

 FLORIDA ATLANTIC UNIVERSITY	NEW COURSE PROPOSAL Graduate Programs		UGPC Approval _____ UFS Approval _____ SCNS Submittal _____ Confirmed _____ Banner Posted _____ Catalog _____
	Department Civil, Environmental and Geomatics Engineering College of Engineering <i>(To obtain a course number, contact erudolph@fau.edu)</i>		
Prefix CES Number 5715	<i>(L = Lab Course; C = Combined Lecture/Lab; add if appropriate)</i> Lab Code	Course Title Prestressed Concrete Design	
Credits <i>(Review Provost Memorandum)</i> 3	Grading <i>(Select One Option)</i> Regular <input checked="" type="radio"/> Sat/UnSat <input type="radio"/>	Course Description <i>(Syllabus must be attached; see Guidelines)</i> Behavior, analysis and design of pre-tensioned and post-tensioned concrete structures. Flexural shear, bond and anchorage design. Partial prestressing strength, serviceability and structural efficiency of beams and slabs	
Effective Date <i>(TERM & YEAR)</i> Spring 2018		Prerequisites CES 4702 Reinforced concrete design	Corequisites none
		Registration Controls <i>(Major, College, Level)</i> senior or graduate level	
Prerequisites, Corequisites and Registration Controls are enforced for all sections of course			
Minimum qualifications needed to teach course: Member of the FAU graduate faculty and has a terminal degree in the subject area (or a closely related field.)		List textbook information in syllabus or here information provided by instructor on line	
Faculty Contact/Email/Phone Madasamy Arockiasamy arockias@fau.edu		List/Attach comments from departments affected by new course	

Approved by Department Chair <input checked="" type="checkbox"/> _____ College Curriculum Chair _____ College Dean <input checked="" type="checkbox"/> _____ UGPC Chair _____ Graduate College Dean _____ UFS President _____ Provost _____	Date 2/6/17 2/2/17 2/6/17 _____ _____ _____
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Email this form and syllabus to UGPC@fau.edu one week before the UGPC meeting.

1. Course title/number, number of credit hours		
Prestressed Concrete - CES-5715 3 credit hours		
2. Course prerequisites, corequisites, and where the course fits in the program of study		
Prerequisites: CES 4702 Reinforced Concrete Design		
3. Course logistics		
Term: Spring 2018 This is an on-line course Class location and time: M 4:00- 6:50 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. Professor	
Office address	Engineering West (EG-36) Bldg., Room 206	
Office Hours	4:00-6:50 PM to be prearranged by the students for group discussions, if and when necessary during the semester	
Contact telephone number	561-297-3434	
Email address	arockias@fau.edu	
5. TA contact information		
None		
6. Course Description Behavior, analysis, and design of pretensioned and post-tensioned concrete structures. Flexural , shear, bond, and anchorage zone design.Partial prestressing strength, serviceability and structural efficiency of beams, slabs		
7. Course objectives/student learning outcomes/program outcomes		
Course Objectives	A. Introduce students to the fundamentals of pre-stressed concrete design B. Interrelate the analysis and design aspects of pre-stressed concrete C. Establish students' understanding of the theory underlying design aids for pre-stressed concrete beams, slabs D. Develop the students' ability for the analysis of pre-stressed concrete members and systems.	
Student learning outcomes & relationship to ABET a-k objectives	1. Ability to understand the basic principles governing the design of pre-stressed 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 pre-stressed 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 pre-stressed 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)	
Relationship to program outcomes	Outcome 1: An understanding of professional and ethical responsibility.	High
	Outcome 2: A working knowledge of fundamentals, engineering tools, and experimental methodologies.	High
	Outcome 3: An understanding of the social, economic, and political contexts in which engineers must function.	Low

