvals are also for six years.

1. GENERAL INFORMATION			
1a	Home college: <i>Engineering</i>		
1b	Home educational unit (department, school, college <sup>1</sup> ): <i>Civil Engineering</i>		
1c	Office of Strategic Planning and Institutional Effectiveness (OSPIE) (Please contact OSPIE ( <a href="mailto:OSPIE@L.uky.edu">OSPIE@L.uky.edu</a> ) for help with questions in this section.)		
	Date of contact with OSPIE:		
	<input checked="" type="checkbox"/> Appended to the end of this form is a PDF of the reply from OSPIE.		
	<input checked="" type="checkbox"/> Appended to the end of this form is a letter(s) of administrative feasibility from the dean(s) of the college(s) offering the certificate.		
	CIP Code (confirmed by OSPIE): 14.0803		
1d	Proposed certificate name: <i>Graduate Certificate in Structural Engineering</i>		
1e	Requested effective date:	<input type="checkbox"/> Fall semester following approval.	OR <input checked="" type="checkbox"/> Specific Date <sup>2</sup> : <i>Fall 2019</i>
1f	Contact person name: <i>Y. T. Wang</i>	Email: <i>ywang@uky.edu</i>	Phone: <i>7-5937</i>
2. OVERVIEW			
2a	Provide a brief description of the proposed new graduate certificate. (300 word limit)		
	<i>The purpose of this online Structural Engineering Certificate is to provide students with the necessary background and technical skills required of professional structural engineers in response to the increasing need for well-prepared civil engineers to develop a more sustainable and resilient infrastructure to replace the aging ones in the United States. The Department of Civil Engineering will develop this online graduate certificate program by initially offering a 3-course, 9-credit hour Structural Engineering Certificate beginning Fall 2019. We plan to offer the first online course in Fall 2019, the second one in Spring 2020, and the third course will be delivered in Summer 2020.</i>		

<sup>1</sup> Only cross-disciplinary graduate certificates may be homed at the college level.

<sup>2</sup> Certificates are typically made effective for the semester following approval. No program will be made effective unless all approvals, up through and including University Senate approval, are received.

**NEW GRADUATE CERTIFICATE**

2b	This proposed graduate certificate (check all that apply):
	<input checked="" type="checkbox"/> Has a clear and focused academic competency as its subject.
	<input checked="" type="checkbox"/> Meets a clearly defined educational need of a constituency group (e.g. continuing education or licensing)
	<input type="checkbox"/> Responds to a specific state mandate.
	<input type="checkbox"/> Provides a basic competency in an emerging, preferably interdisciplinary, topic.
2c	<b>Affiliation.</b> Is the graduate certificate affiliated with a degree program? (related to 3c) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	If “yes,” include a brief statement of how it will complement the program. If “no,” incorporate a statement as to how it will provide an opportunity for a student to gain knowledge or skills not already available at UK. (300 word limit)
	<i>Since credits earned from the graduate structural engineering certificate can be transferred to our Master of Science in Civil Engineering Program, this certificate program has the potential to serve as the bridge between Bachelor of Science in Civil Engineering and Master of science in Civil Engineering by supporting our new and continuing student populations, especially nontraditional ones, to meet the increasing demand from the workforce. Students should be able to transfer the 9 credit hours earned from the Structural Engineering Certificate to our Master of Science in Civil Engineering program.</i>
2d	<b>Duplication.</b> Are there similar regional or national offerings? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
	If “Yes,” explain how the proposed certificate will or will not compete with similar regional or national offerings.
	<i>There are only a handful of other offerings of online Structural Engineering Certificates nationally including one from U of L. Initially, our certificate program is to provide opportunity for those who need a credentialed alternative to a full master’s degree. Ultimately, our goal is to offer an online 30-credit hour degree in Master of Science in Sustainable Infrastructure to include a broad area of civil engineering including structures, geotechnical, materials, transportation, environmental, and construction engineering. We expect a number of our own Students, and Western Kentucky University students, with a Bachelor of Science degree in Civil Engineering to enroll in our Department's certificate program instead of other National certificate programs.</i>
2e	<b>Rationale and Demand.</b> State the rationale for the new graduate certificate and explain the need for it (e.g. market demand, student requests, state mandate, interdisciplinary topic). (400 word limit)
	<i>Due to the aging domestic infrastructure, the demand for civil engineers is projected to grow by 8% by 2024. Additionally, the National Council of Examiners for Engineering and Surveying has approved a model licensure law requiring a Bachelor of Science in Engineering plus 30 credit hours course work or bachelor plus master degree to qualify for the Principles &amp; Practice Exam. Thus, many civil engineering design firms are beginning to insist on graduates with a master’s degree. In addition to the greater personal confidence associated with a master’s degree, the average national starting salary is at least \$5,000 higher per year for civil engineering graduates with a master’s degree. Therefore, both the need and incentive are there for our undergraduate students to pursue a graduate degree or certificate.</i>
2f	<b>Target student population.</b> Check the box(es) that apply to the target student population.
	<input type="checkbox"/> Currently enrolled graduate students.
	<input checked="" type="checkbox"/> Post-baccalaureate students.
2g	Describe the demographics of the intended audience. (150 word limit)

**NEW GRADUATE CERTIFICATE**

*The proposed online Structural Engineering Certificate will provide an excellent opportunity for professionals who need technical skills in this field, particularly for those whose job assignment requiring knowledge and formal education in structural engineering. Other targeted students may include those that need a credentialed alternative to a Master of Science in Civil Engineering degree.*

2h	<b>Projected enrollment.</b> What are the enrollment projections for the first three years?			
		<i>Year 1</i>	<i>Year 2 (Yr. 1 continuing + new entering)</i>	<i>Year 3 (Yrs. 1 and 2 continuing + new entering)</i>
	<i>Number of Students</i>	5	10	15

2i	<b>Distance learning (DL).</b> Initially, will any portion of the graduate certificate be offered via DL?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
If "Yes," please indicate below the percentage of the certificate that will be offered via DL.			
1% - 24% <input type="checkbox"/>		25% - 49% <input type="checkbox"/>	50% - 74% <input type="checkbox"/>
		75 - 99% <input type="checkbox"/>	100% <input checked="" type="checkbox"/>

If "Yes," describe the DL course(s) in detail, including the number of required DL courses. (300 word limit)

*We will offer three existing courses online by converting them to the asynchronous delivery mode on Canvas. All functions of Canvas will be fully utilized for posting course materials, homework assignments, annotated PowerPoint lecture videos and quizzes. Homework will be graded online while grades will be updated and viewed weekly. Communications between instructors and students will be by email, phone, and /or the Canvas discussion board. All exams will be proctored.*

**3. ADMINISTRATION AND RESOURCES**

3a	<b>Administration.</b> Describe how the proposed graduate certificate will be administered, including admissions, student advising, retention, etc. (150 word limit)
	Admissions: The certificate director and faculty of record will be responsible for the certificate curriculum and admission. Students who already are or will be enrolled in a degree program, or those who simply apply for post-baccalaureate (non-degree) status in order to complete the certificate, are eligible to apply for admission. The minimum requirements for admission to the graduate certificate curriculum are the same as those for post-baccalaureate status. Advising: Advising for all prospective and current students in the Certificate Program will be carried out by the certificate director (Professor Issam Harik) with input from the faculty of record. Advising will be conducted via any of the following methods: In-person meetings at UK, phone conversations, email messaging, and/or video conferencing. Retention: Each course instructor will be tracking the progress of each student on a bi-weekly basis. In the event a student's performance is not adequate, the instructor will communicate with the student and work with the student to improve the performance.

3b	<b>Faculty of Record and Certificate Director.</b> (related to 2c)
	The graduate certificate is affiliated with a degree program. Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

**NEW GRADUATE CERTIFICATE**

	<p>If “Yes,” list the name of the affiliated degree program below. If “No,” describe below the process for identifying the faculty of record and the certificate director, including selection criteria, term of service, and method for adding and removing members. <i>(150 word limit)</i></p>	
	<p>The director of the certificate program will be appointed by the Chair of the Department of Civil Engineering in consultation with the faculty of record. The appointment will be 3 years. Faculty of record will come from our structural engineering area faculty in the Department of Civil Engineering. The faculty of record will be responsible for the oversight and direction of the program and will all be voting members. The faculty of record has the authority to add and remove members. Faculty of Record: Dr. Issam Harik (CE), Professor, Director, Dr. Brad Davis (CE), Associate Professor, and Dr. Mariant Gutierrez-Soto, Assistant Professor.</p>	
3c	<p><b>Course utilization.</b> Will this graduate certificate include courses from another unit(s)?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
	<p>If “Yes,” two pieces of supporting documentation are required.</p> <p><input type="checkbox"/> Check to confirm that appended to the end of this form is a letter of support from the other units’ chair/director<sup>3</sup> from which individual courses will be used. The letter must include demonstration of true collaboration between multiple units<sup>4</sup> and impact on the course’s use on the home educational unit.</p> <p><input type="checkbox"/> Check to confirm that appended to the end of this form is verification that the chair/director of the other unit has consent from the faculty members of the unit. This typically takes the form of meeting minutes.</p>	
3d	<p><b>Financial Resources.</b> What are the (non-course) resource implications for the proposed graduate certificate, including any projected budget needs? <i>(300 word limit)</i></p>	
	<p><i>The development and delivery of this online certificate program will be sponsored by UK Online and the College of Engineering. The College of Engineering has necessary resources to develop a website for the program and to advertise as well as allow application to the certificate program. Additional marketing materials will also be developed by the College of Engineering, as necessary.</i></p>	
3e	<p><b>Other Resources.</b> Will the proposed certificate utilize resources (e.g. departmentally controlled equipment or lab space) from additional units/programs?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
	<p>If “Yes,” identify the other resources that will be shared. <i>(150 word limit)</i></p>	
	<p>If “Yes,” two pieces of supporting documentation are required.</p> <p><input type="checkbox"/> Check to confirm that appended to the end of this form is a letter of support from the appropriate chair/director<sup>4</sup> of the unit whose “other resources” will be used.</p> <p><input type="checkbox"/> Check to confirm that appended to the end of this form is verification that the chair/director of the other unit has consent from the faculty members of the unit. This typically takes the form of meeting minutes.</p>	

<sup>3</sup> A dean may submit a letter only when there is no educational unit below the college level, i.e. there is no department/school.

<sup>4</sup> Show evidence of detailed collaborative consultation with such units early in the process.

**NEW GRADUATE CERTIFICATE**

**4. IMPACT**

4a	<b>Other related programs.</b> Are there any related UK programs and certificates?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
If “Yes,” describe how the new certificate will complement these existing UK offerings. <i>(250 word limit)</i>			
If “Yes,” two pieces of supporting documentation are required.			
<input type="checkbox"/> Check to confirm that appended to the end of this form is a letter of support from each potentially-affected academic unit administrators.			
<input type="checkbox"/> Check to confirm that appended to the end of this form is verification that the chair/director has input from the faculty members of the unit. This typically takes the form of meeting minutes.			

**5. ADMISSIONS CRITERIA AND CURRICULUM STRUCTURE**

5a	<b>Admissions criteria.</b> List the admissions criteria for the proposed graduate certificate. <i>(150 word limit)</i>
<i>To be accepted to this program, students must have a degree in civil engineering or a closely related technical discipline with a minimum GPA of 3.0. Except for those who are already enrolled in a graduate degree program, students must apply for Postbaccalaureate (non-degree) status in order to be eligible for admission.</i>	

5b	<b>Core courses.</b> List the required core courses below.		
Prefix & Number	Course Title	Credit Hrs	Course Status <sup>5</sup>
CE 582	<i>Intermediate Structural Analysis</i>	3	Change
CE 586	<i>Prestressed Concrete</i>	3	Change
CE 687	<i>Advanced Steel Design</i>	3	Change
			Select one....
			Select one....
	<i>Total Credit Hours of Core Courses:</i>		

5c	<b>Elective courses.</b> List the electives below.		
Prefix & Number	Course Title	Credit Hrs	Course Status <sup>6</sup>
			Select one....
			Select one....
			Select one....
			Select one....
			Select one....
			Select one....

<sup>5</sup> Use the drop-down list to indicate if the course is a new course (“new”), an existing course that will change (“change”), or if the course is an existing course that will not change (“no change”).

<sup>6</sup> Use the drop-down list to indicate if the course is a new course (“new”), an existing course that will change (“change”), or if the course is an existing course that will not change (“no change”).

