FLORIDA ATLANTIC UNIVERSITY

COURSE CHANGE REQUEST
Undergraduate Programs

Department CEGE

College CoE&CS

UUPC Approval _____
UFS Approval _____
SCNS Submittal _____
Confirmed _____
Banner Posted _____
Catalog _____

***Current* Course Prefix and Number**	CES4711	***Current* Course Title**	Prestressed Concrete Design

*Syllabus must be attached for **ANY** changes to current course details. See Checklist. Please consult and list departments that may be affected by the changes; attach documentation.*

Change title to:

Change prefix

From: **To:**

Change course number

From: **To:**

Change credits*

From: **To:**

Change grading

From: **To:**

Change WAC/Gordon Rule status**

Add ☐ **Remove** ☐

Change General Education Requirements***

Add ☐ **Remove** ☐

*Review Provost Memorandum

**WAC/Gordon Rule criteria must be indicated in syllabus and approval attached to this form. See WAC Guidelines.

***General Education criteria must be indicated in syllabus and approval attached to this form. See GE Guidelines.

Change description to:

Change prerequisites/minimum grades to:

Replace CES3102C with CES4702 with minimum grade of "C"

Change corequisites to:

No change

Change registration controls to:

Please list existing and new pre/corequisites, specify AND or OR and include minimum passing grade (default is D-).

Effective Term/Year for Changes:	Spring 2021	**Terminate course? Effective Term/Year for Termination:**	

Faculty Contact/Email/Phone M. Arockiasamy/arockias@fau.edu/7-3434

Approved by	***Date***
Department Chair DM for Yan Yong	3-25-20
College Curriculum Chair Daniel E. Meeroff	3-27-20
College Dean Fred Bloetscher (via email confirmation)	3-27-20
UUPC Chair Jerry Haky (via email confirmation)	3-30-20
Undergraduate Studies Dean Edward Pratt (via email confirmation)	3-31-20
UFS President _____	_____
Provost _____	_____

Email this form and syllabus to mjenning@fau.edu seven business days before the UUPC meeting.

1. **Course title/number, number of credit hours**

CES4711-Prestressed Concrete Design 3 credit hours

2. **Course prerequisites, corequisites, and where the course fits in the program of study**

Prerequisites: CES4702-Reinforced Concrete Design with mínimum grade of "C"

3. **Course logistics**

Term: Spring 2019

Class location and time: W 7:10 PM- 10:00 PM (Lecture) CM 128

Exams will be given only at the scheduled times and places. No make-ups, except in documented emergencies.

4. Instructor contact information

Instructor's name	Dr. Madasamy Arockiasamy, P.E, P.Eng., Fellow ASCE, Professor of Civil Engineering
Office address	Engineering West (EG-36) Bldg., Room 215
Office Hours	M & Tue. 4:00-6:50 PM
Contact telephone number	561-297-3434
Email address	arockias@fau.edu

5. TA contact information

None

6. Course Description

Behavior of prestressed concrete structural elements, analysis, and design of pre-tensioned and post-tensioned concrete structural members; design for flexure and shear. Anchorage zone design. Partial prestressing, serviceability and structural efficiency of beams, slabs

7. Course objectives/student learning outcomes/program outcomes

Course Objectives	A. Introduce students to the fundamentals of prestressed concrete design B. Interrelate the analysis and design aspects of prestressed concrete C. Establish students' understanding of the theory underlying design aids for prestressed concrete beams, slabs D. Develop students' ability for the analysis of prestressed concrete members and systems.

<table>
<tr><td>Student learning outcomes

& relationship to ABET a-k objectives</td><td colspan="2">1. Ability to understand the basic principles governing the design of prestressed concrete (a, c, e, f, k).