	Outcome 4: An ability to plan and execute an engineering design to meet an identified need.	High
	Outcome 5: An ability to function on multi-disciplinary teams.	Medium
	Outcome 6: An ability to communicate effectively.	Medium
	Outcome 7: Graduates will have proficiency in the following areas of civil engineering: i) structural engineering, (ii) transportation engineering, iii) geotechnical engineering	High
	Outcome 8: Graduates will have an adequate appreciation for the role of civil engineering in infrastructure planning and sustainability including safety, risk assessment, and hazard mitigation.	Medium
	Outcome 9: Graduates will be successful in finding professional employment and/or pursuing further academic studies.	High
8. Course evaluation method		
Homework assignments and class participation	15%	Note: The minimum grade required to pass the course is C.
Midterm examinations	30%	
Final Examination	40%	
Term Project	15%	
9. Course grading scale		
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.		
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. <i>Late submission of work</i> is not acceptable. <i>Incomplete grades</i> 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		
This is a writing intensive course and will fulfill the writing across the curriculum (WAC) requirements for 2000-4000 level courses. The goal of integrating writing in this course is to improve students' ability to produce professional quality engineering reports. For more information, contact the University Center for Excellence in Writing at 561-297-3498 or www.fau.edu/UCEW .		
12. Classroom etiquette policy		
<ol style="list-style-type: none"> 1. Cell phones and beepers should have the ringers turned off as a courtesy to the instructor and your fellow classmates. 2. You are expected to complete the assigned reading prior to the date indicated on the class schedule, to do all homework assignments, and to participate fully in the group projects. 3. Assignments are due at the beginning of class on the date indicated on the assignment sheet. <u>Late assignments are not accepted</u>. Assignments turned in early will receive extra credit. 4. 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 203 (954-236-1222); or in Jupiter, SR 110 (561-799-8585)—and follow all SAS procedures.

14. Honor code policy

Consultation with your classmates on assignments is expected and encouraged; however what you turn in must be your own work. Representing the work of others as your own is unethical and may result in sanctions (see the FAU Policy on Academic Honesty). FAU is committed to a policy of honesty in academic affairs. The instructor's duty is to pursue any reasonable allegation, taking action where appropriate, as described in the appropriate section of the FAU Catalog (<http://www.fau.edu/ug-cat/academic.htm#irregular>) and the Florida Administrative Code. Please be advised that the copying of material from the world wide web or any other written material is considered plagiarism and is also a breach of the Honor Code.

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.

Florida Atlantic University

Regulation 4.001 Code of Academic Integrity

(1) Purpose. Students at Florida Atlantic University are expected to maintain the highest ethical standards. 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 an unfair advantage over any other. Dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility.

(2) Definitions. The FAU Code of Academic Integrity prohibits dishonesty and requires a faculty member, student, or staff member to notify an instructor when there is reason to believe dishonesty has occurred in a course/program requirement. The instructor must pursue any reasonable allegation, taking action where appropriate. Examples of academic dishonesty include, but are not limited to, the following:

(A) Cheating

1. The unauthorized use of notes, books, electronic devices, or other study aids while taking an examination or working on an assignment.
2. Providing unauthorized assistance to or receiving assistance from another student during an examination or while working on an assignment.
3. Having someone take an exam or complete an assignment in one's place.
4. Securing an exam, receiving an unauthorized copy of an exam, or sharing a copy of an exam.

(B) Plagiarism

1. The presentation of words from any other source or another person as one's own without proper quotation and citation.
2. Putting someone else's ideas or facts into your own words (paraphrasing) without proper citation.

3. Turning in someone else's work as one's own, including the buying and selling of term papers or assignments.

(C) Other Forms of Dishonesty

1. Falsifying or inventing information, data, or citations.

2. Failing to comply with examination regulations or failing to obey the instructions of an examination proctor.

3. Submitting the same paper or assignment, or part thereof, in more than one class without the written consent of both instructors.

4. Any other form of academic cheating, plagiarism, or dishonesty.

(3) Procedures.

(A) If the instructor determines that there is sufficient evidence to believe that a student engaged in dishonesty, the instructor will meet with the student at the earliest possible opportunity and provide notice to the student of the instructor's perception of the facts, the charges against the student, and the sanction. The instructor may not remove the student from the course until the appeal process has come to a conclusion.

(B) If, after this meeting, the instructor continues to believe that the student engaged in dishonesty, the instructor will provide the student written notice of the charges and the penalty. A copy of this statement shall be sent to the chair of the department or director of the school/program administering the course.