**NEW GRADUATE CERTIFICATE**

5d	Are there any other requirements for the graduate certificate? If “Yes,” note below. (150 word limit)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
5e	Is there any other narrative about the graduate certificate that should be included in the Bulletin? If “Yes,” please note below. (300 word limit)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<b>6. ASSESSMENT</b>			
6a	<b>Student learning outcomes.</b> Please provide the student learning outcomes for the graduate certificate. List the knowledge, competencies, and skills (learning outcomes) students will be able to do upon completion. (Use action verbs, not simply “understand.”) (250 word limit)		
<p><i>1. Students will apply Engineering and Mathematical models to develop solutions for the analysis and/or design of structural members and systems.</i></p> <p><i>2. Students will demonstrate an understanding of contemporary Structural Engineering topics.</i></p> <p><i>3. Students will effectively communicate the analysis and/or design of structural members and systems.</i></p>			
6b	<p><b>Student learning outcome (SLO) assessment.</b> How and when will student learning outcomes be assessed? Please map proposed measures to the SLOs they are intended to assess. Do not use grades or indirect measures (e.g. focus groups, surveys) as the sole method. Measures likely include artifacts such as course-embedded assessment (e.g., portfolios, research papers or oral presentations); and course-embedded test items (embedded test questions, licensure/certification testing, nationally or state-normed exams). (300 word limit)</p> <p><i>SLO1: Artifacts will come from the regularly assigned sets of homework that have embedded within them analysis and/or design questions requiring the application of Engineering and Mathematical models.</i></p> <p><i>SLO2: Artifacts will come from the specifically designed and assigned sets of homework that require the use of structural analysis and design computer programs and from the semester project.</i></p> <p><i>SLO3: Artifacts will come from the semester project that requires submittal of a PowerPoint presentation and a design and/or analysis report.</i></p> <p><i>Note: All artifacts will be assessed using standardized rubrics.</i></p>		
6c	<p><b>Certificate outcome assessment<sup>7</sup>.</b> Describe evaluation procedures for the proposed graduate certificate. Include how the faculty of record will determine whether the program is a success or a failure. List the benchmarks, the assessment tools, and the plan of action if the program does not meet its objectives. (250 word limit)</p>		
<p><i>The Structural Engineering Certificate outcome will be assessed using data obtained from the following criteria:</i></p> <ol style="list-style-type: none"> <li><i>1. Graduate Certificate enrollment</i></li> <li><i>2. Graduate Certificate completion</i></li> <li><i>3. Student course evaluations</i></li> <li><i>4. Employment rates of the graduates of the program</i></li> <li><i>5. New graduate surveys of the program conducted at the time of graduation</i></li> <li><i>6. Alumni surveys of the program conducted every 5 years</i></li> </ol> <p><i>We anticipate enrollment of 15+ students per year after 3 years with completion of 12+ student per year. We expect student course evaluation of all 3 certificate courses to be at or above the mean for comparable courses.</i></p>			

<sup>7</sup> This is a plan of how the certificate will be assessed, which is different from assessing student learning outcomes.

**NEW GRADUATE CERTIFICATE**

*Low enrollment, completion, and low student evaluations, as well as not meeting the goal of the certificate curriculum will necessitate a program review by the certificate faculty along with the Civil Engineering Department's Chair and Directors of Undergraduate and Graduate Studies to determine whether curriculum and administrative changes are necessary.*

**7. OTHER INFORMATION**

7a Is there any other information about the graduate certificate to add? (150 word limit)

**8. APPROVALS/REVIEWS**

Information below does not supersede the requirement for individual letters of support from educational unit administrators and verification of faculty support (typically takes the form of meeting minutes).

	<b>Reviewing Group Name</b>	<b>Date Approved</b>	<b>Contact Person Name/Phone/Email</b>
8a	<i>(Within College) In addition to the information below, attach documentation of department and college approval. This typically takes the form of meeting minutes but may also be an email from the unit head reporting department- and college-level votes.</i>		
			/ /
			/ /
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8b	<b>(Collaborating and/or Affected Units)</b>		
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8c	<b>(Senate Academic Council)</b>	<b>Date Approved</b>	<b>Contact Person Name</b>
	Health Care Colleges Council (if applicable)		
	Graduate Council		



## **Brothers, Sheila**

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**From:** Nikou, Roshan  
**Sent:** Monday, February 11, 2019 2:47 PM  
**To:** Bird-Pollan, Jennifer; Brothers, Sheila; Congleton, Nathan; Ett-Mims, Joanie; Jackson, Brian; Nikou, Roshan; Price, Cleophus  
**Cc:** Harmon, Camille; Alcalde, M. Cristina; Mains, Mark; Beck, Matthew; Maginnis, Michael; Wang, Yitin; john.silva@uky.edu  
**Subject:** Transmittals  
**Attachments:** GC in Diversity and Inclusion.pdf; Positive Youth Development Certificate1.pdf; Advanced Materials Characterization final.pdf; GC in Lean System.pdf; Blasting Graduate Certificate final.pdf; GC in Structural Engineering.pdf

TO: Jennifer Bird-Pollan, Chair and Sheila Brothers, Coordinator

FROM: Brian Jackson, Chair and Roshan Nikou, Coordinator  
Graduate Council

The Graduate Council approved the following Certificate and Course Proposals and is now forwarding them to the Senate Council to approve.

### **Programs/Certificates:**

GC in Diversity and Inclusion (related course A&S 600)  
GC in Positive Youth Development (PYD)  
GC in Advanced Materials Characterization  
GC in Explosive and Blasting (related courses MNG 625 and 621)  
GC in Structural Engineering

### **Program/Certificate Changes:**

GC in Lean System (related courses MFS 502 and 581)

### **New Courses:**

A&S - 600 - Perspectives on Diversity and Inclusion  
EPI - 717 - Introduction to Causal Inference  
MNG - 625 - Identification, Mitigation, and Control of the Environmental  
MFS - 502 - Introduction to Applied Lean Operations  
MFS - 581 - Quality Control  
STA - 674 - Regression Analysis and Design of Experiments  
STA 678 Statistical Computational Theory and Data Visualization: R and SAS



**University of Kentucky**  
**Department of Civil**  
**Engineering**

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P: 859-257-4856

F: 859-257-4404

[www.engr.uky.edu/ce](http://www.engr.uky.edu/ce)

December 9, 2018

To Whom It May Concern:

Please be advised that the Department of Civil Engineering faculty reviewed the Online Structural Engineering Graduate Certificate via email and there were no concerns or objections raised. The date of their approval is December 6, 2018.

I enthusiastically support the approval of this new certificate program.

Sincerely,

A handwritten signature in blue ink, reading 'Reg Souleyrette'.

Reginald R. Souleyrette  
Chair and Commonwealth Professor  
E-mail: [souleyrette@uky.edu](mailto:souleyrette@uky.edu)  
Telephone: 859-257-5309

see blue.

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**University of Kentucky**  
**College of Engineering**  
*Office of the Dean*

351 Ralph G. Anderson Bldg.  
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[www.engr.uky.edu](http://www.engr.uky.edu)

January 18, 2019

To Whom It May Concern:

This letter is to confirm that the faculty of the College of Engineering has reviewed and approved the attached proposal for a graduate certificate in Structural Engineering. The faculty reviewed the proposal documents via email and there were no concerns raised.

If you have any questions, please contact me.

Sincerely,

A handwritten signature in black ink that reads "Kimberly Anderson". The signature is written in a cursive, flowing style.

Kimberly Anderson, Ph.D.  
Associate Dean for Administration and  
Academic Affairs

**see blue.**

*An Equal Opportunity University*

**From:** [Pearson, RaeAnne](#)  
**To:** [Brandenburg, Barbara](#)  
**Cc:** [Weber, Annie](#)  
**Subject:** Notification of intent for Graduate Certificate in Structural Engineering, GCERT1, Post-baccalaureate Certificate (14.0803).  
**Date:** Tuesday, January 22, 2019 10:09:55 AM

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Dear Barbara Brandenburg ,

Thank you for submitting a Notification of intent for **Graduate Certificate in Structural Engineering, GCERT1, Post-baccalaureate Certificate (14.0803)**.

My email will serve 2 purposes: 1.) Next steps for SACSCOC, and 2.) Verification and notification that you have contacted OSPIE—a Senate requirement for proposal approval.

1. **Next steps for SACSCOC:** None required
2. **Verification that OSPIE has reviewed the proposal:** Based on the documentation presented the proposed program does not constitute a substantive change as defined by the University or SACSCOC, the university's regional accreditor. Therefore, no additional information is required by the Office of Strategic Planning & Institutional Effectiveness at this time. The proposed program change(s) may move forward in accordance with college and university-level approval processes.

***IMPORTANT:*** *Certificates (undergraduate and graduate) will be added to the CPE Inventory once they have been approved by the University Senate. For degree programs, an NOI will be submitted by the Office of Strategic Planning and Institutional Effectiveness to CPE and you will need to work closely with our office to ensure that your proposal meets all external CPE requirements and deadlines.*

Should you have any questions or concerns about UK's substantive change policy and its procedures, please do not hesitate to contact our office.

Office of Strategic Planning & Institutional Effectiveness  
University of Kentucky  
[Visit the Office of Strategic Planning and Institutional Effectiveness Website](#)



UNIVERSITY OF  
KENTUCKY®

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[www.engr.uky.edu](http://www.engr.uky.edu)

April 6, 2019

TO WHOM IT MAY CONCERN:

The College of Engineering has reviewed the proposal for the online graduate certificate in Structural Engineering. This review included the educational aspects and administrative feasibility of the proposed structure. I confirm that the proposal is administratively feasible and it has the support of our college.

Sincerely,

A handwritten signature in blue ink that reads "Rudy Buchheit".

Rudy Buchheit  
Dean, College of Engineering

see blue.

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UNIVERSITY OF KENTUCKY  
DEPARTMENT OF CIVIL ENGINEERING - COLLEGE OF NURSING  
**Fall 2019**  
**CE 582: Intermediate Structural Analysis**

**A DISTANCE LEARNING COURSE**

**CREDIT HOURS:** 3 credit hours

**PREREQUISITES:** Undergraduate level course in Structural Analysis (e.g., CE 382 or CE 499), be registered in the College of Engineering, or consent of instructor.

**COURSE DESCRIPTION:** Analysis of indeterminate, truss, frame and arch structures using energy principles associated with the flexibility and stiffness methods; influence line functions for indeterminate structures; and use of available computer programs for structural analysis and matrix operations.

**STUDENT LEARNING OUTCOMES:**

1. Force (flexibility) method: Analysis of statically indeterminate trusses.
2. Force (flexibility) method: Analysis of statically indeterminate beams and frame structures.
3. Displacement (stiffness) method: Analysis of statically indeterminate trusses.
4. Displacement (stiffness) method: Analysis of statically indeterminate beams and frame structures.

**COURSE GOALS OR OBJECTIVES:** Understand the basic principles of statically indeterminate structural analysis, and to apply these principles to the design of structures.

**COURSE FACULTY:** Issam E. Harik, Ph.D.

Phone: 859-257-3116

Email: [Harik@uky.edu](mailto:Harik@uky.edu) (preferred contact)

Virtual office hours: By appointment

**REQUIRED TEXT:** Structural Analysis (10th Edition) by Russell C. Hibbeler, Pearson Publishing, 2018. Isbn10: 0134679725 and Isbn13: 9780134679723

**REQUIRED READINGS:** Course notes prepared by Dr. Harik (Free pdf download).

**CLASS MEETING TIMES:** This course will use an on line learning format. The course will be taught via a web-enhanced format and alternative and experiential learning assignments.

**Because no technology is ever completely fail-safe, we ask that students maintain back-up copies of all coursework.**

**COURSE CONTENT:** Course content will be divided into eight modules. One module will be focused on each week. Each week students will be assigned reading assignments and activities related to module content, and students will be expected to sequentially complete activities as outlined on the class schedule.

### **COURSE ASSIGNMENTS:**

- 1. Homework:** There will be 8-sets of homework during the semester.
- 2. Research and/or Analysis Report for Graduate Students and University Scholars:**  
In order to satisfy the Southern Association of Colleges and Schools (SACS) requirement for graduate students and university scholars registered in a UK CE 500 level course, graduate students and university scholars registered in CE 582 will be required to submit a research and/or analysis report. Graduate students and university scholars will be assigned a topic by the end of the third week of classes.