2. Ability to interrelate analysis and design for members of the total structural system (a,b, e, f, k)

3. Ability to develop an understanding for the internal strain distributions in structural prestressed concrete elements and basic understanding of the reserve strength and load factors (a,b, e, f, k)

4. Ability to develop a systematic approach for development of prestressed concrete structural systems from conception to turnkey use (a,b, e, f, k)

5. Ability to bridge the gap between the class room and actual design practice through the use of ACI 318 Building Code and exposure to open-ended problems. (a,b, e, f, k)</td></tr>
<tr><td rowspan="4">Relationship to program educational objectives</td><td>Objective A: Practice civil engineering within the general areas of structural engineering, transportation engineering, geotechnical engineering, and water resources/environmental engineering in the organizations that employ them.</td><td>H</td></tr>
<tr><td>Objective B: Advance their knowledge of civil engineering, both formally and informally, by engaging in lifelong learning experiences including attainment of professional licensure, and/or graduate studies.</td><td>H</td></tr>
<tr><td>Objective C: Serve as effective professionals, based on strong interpersonal and teamwork skills, an understanding of professional and ethical responsibility, and a willingness to take the initiative and seek progressive responsibilities.</td><td>H</td></tr>
<tr><td>Objective D: Participate as leaders in activities that support service to, and/or economic development of, the region, the state and the nation.</td><td>H</td></tr>
<tr><td colspan="3">8. Course evaluation method</td></tr>
<tr><td colspan="2">Homework assignments, class participation & attendance 20%
Midterm examination 35%
Final Examination 45%</td><td>Note: The minimum grade required to pass the course is C.</td></tr>
<tr><td colspan="3">9. Course grading scale</td></tr>
<tr><td colspan="3">There is not any fixed criteria for the grading scale. The overall performance as related to course objectives and outcomes is evaluated and considered during grading.</td></tr>
</table>

10. Policy on makeup tests, late work, and incompletes

Normally no make-up quizzes or examinations are given except in case of a medical or otherwise serious emergency that prevented the student from participating in the exam. Makeup exam would be administered and proctored by department personnel unless there are other pre-approved arrangements. *Late submission of work* is not acceptable. *Incomplete grades* are against the policy of the department. Unless there is solid evidence of medical or otherwise serious emergency situation incomplete grades will not be given.

11. Special course requirements

None

12. Classroom etiquette policy

University policy requires that in order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular phones and laptops, are to be disabled in class sessions.

13. Disability policy statement

In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS)—in Boca Raton, SU 133 (561-297-3880); in Davie, LA 131 (954-236-1222); or in Jupiter, SR 110 (561-799-8585) —and follow all SAS procedures.

14. Honor code policy

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the university mission to provide a high quality education in which no student enjoys unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and place high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. See University Regulation 4.001 at http://www.fau.edu/regulations/chapter4/4.001_Code_of_Academic_Integrity.pdf

15. Required texts/reading

Text book: i) Prestressed Concrete – A Fundamental Approach, 5th Edition by E.G.Nawy, Pearson, Prentice Hall

ii) ACI Building Code Requirements for Structural Concrete (ACI 318R-2014)

16.Course topical outline, including dates for exams/quizzes, papers, completion of reading

Date (Week of)	Topic
Jan.8	Introduction to Prestressed concrete
Jan.15	M.L.King Jr. Holiday
Jan.17	Prestressing systems and technology
Jan.22	Prestressing Materials

Jan.29	Partial prestress losses
Feb. 5	Service load design and end blocks at support anchorages
Feb.12	Flexural design of composite beams
Feb. 19	Load and strength factors and ultimate strength flexural design
March 1	**Mid-term Exam**
March 5-11	Spring Break
March 13	Shear strength design: web reinforcement design
March 20	Camber
March 27	Deflection
April 3	Crack control
April 10	Short-term deflection at service load
April 17	Long-term effects on deflection and camber
April 24	Two-way prestressed concrete floor systems REVIEW
May 3	**FINAL EXAMINATION: 7:00 P.M.- 9:30 P.M.**