(C) The student is entitled to an opportunity to be heard at a meeting with the instructor and chair/director to review and discuss the instructor's charges/statement. Such request for a meeting must be made in writing and received by the chair/director within five (5) business days of receipt of the instructor's charges/statement. The purpose of the meeting is to discuss the facts and to advise the student of the appeal process. The chair/director will provide the student, the instructor, and the dean of the college administering the course a summary of both the student's position and the instructor's position.

(D) The student may appeal in writing to the dean of the college administering the course. The appeal must be received by the dean within five (5) business days of receipt of the chair/director's summary from the review meeting. The dean will convene a Faculty-Student Council ("Council"), which will be composed of the dean (or designee), two faculty members, and two students. The dean (or designee) will act as chair of the Council, direct the hearing, and maintain the minutes and all records of the appeal hearing, which will not be transcribed or recorded. The hearing is an educational activity subject to student privacy laws/regulations, and the strict rules of evidence do not apply. The student may choose to be accompanied by a single advisor, but only the student may speak on her/his own behalf. The student and instructor may present testimony and documents on his/her behalf. Additional witnesses may be permitted to speak at the dean's (or designee's) discretion and only if relevant and helpful to the Council. The Council will deliberate and make a recommendation to the dean to affirm or void the instructor's findings of academic dishonesty. The dean (or designee) will inform the student and instructor in writing of his/her findings of academic dishonesty after receipt of the Council's recommendation.

(E) The student may request an appeal in writing of the dean's findings of academic dishonesty to the University Provost (or designee) and include relevant documentation in support of such appeal. The University Provost (or designee) will notify the student, dean, and instructor of his/her decision in writing. This decision by the Provost (or designee) constitutes final University action.

(F) If there is a finding that the Code of Academic Integrity has been violated, the chair will notify the University Registrar that the following notation be included on both the student's official transcript and on the student's internal record: "Violation of Code of Academic Integrity, University Regulations 4.001." If such violation is appealed and overturned, the dean or University Provost (or their designees) will notify the University

Registrar that such notation should be removed from the student's transcript and internal record.

(4) Penalties.

(A) The instructor will determine the penalty to be administered to the student in the course. Penalty grades cannot be removed by drop, withdrawal, or forgiveness policy. Students should be aware that, in some Colleges/programs, failure in a course or a finding of dishonesty may result in other penalties, including expulsion or suspension from the College/program.

(B) In the case of a first offense, the student may elect to complete a peer counseling program administered by the Division of Student Affairs by the end of the semester following the semester in which the dishonesty occurred. Upon successful completion of this program, the notation regarding violation of the Code of Academic Integrity will be expunged from the student's official transcript. The grade, however, will remain unchanged and cannot be removed by drop or forgiveness policy. Also, the notation will remain in internal University student records.

(C) In the case of a repeat offense, even if the notation of violation of the Code of Academic Integrity from the first offense had been expunged from the official transcript as a result of successful completion of the peer counseling program, the student will be expelled from the University.

Specific Authority: Article IX of the Florida Constitution, 1001.706, 1001.74 F.S., Board of Governors Regulations 1.001, 6.010, and 6.0105. History–New 10-1-75, Amended 12-17-78, 3-28-84, Formerly 6C5-4.01, Amended 11-11-87. Formerly 6C5-4.001. Amended 5-26-10

15. Required texts/reading

1. None.

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

Date (Week of)	Topic
Jan.9	Introduction to Prestressed concrete
Jan.16	M.L.King Jr. Holiday
Jan.17	Prestressing systems and technology
Jan.23	Prestressing Materials
Jan.30	Partial prestress losses
Feb. 6	Service load design and end blocks at support anchorages
Feb.13	Flexural design of composite beams
Feb. 20	Load and strength factors and ultimate strength flexural design
Feb. 27	Mid-term Exam
March 5-11	Spring Break
March 12	Shear strength design: web reinforcement design
March 19	Torsion in prestressed concrete elements
March 26	Indeterminate prestressed concrete structures
April 2	Linear transformation and concordance of tendons

April 9	Camber, deflection and crack control
April 16	Short-term deflection at service load and long-term effects on deflection and camber
April 23	Two-way prestressed concrete floor systems REVIEW
April 26	FINAL EXAMINATION: 4:00 P.M.- 6:30 P.M.