### **SUBMISSION OF ASSIGNMENTS:**

- Homework and reports must be submitted on Canvas by mid night on the due date.
- In cases of emergency which will prevent completion by the due date/time, please contact the faculty to request an extension PRIOR to the deadline, if possible.
- Assignments must be submitted on Canvas in pdf format.
- Each homework set must be submitted in a single pdf file that is legible after being scanned. It is recommended to use a dark pen or a pencil on white or Engineering paper.
- Homework and report assignments are due by midnight on the due date. Assignments turned in late, but within 24 hours following the due date and time, will be penalized by 20% . Assignments turned in after the 24-hour late window will not be graded.

**MID-TERM EXAM:** The mid-term exam is based on the material covered for learning outcomes 1 and 2. The mid-term grades will be posted by the deadline established in the Academic Calendar

**FINAL EXAM:** The final exam will be comprehensive.

### **NOTES FOR EXAMS:**

- A photo ID is required for the exams.
- The mid-term exam and final exam are proctored exams and will be administered on the University of Kentucky campus. However, arrangements can be made to use various proctoring centers. In most instances, a proctoring fee will be incurred. It is the student's responsibility to notify the instructor within the first week of class and provide contact

information for the off-campus proctoring service he or she intends to use.

- The exams are closed books and notes. Equations and other notes will be provided.
- The calculator must be on the list approved for the FE by the NCEES (e.g., HP 33s and HP 35s models, all FX-115 models, all TI-30X and TI-36X models).
- Use of a cell phone and any other electronic devices is not allowed.

**NOTES FOR MAKEUP WORK OR EXAMS:** Makeup work or exams will only be given with valid excuse. Refer to the “**EXCUSED ABSENCES**” section for details.

**EVALUATION:** Evaluation will be based on student achievement of the objectives and student learning outcomes as demonstrated by performance involving the course assignments and exams:

Assignments/Exam	Overall Weight
Homework	20%
Mid-Term Exam	30%
Final Exam	50%

### **COURSE GRADING:**

#### **Grading scale for undergraduate students:**

90 - 100% = A

80 - 89% = B

70 - 79% = C

60 - 69% = D

< 59% = E

#### **Grading scale for graduate students and University Scholars (no D for Grad Students and University Scholars):**

92 - 100% = A

82 - 91% = B

72 - 81% = C

< 71% = E



## DISTANCE LEARNING INFORMATION

### TEACHING/LEARNING METHODS

This course will be taught using a combination of methods. Students must be self-directed and demonstrate initiative to be successful in an online course. Course faculty are available for support and feedback. The course content/lectures and assignments will be available on Canvas. Students will utilize the internet to perform literature searches, participate in discussions, use email and connect with faculty and classmates through virtual technology in Canvas. Computer technology will enhance the learning process by allowing collaboration with peers and faculty. The course is interactive and participation will be required. All students are required to meet the computer and technology requirements listed below.

### COMPUTER ACCESS EXPECTATIONS

Students must meet assignment deadlines, but are not required to be online at specific, assigned times. This is an interactive course and we highly recommend accessing the course in Canvas at least three times per week to be fully engaged and successful. If for some reason, you cannot access the site at home due to temporary computer breakdown or other circumstances, it is your responsibility to access the site through other means (e.g., going to local public or school library). This course is heavy in reading and writing/communications requirements; plan time for interactions and completion of assignments. Technical support is available at: UK Information Technology Center <http://www.uky.edu/UKAT/> See the Tech Tips Link

### EMAIL REQUIREMENTS

Students are required to use their university email account to send and receive email. Only emails sent through the UK email system will be opened by faculty. Due to the risk of computer viruses, no unauthorized email accounts will be opened by faculty. Any email sent to notify faculty of an impending absence from class or clinical, should include a “Request a Delivery Receipt” or “Request a Read Receipt” before hitting the send button. This feature is located in the “options” tab. *Please check your UK email at least every 48 hours.*

### WHAT DOES ONLINE LEARNING MEAN?

This means that the course materials will be available to you on the web and that you will turn assignments in on the web. This does not mean, however, that the course is not interactive. For example, you may participate in on-line discussions with other class members and faculty as needed using virtual meeting technology available through Canvas. **Because no technology is ever completely fail-safe, we ask that students maintain back-up copies of all coursework.**

### COMPUTER REQUIREMENTS

This web-enhanced course requires the following: (1) a computer with high speed access to the internet (Ethernet, broadband cable or DSL connection) and an internet browser.

**MINIMUM REQUIRED LAPTOP COMPUTER HARDWARE**

- Processor: Dual Core 1.8 Ghz or higher
- RAM: 4 GB minimum (more preferred)
- Hard Drive: 250 GB or larger preferred (minimum 100 GB or larger)
- Wireless card: 802.11n preferred (minimum 802.11 b/g compatible)
- Operating system: Most recent version for your hardware (for example, Mac OS 10.10+ or Windows 8+)
- Up-to-date virus software, preferably installed before coming to campus
- Webcam (many laptops come with an integrated webcam and will not require an external device)
- Headphones or headset with microphone
- *Other helpful options:* 2 GB or higher USB Flash Drive, external hard drive (for data backup/extra storage), wired or wireless external mouse, video out adapters (dvi/hdmi), and a laptop security cable

**MINIMUM REQUIRED TABLET COMPUTER HARDWARE**

- Processor: Dual Core 1.3 Ghz or higher | Apple A5 or higher
- Storage capacity: 32 GB or larger
- Operating system: Most recent version for your hardware (for example, Windows 8.1, Windows RT, iOS 8)

Because tablets have less storage than laptops, tablet users with high-speed Internet connectivity can use UK's virtual desktop and application solution ([www.uky.edu/VirtualDEN](http://www.uky.edu/VirtualDEN)) to expand the number of applications available to them. See further below in this document about the software this service provides. Also, many tablets have HDMI or USB ports for connecting external monitors, keyboards, mouse, headset, and other devices.

**SOFTWARE**

Visit <https://download.uky.edu/> to learn about software available free of charge or at a reduced rate. If you do not have Microsoft Office 2007 or later then please download Microsoft Office 2007, which is available free to all university students from <http://e5.onthehub.com/WebStore/Welcome.aspx?ws=f43536c5-bbb4-dd11-b00d-0030485a6b08&vsro=8&JSEnabled=1>

Contact the University of Kentucky Instructional Technology Customer Service Center (257-1300) for download instructions.

It is important to have a basic understanding of how to use the World Wide Web (web) as well as Microsoft Office products (Word, PowerPoint, Excel, and Exchange). If you need assistance, help is available in The Hub, located in the basement of W.T. Young Library. For more information, visit <http://www.uky.edu/Libraries/hub>. In addition, students should be able to use the internet to access the Medical Center and other UK Libraries, search library data bases, and obtain literature necessary for class work and assignments.

**STUDENT SUPPORT**

**If you have problems with Canvas:** Following are the resources available to help you if you are having problems or technical challenges/conflicts when using Canvas. There is 24/7 support through the help tab inside Canvas. If the problems you are having affects completion or submission of an assignment, please email the instructor explaining the problem and the steps you are taking/have taken to correct the problem.

**CANVAS SUPPORT**

- Please use the Canvas help hotline 844-480-0838 for issues with Canvas or the HELP menu in the Canvas application.
- There are TUTORIALS in Canvas that may be helpful in resolving some issues.
- Canvas Issues: The help button provides links to guides and videos, the hotline number and a link to live chat. Live chat has been particularly helpful to us and they can help a student while they are having the issue.

**SUPPORT FROM UKAT**

UKAT's Academic Technology Group (ATG) offers online tutorials and face-to-face training, as well as technicians who specialize in troubleshooting issues that arise for students.

- UKIT technicians can be reached by calling 859-218-HELP (4357), where the Customer Service Center can troubleshoot many issues immediately. You can also email [218help@uky.edu](mailto:218help@uky.edu). Complicated issues will be escalated to the technicians in ATG.
- Web: <http://www.uky.edu/UKAT/>

If you need one-on-one assistance, ATG can meet with you to discuss your needs and walk you through the steps. Call 257-8195 to request one-on-one time with one of our staff or student team.

**DISTANCE LEARNING PROGRAMS:** <http://www.uky.edu/ukonline/>

**OTHER UK TECHNOLOGY SUPPORT SERVICES**

Need help with recording your video assignments or uploading them to Canvas?

The Media Depot is a student digital media space located in the Hub at William T. Young Library. The Media Depot provides; access to recording equipment and space, editing stations with specialized multimedia software, and technical support for students' development of their academic media projects.

<http://www.uky.edu/ukat/mediadepot> **Phone Number: (859) 323-1105**

### **INSTRUCTOR COMMUNICATIONS**

Instructors have agreed to try to maintain the following communication standards:

- Faculty will check email at least daily Monday-Friday and respond as soon as possible but within 2 business days.
- If students have several questions about something or are confused, then they should call their faculty member. If the faculty member is not available, then a voicemail message should be left.
- There is a discussion board set up in Canvas where you may post questions and view answers to other students' questions. Faculty will check this board frequently.

### **LIBRARY RESOURCES**

Distance Learning Library Services

Web: <http://libraries.uky.edu/DLLS>

Carla Cantagallo, DL Librarian Phone: 859 257-0500, ext. 2171

Long distance phone number (800) 828-0439 (option #6)

Email: [carla@uky.edu](mailto:carla@uky.edu)

DL Interlibrary Loan Service: [http://libraries.uky.edu/page.php?lweb\\_id=253](http://libraries.uky.edu/page.php?lweb_id=253)

### **COURSE EVALUATION**

The University policy on faculty performance review requires that faculty obtain student evaluations of teaching for every course every semester. To meet this requirement, the College of Nursing uses web-based surveys on a confidential site for faculty and course evaluation. All students enrolled in this course are required to access the CoursEval website to fill out evaluations or to decline the opportunity within the designated time frame. Students should take this opportunity to provide serious input regarding faculty performance and course evaluation. These evaluations are used by the College of Nursing to improve the curriculum and enhance faculty teaching. Evaluations are completely anonymous. The information is compiled and shared with individual faculty members and appropriate administrators only after final grades are submitted. **To receive announcements about the evaluations, students must activate and use their UK email addresses. Forwarding UK email to an alternate address is not a viable option.**

**COURSE POLICIES AND PROFESSIONAL STANDARDS ATTENDANCE:****EXCUSED ABSENCES**

Students need to notify the professor of absences prior to class if possible. *Senate Rules 5.2.4.2* defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, (e) full-time job, (f) graduate school interview for graduating students, and (e) other circumstances found to fit “reasonable cause for nonattendance” by the professor.

Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Two weeks prior to the absence is reasonable, but should not be given any later. Information regarding major religious holidays may be obtained through the Ombud (859-257-3737,

[http://www.uky.edu/Ombud/ForStudents\\_ExcusedAbsences.php](http://www.uky.edu/Ombud/ForStudents_ExcusedAbsences.php).

Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed (excused) per University policy.

**MAKE-UP ASSIGNMENTS**

Per *Senate Rule 5.2.4.2*, students missing any graded work due to an excused absence are responsible: for informing the Instructor of Record about their excused absence within one week following the period of the excused absence (except where prior notification is required); and for making up the missed work. The professor must give the student an opportunity to make up the work and/or the exams missed due to an excused absence, and shall do so, if feasible, during the semester in which the absence occurred.

**VERIFICATION OF ABSENCES**

Students may be asked to verify their absences in order for them to be considered excused. *Senate Rule 5.2.4.2* states that faculty have the right to request “appropriate verification” when students claim an excused absence because of illness, or death in the family. Appropriate notification of absences due to University-related trips is required prior to the absence when feasible and in no case more than one week after the absence.  
beginning the practicum.

### **ACADEMIC INTEGRITY**

Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website: <http://www.uky.edu/Ombud>. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Part II of *Student Rights and Responsibilities* (available online <http://www.uky.edu/StudentAffairs/Code/part2.html>) states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about the question of plagiarism involving their own work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows from another source without appropriate acknowledgement of the fact, the students are guilty of plagiarism. Plagiarism includes reproducing someone else's work. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be.

Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone.

### **ACCOMODATIONS DUE TO DISABILITY**

*"If you have a documented disability that requires academic accommodations, please see me as soon as possible during virtual office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (DRC). The DRC coordinates campus disability services available to students with disabilities. It is located on the corner of Rose Street and Huguelet Drive in the Multidisciplinary Science Building, Suite 407. You can reach them via phone at (859) 257-2754 and via email at [drc@uky.edu](mailto:drc@uky.edu). Their web address is <http://www.uky.edu/StudentAffairs/DisabilityResourceCenter/>.*

## CE - 582 - Intermediate Structural Analysis

### New Course Form

#### New Course

Turn on help text

\* denotes required fields

#### 1. General Information

a. Submitted by the College of:*	College of Engineering (8H000)		
b. Department/Division:*	Civil Engineering (8H300)		
c. Contact Person Name:*	Issam E. Harik		
Email:*	Harik	Phone:*	859-257-3116
d. Requested Effective Date:*	<input type="radio"/> Semester following approval <input checked="" type="radio"/> Specific Term/Year		If Specific Term/Year: Fall 2019

Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.

Is this course clinical? Also select "Yes" if the course is not clinical but you wish for the course to be reviewed by the HCCC*	<input type="radio"/> Yes <input checked="" type="radio"/> No
What is the rationale for this proposal?*	The course will be part of the Structural Engineering Certificate Program. It will be delivered via Distance Learning through Canvas.

#### 2. Designation and Description of Proposed Course.

a. Will this course also be offered through Distance Learning?*	<input checked="" type="radio"/> Yes <input type="radio"/> No
---	---

You must also submit the Distance Learning Form in order for the proposed course to be considered for DL delivery.

b. Prefix:*	CE	Number:*	582
c. Full Title:*	Intermediate Structural Analysis		
d. Transcript Title (if full title is more than 40 characters):			
e. To be Cross-listed with (Prefix and Number):			

Using the Files tab in the Proposal Toolbox, attach a letter of support from the chair of the cross-listing department.

f. Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours for each meeting pattern type.

In general, undergraduate courses are developed on the principle that one semester hour of credit represents one hour of classroom meeting per week for a semester, exclusive of any

laboratory meeting. Laboratory meeting, generally, re: two hours per week for a semester for one credit hour. (from SR 5.2.1)

For courses with variable credit, please use the following format (no spaces): ###

Lecture:	
Laboratory:	
Clinical:	
Colloquium:	
Seminar:	
Studio:	
Recitation:	
Residency:	
Discussion:	
Indep.Study:	
Practicum:	
Research:	
Other:	

**g. Identify a grading system:\***

Letter (A, B, C, etc.)  
 Pass/Fail  
 Medicine Numeric Grade  
 Graduate Level Grade Scale

**h. Number of credits:\*** 3

**i. Is this course repeatable for additional credit?\***

Yes  No

**If YES: Maximum number of credit hours:**

**If YES: Will this course allow multiple registrations during the same semester?**

Yes  No

**j. Course Description for Bulletin:\*** Analysis of indeterminate, truss, frame and arch structures using energy principles associated with the flexibility and stiffness methods; influence line functions for indeterminate structures; and use of available computer programs for structural analysis and matrix operations.

**k. Prerequisites, if any:** CE 382 or CE 499, or consent of instructor.

**3. Will this course be taught off campus?**

**a.\***  Yes  No

**If YES, enter the off campus address:**

**4. Frequency of Course Offering.**

**a. Course will be offered (check all that apply):\***  Fall  Spring  Summer  Winter

**b. Will the course be offered every year?\***  Yes  No

**If No, explain:**

**5. Facilities and Personnel**

**a. Are facilities and personnel necessary for the**  Yes  No



proposed new course available?\*

If No, explain: The course will be delivered as a distance learning course via Canvas.

#### 6. Enrollment

a. What enrollment (per section per semester) may reasonably be expected?\*

10 to 15 students. The enrollment may be low the first year.

#### 7. Anticipated Student Demand.

a. Will this course serve students primarily within the degree program?\*

Yes  No

b. Will it be of interest to a significant number of students outside the degree pgm?\*

Yes  No

If YES, explain: The students taking this course are graduate civil engineering students who hold a BS in Civil Engineering and are currently working in a design firm. They do not require access to the usual student services.

This course is part of a 3-course proposed Graduate Structural Engineering Certificate within the Department of Civil Engineering.

#### 8. Check the category most applicable to this course:

Check one:\*

Traditional – Offered in Corresponding Departments at Universities Elsewhere

Relatively New – Now Being Widely Established

Not Yet Found in Many (or Any) Other Universities

#### 9. Course Relationship to Program(s).

a. Is this course part of a proposed new program?\*

Yes  No

If YES, name the proposed new program:

Graduate Certificate in Structural Engineering

b. Will this course be a new requirement for ANY program?\*

Yes  No

If YES, list affected programs:

In order to change a program, a program change form must also be submitted.

#### 10. Information to be Placed on Syllabus.

a. Is the course at the 400G- or 500-level?\*

Yes  No

If YES, the *differentiation for undergraduate and graduate students must be included* in the information required in 10.b. You must include: (i) identification of additional assignments by the graduate students; and/or (ii) establishment of different grading criteria in the course for graduate students. (See SR 3.1.4)

Confirm  b. \*The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if appl 10.a above) are attached.

#### Distance Learning Form

This form must accompany every submission of a new/change course form that requests a

change in deliver mode. All fields are required!

**Introduction/Definition:** For the purposes of the Commission on Colleges Southern Association of Colleges and Schools accreditation review, *distance learning* is defined as a formal educational process in which the majority of the instruction (interaction between students and instructors and among students) in a course occurs when students and instructors are not in the same place. Instruction may be synchronous or asynchronous. A distance learning (DL) course may employ correspondence study, or audio, video, or computer technologies.

A number of specific requirements are listed for DL courses. **The department proposing the change in delivery method is responsible for ensuring that the requirements below are satisfied at the individual course level.** It is the responsibility of the instructor to have read and understood the university-level assurances regarding an equivalent experience for students utilizing DL (available at <http://www.uky.edu/USC/New/forms.htm>).

Instructor Name: Issam E. Harik Instructor Email: Harik@uky.edu

Check the method below that best reflects how the majority of the course content will be delivered.

Internet/Web-based  
 Interactive Video  
 Hybrid

### Curriculum and Instruction

**1. How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations?**

Students and faculty will asynchronously engage at least weekly during online discussions, emails, and submittals. Students will interact asynchronously at least weekly in online discussions. The course syllabus conforms to University Guidelines for distance learning.

**2. How do you ensure that the experience for DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc.**

Students will view the same lectures as they would view if they were in a traditional classroom environment. They will complete the same homework and exams. They will be able to ask the instructor for help using Canvas, email, or phone.

**3. How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc.**

Students are allowed to work together on homework assignments, although each must submit individual work via Canvas, which is password protected. Exams will be proctored on campus or at testing centers.

**4. Are you adding distance learning delivery to this course as part of an effort to offer a complete degree program 100% online?**

Yes  No

**If yes, which program(s)?** The students taking this course are graduate civil engineering students. They do not require access to the usual student services.

**5. How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting?**

Students have access to the instructor through Canvas, email, or phone calls, so they can ask questions. They will also have access to the UK libraries and Distance Librarian liason, Carla Cantagallo. Virtual office hours will also be provided for students to interact with the instructor as needed.

### Library and Learning Resources

**6. How do course requirements** No learning resources are needed outside those provided by the instructor. The course homework assignments and exams will ensure that the students

ensure that students make appropriate use of learning resources? make appropriate use of the learning resources.

7. Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program. No such resources are required. In addition to the required textbook, all additional required course material (lecture notes, relevant documents, etc.) will be provided free of charge by the instructor through Canvas.

### Student Services

8. How are students informed of procedures for resolving technical complaint? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Canvas Support Hotline/Chat or ITS Service Desk? Students will contact the instructor if they have difficulties. Also, the syllabus provides contact information for Distance Learning Library Services. Canvas and UK IT support information is available in Canvas. Students will be advised to call Canvas help hotline or live chat (available 24 hours/day) for issues related to course accessibility.

Canvas Support Hotline/Chat (<https://uk.instructure.com/>; Click Help Button for 24/7 service)

Information Technology Services (ITS) Service Desk (<http://www.uky.edu/UKIT/Help/>)

9. Will the course be delivered via services available through ITS Academic Technologies & Faculty Engagement?  Yes  No

If no, explain how students enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology.

10. Does the syllabus contain all the required components, below?  Yes

Instructor's *virtual* office hours, if any.

The technological requirements for the course.

Contact information for Information Technology Customer Service Center:

Web: <http://www.uky.edu/UKIT/>

Phone: 859-218-HELP

Web Address for Distance Learning Programs: <http://www.uky.edu/ukonline/>

Procedure for resolving technical complaints.

Preferred method for reaching instructor, e.g. email, phone, text message.

Maximum timeframe for responding to student communications.

Language pertaining academic accommodations:

*"If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (DRC). The DRC coordinates campus disability services available to students with disabilities. It is located on the corner of Rose Street and Huguelet Drive in the Multidisciplinary Science Building, Suite 407. You can reach them via phone at (859) 257-2754 and via email at [drc@uky.edu](mailto:drc@uky.edu). Their web address is <http://www.uky.edu/StudentAffairs/DisabilityResourceCenter/>.*

Information on Distance Learning Library Services

Carla Cantagallo, DL Librarian

Web: <http://libraries.uky.edu/DLLS>

Phone: 859 218-1240

Email: [carla@uky.edu](mailto:carla@uky.edu)

DL Interlibrary Loan Service: <http://libraries.uky.edu/ILL>

11. I, the instructor of record, have read and understood all of the university-level statements regarding DL.

**Instructor Name:** Issam E. Harik

**Administration Use Only**

**OBJID**

UNIVERSITY OF KENTUCKY  
DEPARTMENT OF CIVIL ENGINEERING - COLLEGE OF NURSING

## Spring 2020

# CE 586: Prestressed Concrete

**A DISTANCE LEARNING COURSE**

**CREDIT HOURS:** 3 credit hours

**PREREQUISITES:** Undergraduate level course in Reinforced Concrete (e.g., CE 486G, CE 482, or CE 499), be registered in the College of Engineering, or consent of instructor.

**COURSE DESCRIPTION:** Fundamental basis and underlying principles for the analysis and design of Prestressed concrete. Working stress and ultimate strength design methods, full and partial prestressing. Design for shear and torsion, deflection, crack control, and long-term effects, and prestress losses. Composite beams, slabs, short and slender columns, precast structures and their connections.

**STUDENT LEARNING OUTCOMES:**

1. Flexure: Working stress analysis and design of prestressed concrete beams.
2. Flexure: Ultimate strength analysis and design of prestressed concrete beams.
3. Shear design of prestressed concrete beams.
4. Prestress losses.
5. Continuous prestressed concrete beams.

**COURSE GOALS OR OBJECTIVES:** Understanding of the basic principles for the analysis and design of prestressed concrete structural members.

**COURSE FACULTY:** Issam E. Harik, Ph.D.  
Phone: 859-257-3116  
Email: [Harik@uky.edu](mailto:Harik@uky.edu) (preferred contact)  
Virtual office hours: By appointment

**REQUIRED TEXT:** Course notes prepared by Dr. Harik (Free pdf download).

**REFERENCES:** 1. ACI 318 Code + Commentary  
2. AASHTO LRFD Code

**CLASS MEETING TIMES:** This course will use an on line learning format. The course will be taught via a web-enhanced format and alternative and experiential learning assignments.

**Because no technology is ever completely fail-safe, we ask that students maintain back-up copies of all coursework.**

**COURSE CONTENT:** Course content will be divided into five modules corresponding to the learning outcomes. Modules 1, 2, and 3 are divided into four submodules each, and modules 4 and 5 are divided into two submodules each. Each submodule will be focused on each week. Each week students will be assigned reading assignments and activities related to submodule content.

### **COURSE ASSIGNMENTS:**

**1. Homework:** There will be 8-sets of homework during the semester.

#### **2. Semester Project:**

- A project will be identified for each student by the end of the third week of classes.
- The project report outline is due by mid-February (Date TBD).
- The project report and presentation are due by the first week in April (Date TBD).
- Oral presentations will be held on Canvas during the second week in April (Date TBD).
- The report and oral presentation will count 10% of the total course grade.

#### **3. Research and/or Analysis Report for Graduate Students and University Scholars:**

In order to satisfy the Southern Association of Colleges and Schools (SACS) requirement for graduate students and university scholars registered in a UK CE 500 level course, graduate students and university scholars registered in CE 586 will be required to submit a research and/or analysis report. Graduate students and university scholars will be assigned a topic by the end of the third week of classes.

### **SUBMISSION OF ASSIGNMENTS:**

- Homework and reports must be submitted on Canvas by mid night on the due date.
- In cases of emergency which will prevent completion by the due date/time, please contact the faculty to request an extension PRIOR to the deadline, if possible.
- Assignments must be submitted on Canvas in pdf format.
- Each homework set must be submitted in a single pdf file that is legible after being scanned. It is recommended to use a dark pen or a pencil on white or Engineering paper.
- Homework and report assignments are due by midnight on the due date. Assignments turned in late, but within 24 hours following the due date and time, will be penalized by 20% . Assignments turned in after the 24-hour late window will not be graded.

**MID-TERM EXAM:** The mid-term exam is based on the material covered for learning outcomes 1 and 2. The mid-term grades will be posted by the deadline established in the Academic Calendar

**FINAL EXAM:** The final exam will be comprehensive.

**NOTES FOR EXAMS:**

- A photo ID is required for the exams.
- The mid-term exam and final exam are proctored exams and will be administered on the University of Kentucky campus. However, arrangements can be made to use various proctoring centers. In most instances, a proctoring fee will be incurred. It is the student's responsibility to notify the instructor within the first week of class and provide contact information for the off-campus proctoring service he or she intends to use.
- The exams are closed books and notes. Equations and other notes will be provided.
- The calculator must be on the list approved for the FE by the NCEES (e.g., HP 33s and HP 35s models, all FX-115 models, all TI-30X and TI-36X models).
- Use of a cell phone and any other electronic devices is not allowed.

**NOTES FOR MAKEUP WORK OR EXAMS:** Makeup work or exams will only be given with valid excuse. Refer to the "**EXCUSED ABSENCES**" section for details.

**EVALUATION:** Evaluation will be based on student achievement of the objectives and student learning outcomes as demonstrated by performance involving the course assignments and exams:

Assignments/Exam	Overall Weight
Homework	20%
Semester Project	10%
Mid-Term Exam	30%
Final Exam	40%

**COURSE GRADING:**

**Grading scale for undergraduate students:**

- 90 - 100% = A
- 80 - 89% = B
- 70 - 79% = C
- 60 - 69% = D
- < 59% = E

**Grading scale for graduate students and University Scholars (no D for Grad Students and University Scholars):**

- 92 - 100% = A
- 82 - 91% = B
- 72 - 81% = C
- < 71% = E

**DISTANCE LEARNING INFORMATION**

### **TEACHING/LEARNING METHODS**

This course will be taught using a combination of methods. Students must be self-directed and demonstrate initiative to be successful in an online course. Course faculty are available for support and feedback. The course content/lectures and assignments will be available on Canvas. Students will utilize the internet to perform literature searches, participate in discussions, use email and connect with faculty and classmates through virtual technology in Canvas. Computer technology will enhance the learning process by allowing collaboration with peers and faculty. The course is interactive and participation will be required. All students are required to meet the computer and technology requirements listed below.

### **COMPUTER ACCESS EXPECTATIONS**

Students must meet assignment deadlines, but are not required to be online at specific, assigned times. This is an interactive course and we highly recommend accessing the course in Canvas at least three times per week to be fully engaged and successful. If for some reason, you cannot access the site at home due to temporary computer breakdown or other circumstances, it is your responsibility to access the site through other means (e.g., going to local public or school library). This course is heavy in reading and writing/communications requirements; plan time for interactions and completion of assignments. Technical support is available at: UK Information Technology Center <http://www.uky.edu/UKAT/> See the Tech Tips Link

### **EMAIL REQUIREMENTS**

Students are required to use their university email account to send and receive email. Only emails sent through the UK email system will be opened by faculty. Due to the risk of computer viruses, no unauthorized email accounts will be opened by faculty.

Any email sent to notify faculty of an impending absence from class or clinical, should include a “Request a Delivery Receipt” or “Request a Read Receipt” before hitting the send button.

This feature is located in the “options” tab. *Please check your UK email at least every 48 hours.*

### **WHAT DOES ONLINE LEARNING MEAN?**

This means that the course materials will be available to you on the web and that you will turn assignments in on the web. This does not mean, however, that the course is not interactive. For example, you may participate in on-line discussions with other class members and faculty as needed using virtual meeting technology available through Canvas. **Because no technology is ever completely fail-safe, we ask that students maintain back-up copies of all coursework.**

### **COMPUTER REQUIREMENTS**

This web-enhanced course requires the following: (1) a computer with high speed access to the internet (Ethernet, broadband cable or DSL connection) and an internet browser.



**MINIMUM REQUIRED LAPTOP COMPUTER HARDWARE**

- Processor: Dual Core 1.8 Ghz or higher
- RAM: 4 GB minimum (more preferred)
- Hard Drive: 250 GB or larger preferred (minimum 100 GB or larger)
- Wireless card: 802.11n preferred (minimum 802.11 b/g compatible)
- Operating system: Most recent version for your hardware (for example, Mac OS 10.10+ or Windows 8+)
- Up-to-date virus software, preferably installed before coming to campus
- Webcam (many laptops come with an integrated webcam and will not require an external device)
- Headphones or headset with microphone
- *Other helpful options:* 2 GB or higher USB Flash Drive, external hard drive (for data backup/extra storage), wired or wireless external mouse, video out adapters (dvi/hdmi), and a laptop security cable

**MINIMUM REQUIRED TABLET COMPUTER HARDWARE**

- Processor: Dual Core 1.3 Ghz or higher | Apple A5 or higher
- Storage capacity: 32 GB or larger
- Operating system: Most recent version for your hardware (for example, Windows 8.1, Windows RT, iOS 8)

Because tablets have less storage than laptops, tablet users with high-speed Internet connectivity can use UK's virtual desktop and application solution ([www.uky.edu/VirtualDEN](http://www.uky.edu/VirtualDEN)) to expand the number of applications available to them. See further below in this document about the software this service provides. Also, many tablets have HDMI or USB ports for connecting external monitors, keyboards, mouse, headset, and other devices.

**SOFTWARE**

Visit <https://download.uky.edu/> to learn about software available free of charge or at a reduced rate. If you do not have Microsoft Office 2007 or later then please download Microsoft Office 2007, which is available free to all university students from <http://e5.onthehub.com/WebStore/Welcome.aspx?ws=f43536c5-bbb4-dd11-b00d-0030485a6b08&vsro=8&JSEnabled=1>

Contact the University of Kentucky Instructional Technology Customer Service Center (257-1300) for download instructions.

It is important to have a basic understanding of how to use the World Wide Web (web) as well as Microsoft Office products (Word, PowerPoint, Excel, and Exchange). If you need assistance, help is available in The Hub, located in the basement of W.T. Young Library. For more information, visit <http://www.uky.edu/Libraries/hub>. In addition, students should be able to use the internet to access the Medical Center and other UK Libraries, search library data bases, and obtain literature necessary for class work and assignments.

**STUDENT SUPPORT**

**If you have problems with Canvas:** Following are the resources available to help you if you are having problems or technical challenges/conflicts when using Canvas. There is 24/7 support through the help tab inside Canvas. If the problems you are having affects completion or submission of an assignment, please email the instructor explaining the problem and the steps you are taking/have taken to correct the problem.

**CANVAS SUPPORT**

- Please use the Canvas help hotline 844-480-0838 for issues with Canvas or the HELP menu in the Canvas application.
- There are TUTORIALS in Canvas that may be helpful in resolving some issues.
- Canvas Issues: The help button provides links to guides and videos, the hotline number and a link to live chat. Live chat has been particularly helpful to us and they can help a student while they are having the issue.

**SUPPORT FROM UKAT**

UKAT's Academic Technology Group (ATG) offers online tutorials and face-to-face training, as well as technicians who specialize in troubleshooting issues that arise for students.

- UKIT technicians can be reached by calling 859-218-HELP (4357), where the Customer Service Center can troubleshoot many issues immediately. You can also email [218help@uky.edu](mailto:218help@uky.edu). Complicated issues will be escalated to the technicians in ATG.
- Web: <http://www.uky.edu/UKAT/>

If you need one-on-one assistance, ATG can meet with you to discuss your needs and walk you through the steps. Call 257-8195 to request one-on-one time with one of our staff or student team.

**DISTANCE LEARNING PROGRAMS:** <http://www.uky.edu/ukonline/>

**OTHER UK TECHNOLOGY SUPPORT SERVICES**

Need help with recording your video assignments or uploading them to Canvas?

The Media Depot is a student digital media space located in the Hub at William T. Young Library. The Media Depot provides; access to recording equipment and space, editing stations with specialized multimedia software, and technical support for students' development of their academic media projects.

<http://www.uky.edu/ukat/mediadepot> **Phone Number: (859) 323-1105**

### **INSTRUCTOR COMMUNICATIONS**

Instructors have agreed to try to maintain the following communication standards:

- Faculty will check email at least daily Monday-Friday and respond as soon as possible but within 2 business days.
- If students have several questions about something or are confused, then they should call their faculty member. If the faculty member is not available, then a voicemail message should be left.
- There is a discussion board set up in Canvas where you may post questions and view answers to other students' questions. Faculty will check this board frequently.

### **LIBRARY RESOURCES**

Distance Learning Library Services

Web: <http://libraries.uky.edu/DLLS>

Carla Cantagallo, DL Librarian Phone: 859 257-0500, ext. 2171

Long distance phone number (800) 828-0439 (option #6)

Email: [carla@uky.edu](mailto:carla@uky.edu)

DL Interlibrary Loan Service: [http://libraries.uky.edu/page.php?lweb\\_id=253](http://libraries.uky.edu/page.php?lweb_id=253)

### **COURSE EVALUATION**

The University policy on faculty performance review requires that faculty obtain student evaluations of teaching for every course every semester. To meet this requirement, the College of Nursing uses web-based surveys on a confidential site for faculty and course evaluation. All students enrolled in this course are required to access the CoursEval website to fill out evaluations or to decline the opportunity within the designated time frame. Students should take this opportunity to provide serious input regarding faculty performance and course evaluation. These evaluations are used by the College of Nursing to improve the curriculum and enhance faculty teaching. Evaluations are completely anonymous. The information is compiled and shared with individual faculty members and appropriate administrators only after final grades are submitted. **To receive announcements about the evaluations, students must activate and use their UK email addresses. Forwarding UK email to an alternate address is not a viable option.**

**COURSE POLICIES AND PROFESSIONAL STANDARDS ATTENDANCE:****EXCUSED ABSENCES**

Students need to notify the professor of absences prior to class if possible. *Senate Rules 5.2.4.2* defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, (e) full-time job, (f) graduate school interview for graduating students, and (e) other circumstances found to fit “reasonable cause for nonattendance” by the professor.

Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Two weeks prior to the absence is reasonable, but should not be given any later. Information regarding major religious holidays may be obtained through the Ombud (859-257-3737, [http://www.uky.edu/Ombud/ForStudents\\_ExcusedAbsences.php](http://www.uky.edu/Ombud/ForStudents_ExcusedAbsences.php)).

Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed (excused) per University policy.

**MAKE-UP ASSIGNMENTS**

Per *Senate Rule 5.2.4.2*, students missing any graded work due to an excused absence are responsible: for informing the Instructor of Record about their excused absence within one week following the period of the excused absence (except where prior notification is required); and for making up the missed work. The professor must give the student an opportunity to make up the work and/or the exams missed due to an excused absence, and shall do so, if feasible, during the semester in which the absence occurred.

**VERIFICATION OF ABSENCES**

Students may be asked to verify their absences in order for them to be considered excused. *Senate Rule 5.2.4.2* states that faculty have the right to request “appropriate verification” when students claim an excused absence because of illness, or death in the family. Appropriate notification of absences due to University-related trips is required prior to the absence when feasible and in no case more than one week after the absence. beginning the practicum.

**ACADEMIC INTEGRITY**

Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website: <http://www.uky.edu/Ombud>. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Part II of *Student Rights and Responsibilities* (available online <http://www.uky.edu/StudentAffairs/Code/part2.html>) states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about the question of plagiarism involving their own work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows from another source without appropriate acknowledgement of the fact, the students are guilty of plagiarism. Plagiarism includes reproducing someone else's work. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be.

Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone.

**ACCOMODATIONS DUE TO DISABILITY**

*"If you have a documented disability that requires academic accommodations, please see me as soon as possible during virtual office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (DRC). The DRC coordinates campus disability services available to students with disabilities. It is located on the corner of Rose Street and Huguelet Drive in the Multidisciplinary Science Building, Suite 407. You can reach them via phone at (859) 257-2754 and via email at [drc@uky.edu](mailto:drc@uky.edu). Their web address is <http://www.uky.edu/StudentAffairs/DisabilityResourceCenter/>.*

## CE - 586 - Prestressed Concrete

### Major Course Change Form

#### Course Change

#### Turn on help text

To ensure that your course change proposal is launched correctly, please follow the steps below. Course change proposals that are not launched properly will be returned to the originator who will be asked to resubmit the proposal following the steps below.

[CLICK HERE FOR COMPLETE INSTRUCTIONS ON CREATING A COURSE CHANGE PROPOSAL.](#)

Turn on help text.

Click the import icon to import data from SAP. **THIS IS REQUIRED FOR ALL COURSE CHANGE PROPOSALS. DO NOT** change data that was imported from SAP.

Make sure all required fields have been completed. These fields are denoted with an (\*). **DO NOT** change data that was imported from SAP.

Launch the proposal by clicking the launch icon.

The proposal will return to the originators inbox under the 'My Tasks' tab.

At this time, you may make the proposed changes to the course change proposal.

Once you have made all of the changes click the launch button. *Please note, once you click the launch button on this step the proposal will move onto the next approval step in the workflow..*

\* denotes required fields

Current Prefix:* CE	Current Number:* 586
Proposed Prefix	Proposed Number
Check if same as current <input checked="" type="checkbox"/> Same as current	
Is this course clinical? Also select "Yes" if the course is not clinical but you wish for the course to be reviewed by the HCCC* <input type="radio"/> Yes <input checked="" type="radio"/> No	

#### 1. General Information

a. Submitted by the College of:* College of Engineering (8H000)	
b. Department/Division:* Civil Engineering (8H300)	
c. Is there a change in "ownership" of the course? * <input type="radio"/> Yes <input checked="" type="radio"/> No	
If YES, what college/department will offer the course instead?	
e. Contact Person Name:* Issam E. Harik	
Email:* Harik@uky.edu	Phone:* 859-257-3116
f. Requested Effective Date:* <input type="radio"/> Semester Following Approval <input checked="" type="radio"/> Specific Term	
If specific term: Spring 2020	

Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.

**What is the rationale for this proposal?\*** The course will be part of the Structural Engineering Certificate Program. It will be delivered via Distance learning in an online format through Canvas.

**2. Designation and Description of Proposed Course.**

**a. Distance Learning(DL) Status:\***

N/A  
 Already approved for DL\*  
 Please Add  
 Please Drop

**Already approved for DL**  \*If already approved for DL, the Distance Learning Form must also be submitted unless the department affirms (by checking this box ) that the proposed changes do not affect DL delivery.

The FULL title of the course needs to be written out in the first box and IF the title is more than 40 characters, THEN, the title needs to be shortened for the insertion on the transcript. The full title of the course is what is put in the bulletin and the second is what is inserted on the transcript.

**b. Current Title:\*** Prestressed Concrete

**Proposed Title\*** Prestressed Concrete

**c. Transcript Title (if full title is more than 40 characters):**

**d. Current Cross-listing:\***  N/A  Currently Cross-listed

**Currently Cross-listed with (Prefix & Number):**

**ADD Cross-listing (Prefix & Number):**

**REMOVE Cross-listing (Prefix & Number):**

Using the Files tab in the Proposal Toolbox, attach a letter of support from the chair of the cross-listing department.

e. Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours for each meeting pattern type.

Generally, undergrad courses are developed such that one semester hr of credit represents 1 hr of classroom meeting per wk for a semester, exclusive of any lab meeting. Lab meeting generally represents at least two hrs per wk for a semester for 1 credit hour. (See SR 5.2.1.)

For courses with variable credit, please use the following format (no spaces): #-##

**Lecture:** 3 hr

**Laboratory:**

**Clinical:**

**Colloquium:**

**Seminar:**

**Studio:**

**Recitation:**

**Residency:**

**Discussion:**

**Indep. Study:**

**Practicum:**

**Research:**

**Other:**

**f. Grading System:\***

Letter (A, B, C, etc.)  
 Pass/Fail

- Medicine Numeric Grade  
 Graduate Level Grade Scale

Please Explain:

g. Number of credit hours:\*

h. Is this course repeatable for additional credit?\*

Yes  No

If YES, Maximum number of credit hours:

If YES, Will this course allow multiple registrations during the same semester?

Yes  No

i. Course Description for Bulletin:\*

Fundamental basis and underlying principles for the analysis and design of Prestressed concrete. Working stress and ultimate strength design methods, full and partial prestressing. Design for shear and torsion, deflection, crack control, and long-term effects, and prestress losses. Composite beams, slabs, short and slender columns, precast structures and their connections.

j. Prerequisites, if any:

CE 486G, or CE 482, or CE 499, be registered in the College of Engineering, or consent of instructor.

3. Is this course taught off campus?

a.\*  Yes  No

If YES, enter the off campus address:

4. Are significant changes in content/ student learning outcomes of the course being proposed?

a.\*  Yes  No

If YES, explain and offer brief rationale:

5. Course Relationship to Program(s).

a. Are there other depts and/or pgms that could be affected by the proposed change?\*

Yes  No

If YES, identify the depts. and/or pgms:

b. Will modifying this course result in a new requirement for ANY program?\*

Yes  No

If YES, list the program(s) here:

In order to change a program, a program change form must also be submitted.

6. Information to be Placed on Syllabus.

a.  Check box if changed to 400G or 500.

If changed to 400G- or 500-level course you must send in a syllabus and you must include the differentiation between undergraduate and graduate students by: (i) requiring additional assignments by the graduate students; and/or (ii) establishing different grading criteria in the course for graduate students. (See SR 3.1.4.)

Distance Learning Form



This form must accompany every submission of a new/change course form that requests a change in delivery mode. All fields are required!

**Introduction/Definition:** For the purposes of the Commission on Colleges Southern Association of Colleges and Schools accreditation review, *distance learning* is defined as a formal educational process in which the majority of the instruction (interaction between students and instructors and among students) in a course occurs when students and instructors are not in the same place. Instruction may be synchronous or asynchronous. A distance learning (DL) course may employ correspondence study, or audio, video, or computer technologies.

A number of specific requirements are listed for DL courses. **The department proposing the change in delivery method is responsible for ensuring that the requirements below are satisfied at the individual course level.** It is the responsibility of the instructor to have read and understood the university-level assurances regarding an equivalent experience for students utilizing DL (available at <http://www.uky.edu/USC/New/forms.htm>).

<b>Instructor Name:</b> Issam E. Harik	<b>Instructor Email:</b> Harik@uky.edu
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Check the method below that best reflects how the majority of the course content will be delivered.

Internet/Web-based  
 Interactive Video  
 Hybrid

### Curriculum and Instruction

<b>1. How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations?</b>	Students and faculty will asynchronously engage at least weekly during online discussions, emails, and submittals. Students will interact asynchronously at least weekly in online discussions. The course syllabus conforms to University Guidelines for distance learning.
<b>2. How do you ensure that the experience for DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc.</b>	Students will view the same lectures as they would view if they were in a traditional classroom environment. They will complete the same homework and exams. They will be able to ask the instructor for help using Canvas, email, or phone.
<b>3. How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc.</b>	Students are allowed to work together on homework assignments, although each must submit individual work via Canvas, which is password protected. Exams will be proctored on campus or at testing centers.
<b>4. Are you adding distance learning delivery to this course as part of an effort to offer a complete degree program 100% online?</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No
<b>If yes, which program(s)?</b>	The students taking this course are graduate civil engineering students. They do not require access to the usual student services.
<b>5. How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting?</b>	Students have access to the instructor through Canvas, email, or phone calls, so they can ask questions. They will also have access to the UK libraries and Distance Librarian liason, Carla Cantagallo. Virtual office hours will also be provided for students to interact with the instructor as needed.

### Library and Learning Resources

<b>6. How do course</b>	No learning resources are needed outside those provided by the instructor.
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**requirements ensure that students make appropriate use of learning resources?** The course quizzes, homework assignments, and exams will ensure that the students make appropriate use of the learning resources.

**7. Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program.** No such resources are required. All required course material (lecture notes, relevant documents, etc.) will be provided free of charge by the instructor through Canvas.

### Student Services

**8. How are students informed of procedures for resolving technical complaint? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Canvas Support Hotline/Chat or ITS Service Desk?** Students will contact the instructor if they have difficulties. Also, the syllabus provides contact information for Distance Learning Library Services. Canvas and UK IT support information is available in Canvas. Students will be advised to call Canvas help hotline or live chat (available 24 hours/day) for issues related to course accessibility.

Canvas Support Hotline/Chat (<https://uk.instructure.com/>; Click Help Button for 24/7 service)

Information Technology Services (ITS) Service Desk (<http://www.uky.edu/UKIT/Help/>)

**9. Will the course be delivered via services available through Teaching and Academic Support Center?**  Yes  
 No

**If no, explain how students enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology.**

**10. Does the syllabus contain all the required components, below?**  Yes

Instructor's **virtual** office hours, if any.  
Technological requirements for the course.  
Procedure for resolving technical complaints.  
Preferred methods for reaching instructor, e.g. email, phone, or text message.  
Maximum timeframe for responding to student communications.  
Contact information for Information Technology Customer Service Center:

Web: <http://www.uky.edu/UKIT/>

Phone: 859-218-HELP

Web Address for Distance Learning services: <http://www.uky.edu/ukonline/>

Language pertaining academic accommodations (below):

*"If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. Please initiate the accommodation process by submitting an online Intake Form (found at <http://www.uky.edu/DisabilityResourceCenter/content/apply-services>) or by contacting the Disability Resource Center (DRC). The DRC coordinates campus disability services available to students with disabilities. DRC staff will discuss possible accommodations with you and provide you with a Letter of Accommodation. Once you receive your Letter of Accommodation, please set up an appointment to see me or stop by during scheduled office hours to discuss how your accommodation will be addressed. The DRC is located on the corner of Rose Street and Huguélet Drive in the Multidisciplinary Science Building, Suite 407. You can reach them via phone at (859) 257-2754 and via email at [drc@uky.edu](mailto:drc@uky.edu). Their web address is <http://www.uky.edu/StudentAffairs/DisabilityResourceCenter/>.*

Information on Distance Learning Library services

Carla Cantagallo, DL librarian  
Phone: (859) 218-1240  
Email: [carla@uky.edu](mailto:carla@uky.edu)  
Web: <http://libraries.uky.edu/DLLS>  
DL Interlibrary Loan Service: <http://libraries.uky.edu/dlls>

11. I, the instructor of record, have read and understood all of the university-level statements regarding DL.

**Instructor Name** Issam E. Harik

**Administration Use Only**

**OBJID**

UNIVERSITY OF KENTUCKY  
DEPARTMENT OF CIVIL ENGINEERING - COLLEGE OF NURSING

## Summer 2020

# CE 687: Advanced Steel Design

**A DISTANCE LEARNING COURSE**

**CREDIT HOURS:** 3 credit hours

**PREREQUISITES:** CE 587 and registered in the College of Engineering, or consent of instructor.

**COURSE DESCRIPTION:** Strength of structural steel columns, including asymmetry and slender compression elements. Flexural strength of slender plate girders. Shear strength with and without post-buckling strength. Frame stability. Steel connections. Floor vibration serviceability.

**STUDENT LEARNING OUTCOMES:**

1. Analyze and design steel compression members.
2. Analyze and design steel plate girders.
3. Evaluate steel-framed floors for vibrations due to human activities.
4. Analyze and design bracing connections.
5. Analyze and design shear connections.
6. Analyze and design moment connections.
7. Analyze and design moment-resisting base plates.
8. Evaluate frame stability by the Direct Analysis Method.

**COURSE GOALS OR OBJECTIVES:** Round-out the technical background of the students in the design of structural steel frames, members, and connections.

**COURSE FACULTY:** Brad DAVIS, Ph.D.

Phone: 859-257-4916

Email: [dbraddavis@uky.edu](mailto:dbraddavis@uky.edu) (preferred contact)

Virtual office hours: By appointment

**REQUIRED TEXT:**

1. AISC (2017), *Steel Construction Manual*, 15th ed., American Institute of Steel Construction, Chicago, IL.

2. Murray, T.M., Allen, D.E., Ungar, E.E., and Davis, D.B. (2016), *Vibrations of Steel-Framed Structural Systems Due to Human Activity*, Design Guide 11, American Institute of Steel Construction, Chicago, IL. (free pdf download)
3. Carter, C. (1999), *Stiffening of Wide-Flange Columns*, Design Guide 13, American Institute of Steel Construction, Chicago, IL. (free pdf download)
4. Fisher, J.M. and Kloiber, L.A. (2006), *Base Plate and Anchor Rod Design*, Design Guide 1, 2nd edition, 2nd printing, American Institute of Steel Construction, Chicago, IL. (free pdf download)
5. Griffis, L.G. and White, D.W. (2013), *Stability Design of Steel Buildings*, Design Guide 28, American Institute of Steel Construction, Chicago, IL. (free pdf download)

**REFERENCES:** AISC Manual; Specification; and Design Guides 1, 11, 13, and 28.

**CLASS MEETING TIMES:** This course will use an on line learning format. The course will be taught via a web-enhanced format and alternative and experiential learning assignments.

**Because no technology is ever completely fail-safe, we ask that students maintain back-up copies of all coursework.**

**COURSE CONTENT:** Course content will be divided into eight modules corresponding to the learning outcomes. Each module will be focused on each week. Each week students will be assigned reading assignments and activities related to module content.

### **COURSE ASSIGNMENTS:**

**Homework:** There will be 8-sets of homework during the semester.

### **SUBMISSION OF ASSIGNMENTS:**

- Homework must be submitted on Canvas by mid night on the due date.
- In cases of emergency which will prevent completion by the due date/time, please contact the faculty to request an extension PRIOR to the deadline, if possible.
- Assignments must be submitted on Canvas in pdf format.
- Each homework set must be submitted in a single pdf file that is legible after being scanned. It is recommended to use a dark pen or a pencil on white or Engineering paper.
- Homework and report assignments are due by midnight on the due date. Assignments turned in late, but within 24 hours following the due date and time, will be penalized by 20% . Assignments turned in after the 24-hour late window will not be graded.

### **QUIZES:**

- A quiz is assigned for each course module. Students should only click the link to the quiz after viewing each video.
- Quizzes are limited to 30 minutes. DO NOT click the link until you are ready to take the quiz.
- Quizzes must be submitted on Canvas before each Wednesday by midnight.
- The Quizzes will count 10% of the total course grade.

**TERM EXAMS:**

- 1- Exam 1:** Exam 1 is based on the material covered in modules 1, 2, and 3 for learning outcomes 1, 2 and 3.
- 2- Exam 2:** Exam 2 is based on the material covered in modules 4,5, and 6 for learning outcomes 4, 5 and 6.

**FINAL EXAM:** The final exam will be comprehensive.

**NOTES FOR EXAMS:**

- A photo ID is required for the exams.
- The mid-term exam and final exam are proctored exams and will be administered on the University of Kentucky campus. However, arrangements can be made to use various proctoring centers. In most instances, a proctoring fee will be incurred. It is the student's responsibility to notify the instructor within the first week of class and provide contact information for the off-campus proctoring service he or she intends to use.
- The exams are closed books and notes. Equations and other notes will be provided.
- The calculator must be on the list approved for the FE by the NCEES (e.g., HP 33s and HP 35s models, all FX-115 models, all TI-30X and TI-36X models).
- Use of a cell phone and any other electronic devices is not allowed.

**NOTES FOR MAKEUP WORK OR EXAMS:** Makeup work or exams will only be given with valid excuse. Refer to the "**EXCUSED ABSENCES**" section for details.

**EVALUATION:** Evaluation will be based on student achievement of the objectives and student learning outcomes as demonstrated by performance involving the course assignments and exams:

<b>Assignments/Exam</b>	<b>Overall Weight</b>
Homework	10%
Quizzes	10%
Exam 1	25%
Exam 2	25%
Final Exam	30%

**COURSE GRADING:** 90 - 100% = A  
 80 - 89% = B  
 70 - 79% = C  
 60 - 69% = D  
 < 59% = E

## DISTANCE LEARNING INFORMATION

### TEACHING/LEARNING METHODS

This course will be taught using a combination of methods. Students must be self-directed and demonstrate initiative to be successful in an online course. Course faculty are available for support and feedback. The course content/lectures and assignments will be available on Canvas. Students will utilize the internet to perform literature searches, participate in discussions, use email and connect with faculty and classmates through virtual technology in Canvas. Computer technology will enhance the learning process by allowing collaboration with peers and faculty. The course is interactive and participation will be required. All students are required to meet the computer and technology requirements listed below.

### COMPUTER ACCESS EXPECTATIONS

Students must meet assignment deadlines, but are not required to be online at specific, assigned times. This is an interactive course and we highly recommend accessing the course in Canvas at least three times per week to be fully engaged and successful. If for some reason, you cannot access the site at home due to temporary computer breakdown or other circumstances, it is your responsibility to access the site through other means (e.g., going to local public or school library). This course is heavy in reading and writing/communications requirements; plan time for interactions and completion of assignments. Technical support is available at: UK Information Technology Center <http://www.uky.edu/UKAT/> See the Tech Tips Link

### EMAIL REQUIREMENTS

Students are required to use their university email account to send and receive email. Only emails sent through the UK email system will be opened by faculty. Due to the risk of computer viruses, no unauthorized email accounts will be opened by faculty.

Any email sent to notify faculty of an impending absence from class or clinical, should include a “Request a Delivery Receipt” or “Request a Read Receipt” before hitting the send button. This feature is located in the “options” tab. *Please check your UK email at least every 48 hours.*

### WHAT DOES ONLINE LEARNING MEAN?

This means that the course materials will be available to you on the web and that you will turn assignments in on the web. This does not mean, however, that the course is not interactive. For example, you may participate in on-line discussions with other class members and faculty as needed using virtual meeting technology available through Canvas. **Because no technology is ever completely fail-safe, we ask that students maintain back-up copies of all coursework.**

### COMPUTER REQUIREMENTS

This web-enhanced course requires the following: (1) a computer with high speed access to the internet (Ethernet, broadband cable or DSL connection) and an internet browser.

**MINIMUM REQUIRED LAPTOP COMPUTER HARDWARE**

- Processor: Dual Core 1.8 Ghz or higher
- RAM: 4 GB minimum (more preferred)
- Hard Drive: 250 GB or larger preferred (minimum 100 GB or larger)
- Wireless card: 802.11n preferred (minimum 802.11 b/g compatible)
- Operating system: Most recent version for your hardware (for example, Mac OS 10.10+ or Windows 8+)
- Up-to-date virus software, preferably installed before coming to campus
- Webcam (many laptops come with an integrated webcam and will not require an external device)
- Headphones or headset with microphone
- *Other helpful options:* 2 GB or higher USB Flash Drive, external hard drive (for data backup/extra storage), wired or wireless external mouse, video out adapters (dvi/hdmi), and a laptop security cable

**MINIMUM REQUIRED TABLET COMPUTER HARDWARE**

- Processor: Dual Core 1.3 Ghz or higher | Apple A5 or higher
- Storage capacity: 32 GB or larger
- Operating system: Most recent version for your hardware (for example, Windows 8.1, Windows RT, iOS 8)

Because tablets have less storage than laptops, tablet users with high-speed Internet connectivity can use UK's virtual desktop and application solution ([www.uky.edu/VirtualDEN](http://www.uky.edu/VirtualDEN)) to expand the number of applications available to them. See further below in this document about the software this service provides. Also, many tablets have HDMI or USB ports for connecting external monitors, keyboards, mouse, headset, and other devices.

**SOFTWARE**

Visit <https://download.uky.edu/> to learn about software available free of charge or at a reduced rate. If you do not have Microsoft Office 2007 or later then please download Microsoft Office 2007, which is available free to all university students from <http://e5.onthehub.com/WebStore/Welcome.aspx?ws=f43536c5-bbb4-dd11-b00d-0030485a6b08&vsro=8&JSEnabled=1>

Contact the University of Kentucky Instructional Technology Customer Service Center (257-1300) for download instructions.

It is important to have a basic understanding of how to use the World Wide Web (web) as well as Microsoft Office products (Word, PowerPoint, Excel, and Exchange). If you need assistance, help is available in The Hub, located in the basement of W.T. Young Library. For more information, visit <http://www.uky.edu/Libraries/hub>. In addition, students should be able to use



the internet to access the Medical Center and other UK Libraries, search library data bases, and obtain literature necessary for class work and assignments.

### **STUDENT SUPPORT**

**If you have problems with Canvas:** Following are the resources available to help you if you are having problems or technical challenges/conflicts when using Canvas. There is 24/7 support through the help tab inside Canvas. If the problems you are having affects completion or submission of an assignment, please email the instructor explaining the problem and the steps you are taking/have taken to correct the problem.

### **CANVAS SUPPORT**

- Please use the Canvas help hotline 844-480-0838 for issues with Canvas or the HELP menu in the Canvas application.
- There are TUTORIALS in Canvas that may be helpful in resolving some issues.
- Canvas Issues: The help button provides links to guides and videos, the hotline number and a link to live chat. Live chat has been particularly helpful to us and they can help a student while they are having the issue.

### **SUPPORT FROM UKAT**

UKAT's Academic Technology Group (ATG) offers online tutorials and face-to-face training, as well as technicians who specialize in troubleshooting issues that arise for students.

- UKIT technicians can be reached by calling 859-218-HELP (4357), where the Customer Service Center can troubleshoot many issues immediately. You can also email [218help@uky.edu](mailto:218help@uky.edu). Complicated issues will be escalated to the technicians in ATG.
- Web: <http://www.uky.edu/UKAT/>

If you need one-on-one assistance, ATG can meet with you to discuss your needs and walk you through the steps. Call 257-8195 to request one-on-one time with one of our staff or student team.

**DISTANCE LEARNING PROGRAMS:** <http://www.uky.edu/ukonline/>

### **OTHER UK TECHNOLOGY SUPPORT SERVICES**

Need help with recording your video assignments or uploading them to Canvas?

The Media Depot is a student digital media space located in the Hub at William T. Young Library. The Media Depot provides; access to recording equipment and space, editing stations with specialized multimedia software, and technical support for students' development of their academic media projects.

<http://www.uky.edu/ukat/mediadepot> **Phone Number: (859) 323-1105**

### **INSTRUCTOR COMMUNICATIONS**

Instructors have agreed to try to maintain the following communication standards:

- Faculty will check email at least daily Monday-Friday and respond as soon as possible but within 2 business days.
- If students have several questions about something or are confused, then they should call their faculty member. If the faculty member is not available, then a voicemail message should be left.
- There is a discussion board set up in Canvas where you may post questions and view answers to other students' questions. Faculty will check this board frequently.

### **LIBRARY RESOURCES**

Distance Learning Library Services

Web: <http://libraries.uky.edu/DLLS>

Carla Cantagallo, DL Librarian Phone: 859 257-0500, ext. 2171

Long distance phone number (800) 828-0439 (option #6)

Email: [carla@uky.edu](mailto:carla@uky.edu)

DL Interlibrary Loan Service: [http://libraries.uky.edu/page.php?lweb\\_id=253](http://libraries.uky.edu/page.php?lweb_id=253)

### **COURSE EVALUATION**

The University policy on faculty performance review requires that faculty obtain student evaluations of teaching for every course every semester. To meet this requirement, the College of Nursing uses web-based surveys on a confidential site for faculty and course evaluation. All students enrolled in this course are required to access the CoursEval website to fill out evaluations or to decline the opportunity within the designated time frame. Students should take this opportunity to provide serious input regarding faculty performance and course evaluation. These evaluations are used by the College of Nursing to improve the curriculum and enhance faculty teaching. Evaluations are completely anonymous. The information is compiled and shared with individual faculty members and appropriate administrators only after final grades are submitted. **To receive announcements about the evaluations, students must activate and use their UK email addresses. Forwarding UK email to an alternate address is not a viable option.**

## **COURSE POLICIES AND PROFESSIONAL STANDARDS ATTENDANCE:**

### **EXCUSED ABSENCES**

Students need to notify the professor of absences prior to class if possible. *Senate Rules 5.2.4.2* defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, (e) full-time job, (f) graduate school interview for graduating students, and (e) other circumstances found to fit “reasonable cause for nonattendance” by the professor.

Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Two weeks prior to the absence is reasonable, but should not be given any later. Information regarding major religious holidays may be obtained through the Ombud (859-257-3737, [http://www.uky.edu/Ombud/ForStudents\\_ExcusedAbsences.php](http://www.uky.edu/Ombud/ForStudents_ExcusedAbsences.php)).

Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed (excused) per University policy.

### **MAKE-UP ASSIGNMENTS**

Per *Senate Rule 5.2.4.2*, students missing any graded work due to an excused absence are responsible: for informing the Instructor of Record about their excused absence within one week following the period of the excused absence (except where prior notification is required); and for making up the missed work. The professor must give the student an opportunity to make up the work and/or the exams missed due to an excused absence, and shall do so, if feasible, during the semester in which the absence occurred.

### **VERIFICATION OF ABSENCES**

Students may be asked to verify their absences in order for them to be considered excused. *Senate Rule 5.2.4.2* states that faculty have the right to request “appropriate verification” when students claim an excused absence because of illness, or death in the family. Appropriate notification of absences due to University-related trips is required prior to the absence when feasible and in no case more than one week after the absence, beginning the practicum.

### **ACADEMIC INTEGRITY**

Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website: <http://www.uky.edu/Ombud>. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Part II of *Student Rights and Responsibilities* (available online <http://www.uky.edu/StudentAffairs/Code/part2.html>) states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about the question of plagiarism involving their own work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows from another source without appropriate acknowledgement of the fact, the students are guilty of plagiarism. Plagiarism includes reproducing someone else's work. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be.

Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone.

### **ACCOMODATIONS DUE TO DISABILITY**

*"If you have a documented disability that requires academic accommodations, please see me as soon as possible during virtual office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (DRC). The DRC coordinates campus disability services available to students with disabilities. It is located on the corner of Rose Street and Huguelet Drive in the Multidisciplinary Science Building, Suite 407. You can reach them via phone at (859) 257-2754 and via email at [drc@uky.edu](mailto:drc@uky.edu). Their web address is <http://www.uky.edu/StudentAffairs/DisabilityResourceCenter/>.*

# CE - 687 - Advanced Steel Design

## Major Course Change Form

### Course Change

#### Turn on help text

To ensure that your course change proposal is launched correctly, please follow the steps below. Course change proposals that are not launched properly will be returned to the originator who will be asked to resubmit the proposal following the steps below.

[CLICK HERE FOR COMPLETE INSTRUCTIONS ON CREATING A COURSE CHANGE PROPOSAL.](#)

Turn on help text.

Click the import icon to import data from SAP. **THIS IS REQUIRED FOR ALL COURSE CHANGE PROPOSALS. DO NOT** change data that was imported from SAP.

Make sure all required fields have been completed. These fields are denoted with an (\*). **DO NOT** change data that was imported from SAP.

Launch the proposal by clicking the launch icon.

The proposal will return to the originators inbox under the 'My Tasks' tab.

At this time, you may make the proposed changes to the course change proposal.

Once you have made all of the changes click the launch button. *Please note, once you click the launch button on this step the proposal will move onto the next approval step in the workflow..*

\* denotes required fields

Current Prefix: \*

CE

Current Number: \* 687

Proposed Prefix

Proposed Number

Check if same as current  Same as current

Is this course clinical? Also select "Yes" if the course is not clinical but you wish for the course to be

Yes

No

reviewd by the  
HCCC\*

## 1. General Information

a. Submitted by  
the College of: \* College of Engineering (8H000)

b. Department/  
Division: \* Civil Engineering (8H300)

c. Is there a  
change in  
"ownership" of  
the course? \*  Yes  No

If YES, what  
college/  
department will  
offer the course  
instead?

e. Contact Person  
Name: \* Douglas B. Davis

Email: \* dbraddavis@uky.edu

Phone: \* 859-257-4916

f. Requested  
Effective Date: \*  Semester Following Approval  Specific Term

If specific term:

Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.

What is the  
rationale for this  
proposal? \* It will be part of the Structural Engineering Certificate Program, so it needs to be available in an online format.

## 2. Designation and Description of Proposed Course.

a. Distance  
Learning(DL)  
Status: \*  N/A  
 Already approved for DL\*  
 Please Add  
 Please Drop

Already approved  
for DL  \*If already approved for DL, the Distance Learning Form must also be submitted unless the department affirms (by checking this box ) that the proposed changes do not affect DL delivery.

The FULL title of the course needs to be written out in the first box and IF the title is more than 40 characters, THEN, the title needs to be shortened for the insertion on the transcript. The full title of the course is what is put in the bulletin and the second is what is inserted on the transcript.

**b. Current Title:**\* Advanced Steel Design

**Proposed Title**\* Advanced Steel Design

**c. Transcript Title**  
(if full title is  
more than 40  
characters):

**d. Current Cross-**  
**listing:**\*  N/A  Currently Cross-listed

**Currently Cross-**  
**listed with (Prefix**  
**& Number):**

**ADD Cross-listing**  
**(Prefix &**  
**Number):**

**REMOVE Cross-**  
**listing (Prefix &**  
**Number):**

Using the Files tab in the Proposal Toolbox, attach a letter of support from the chair of the cross-listing department.

**e. Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours for each meeting pattern type.**

Generally, undergrad courses are developed such that one semester hr of credit represents 1 hr of classroom meeting per wk for a semester, exclusive of any lab meeting. Lab meeting generally represents at least two hrs per wk for a semester for 1 credit hour. (See SR 5.2.1.)

For courses with variable credit, please use the following format (no spaces): #-##

**Lecture:** 3 hr

**Laboratory:**

**Clinical:**

**Colloquium:**

**Seminar:**

**Studio:**

**Recitation:**

**Residency:**

**Discussion:**

**Indep. Study:**

**Practicum:**

**Research:**

**Other:**

- f. Grading System:\***
- Letter (A, B, C, etc.)
  - Pass/Fail
  - Medicine Numeric Grade
  - Graduate Level Grade Scale

**Please Explain:**

**g. Number of credit hours:\*** 3

**h. Is this course repeatable for additional credit?\***

Yes  No

**If YES, Maximum number of credit hours:**

**If YES, Will this course allow multiple registrations during the same semester?**

Yes  No

**i. Course Description for Bulletin:\*** Strength of structural steel columns, including asymmetry and slender compression elements. Flexural strength of slender plate girders. Shear strength with and without post-buckling strength. Frame stability. Steel connections. Floor vibration serviceability.

**j. Prerequisites, if any:** CE 587 and registered in the College of Engineering, or consent of instructor.

**3. Is this course taught off campus?**

**a.\***  Yes  No

**If YES, enter the off campus address:**



#### 4. Are significant changes in content/ student learning outcomes of the course being proposed?

a.\*  Yes  No

**If YES, explain  
and offer brief  
rationale:**

#### 5. Course Relationship to Program(s).

a. Are there other  
depts and/or  
pgms that could  
be affected by the  
proposed change?  
\*

Yes  No

**If YES, identify  
the depts. and/or  
pgms:**

b. Will modifying  
this course result  
in a new  
requirement for  
ANY program?\*

Yes  No

**If YES, list the  
program(s) here:**

In order to change a program, a program change form must also be submitted.

#### 6. Information to be Placed on Syllabus.

a.  Check box if changed to 400G or 500.

If changed to 400G- or 500-level course you must send in a syllabus and you must include the differentiation between undergraduate and graduate students by: (i) requiring additional assignments by the graduate students; and/or (ii) establishing different grading criteria in the course for graduate students. (See SR 3.1.4.)

### Distance Learning Form

This form must accompany every submission of a new/change course form that requests a change in delivery mode. All fields are required!

**Introduction/Definition:** For the purposes of the Commission on Colleges Southern Association of Colleges and Schools accreditation review, *distance learning* is defined as a formal educational process in which the majority of the instruction (interaction between students and instructors and among students) in a course occurs when students and instructors are not in the same place. Instruction may be synchronous or asynchronous. A distance learning (DL) course may employ correspondence study, or audio, video, or computer technologies.

A number of specific requirements are listed for DL courses. **The *department* proposing the change in delivery method is responsible for ensuring that the requirements below are satisfied at the individual course level.** It is the responsibility of the instructor to have read and understood the university-level assurances regarding an equivalent experience for students utilizing DL (available at <http://www.uky.edu/USC/New/forms.htm>).

**Instructor Name:** D.B. Davis

**Instructor Email:** dbraddavis@uky.edu

Check the method below that best reflects how the majority of the course content will be delivered.

Internet/Web-based

Interactive Video

Hybrid

## **Curriculum and Instruction**

**1. How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations?**

Students and faculty will asynchronously engage at least weekly during online discussions, emails, and submittals. Students will interact asynchronously at least weekly in online discussions. The course syllabus conforms to University Guidelines for distance learning.

**2. How do you ensure that the experience for DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc.**

Students will view the same lectures as they would view if they were in a traditional classroom environment. They will complete the same homework and exams. They will be able to ask the instructor for help using Canvas, email, or phone.

**3. How is the integrity of student work ensured? Please speak to aspects such as password-protected course**

Students are allowed to work together on homework assignments, although each must submit individual work via Canvas, which is password protected. Exams will be proctored on campus or at testing centers.

portals, proctors for exams at interactive video sites; academic offense policy; etc.

4. Are you adding distance learning delivery to this course as part of an effort to offer a complete degree program 100% online?  Yes  No

If yes, which program(s)?

5. How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting?

Students have access to the instructor through Canvas, email, or phone calls, so they can ask questions. They will also have access to the UK libraries and Distance Librarian liason, Carla Cantagallo. Virtual office hours will also be provided for students to interact with the instructor as needed.

## Library and Learning Resources

6. How do course requirements ensure that students make appropriate use of learning resources?

No learning resources are needed outside those provided by the instructor. The course quizzes, homework assignments, and exams will ensure that the students make appropriate use of the learning resources.

7. Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program.

No such resources are required. All required materials (lecture notes, relevant documents, etc.) will be provided by the instructor through Canvas.

## Student Services

8. How are students informed of procedures for resolving technical complaint? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Canvas Support

Students will contact the instructor if they have difficulties. Also, the syllabus provides contact information for Distance Learning Library Services. Canvas and UK IT support information is available in Canvas. Students will be advised to call Canvas help hotline or live chat (available 24 hours/day) for issues related to course accessibility.

Hotline/Chat or  
ITS Service Desk?

Canvas Support Hotline/Chat (<https://uk.instructure.com/>; Click Help Button for 24/7 service)

Information Technology Services (ITS) Service Desk (<http://www.uky.edu/UKIT/Help/>)

9. Will the course be delivered via services available through Teaching and Academic Support Center?  Yes  No

If no, explain how students enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology.

10. Does the syllabus contain all the required components, below?  Yes

Instructor's **virtual** office hours, if any.

Technological requirements for the course.

Procedure for resolving technical complaints.

Preferred methods for reaching instructor, e.g. email, phone, or text message.

Maximum timeframe for responding to student communications.

Contact information for Information Technology Customer Service Center:

Web: <http://www.uky.edu/UKIT/>

Phone: 859-218-HELP

Web Address for Distance Learning services: <http://www.uky.edu/ukonline/>

Language pertaining academic accommodations (below):

*“If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. Please initiate the accommodation process by submitting an online Intake Form (found at <http://www.uky.edu/DisabilityResourceCenter/content/apply-services>) or by contacting the Disability Resource Center (DRC). The DRC coordinates campus disability services available to students with disabilities. DRC staff will discuss possible accommodations with you and provide you with a Letter of Accommodation. Once you receive your Letter of Accommodation, please set up an appointment to see me or stop*

*by during scheduled office hours to discuss how your accommodation will be addressed. The DRC is located on the corner of Rose Street and Huguelet Drive in the Multidisciplinary Science Building, Suite 407. You can reach them via phone at (859) 257-2754 and via email at [drc@uky.edu](mailto:drc@uky.edu). Their web address is <http://www.uky.edu/StudentAffairs/DisabilityResourceCenter/>.*

#### Information on Distance Learning Library services

Carla Cantagallo, DL librarian

Phone: (859) 218-1240

Email: [carla@uky.edu](mailto:carla@uky.edu)

Web: <http://libraries.uky.edu/DLLS>

DL Interlibrary Loan Service: <http://libraries.uky.edu/dlls>

11. I, the instructor of record, have read and understood all of the university-level statements regarding DL.

**Instructor Name** Douglas B. Davis

#### Administration Use Only

**OBJID**