

David Garber

Record Title - Do Not Delete : David Garber

Linked Preliminary Proposal - Do Not Delete : David Garber

Please share an overview of activities during the previous academic year. : The PCI Foundation Studio at Florida International University (FIU) started in January 2020. This was the second full year (Fall 2021 to Spring 2022) for the studio. Some of the activities from 2021-2022 are summarized below:

- Notes, presentations, and assessments were reviewed and revised, and some additional materials developed for “Precast Concrete Design” (CGN 4930/5930). A total of 633 pages of typed notes and 962 slides were created by the professor for this course. The professor worked with several different people from industry and academia during the development of the notes and course materials. Weekly assignments, two projects, and a unique final exam structure was used to assess student learning. The course was offered for the second time as a cross-listed (both undergraduate and graduate students) course in Fall 2021. The course had 16 graduate students and 2 undergraduate students during the Fall 2021 semester. Students completed a fully precast building design and precast bridge design for two class projects.
- The PCI Design Handbook (8th Edition) was provided to all 18 students in CGN 4930/5930. These handbooks were provided by the Florida Prestressed Concrete Association (<https://www.myfpca.org/>).
- Four guest speakers presented virtually in CGN 4930/5930. The company and topic on which the speaker presented are also listed.
 - o Chuck Magnesio (JVI, Inc., from Massachusetts, connections in buildings)
 - o Michael Trosset and Rob Pavel (Gate Precast Company, from Orlando, FL, building case studies)
 - o Carter El-Fityani (Sarens, from Toronto, Canada, heavy lifting in bridge construction)
 - o Mike Culmo (CHA Consulting, Inc., from Connecticut, bridge case studies and accelerated bridge construction)
- A PCI Foundation Studio collaboration meeting was held on January 7th, 2022, at FIU with faculty members from FIU, Sacramento State, and New Jersey Institute of Technology.
- Prestressed Concrete Design was modified to be offered as an Online LIVE modality for Spring 2022. An Online LIVE course is fully online, hybrid course with both asynchronous and synchronous learning experiences. A total of 46 videos from 734 slides were created for asynchronous lecture materials. The videos created for this course were uploaded to YouTube® and have over 95,077 views (as of 4/11/22). A total of 543 pages of typed notes created for this course were modified to meet modern accessibility requirements.
- All created videos are uploaded on the PI’s YouTube® channel (<https://www.youtube.com/channel/UCIL0NyWPPAqrikLb6hJMA8Q>). The PI currently has over 10,300 subscribers (as of 4/11/22).
- Seven guest speakers presented virtually in CES 4711/5715. The company and topic on which the speaker presented are also listed below.
 - o Luis Compres (Coreslab Structures (Miami), Inc., from Miami, precast buildings)
 - o Roy Eriksson and Jeremy Castello (Eriksson Software, from Tampa, software used in prestressed/precast concrete design and analysis)
 - o Glen Switzer (Durastress, from Leesburg, FL, precast bridges)
 - o Lloyd Kennedy (Finrock, Orlando, FL, prestressed building construction)
 - o Jon Cornelius (Sumiden Wire, from Tennessee, stainless steel strands and advanced materials in prestressed concrete)
 - o John Corven (Corven Engineering, from Tallahassee, FL, post-tensioned segmental box girders)
 - o Rafic El-Helou (FHWA, from Washington, D.C., ultra-high performance concrete material and design)
- The PCI Big Beam Competition was used as the final project in CES 4711/5715. The student teams (consisting of both undergraduate and graduate students) presented their designs to a panel of industry judges during a three-hour virtual design competition. The panel of judges consisted of the following people from industry:
 - o Ryan Cartwright (Standard Concrete)
 - o Chris Pfeil (Pfeil Design, LLC)
 - o Chris Ray (CEG-FL)
 - o Diep Tu (FPCA)
 - o Luis Compres (Coreslab Structure (Miami), Inc.)
 - o Juan Gonzalez (Kimley-Horn)Two winning groups were selected by the judges. These groups are planned to be constructed by Coreslab Structures (Miami), Inc. and tested at FIU’s Titan America Structures Laboratory in early-June.
- The advisory committee for this studio includes the following members. The annual meeting will be scheduled in May or June 2022.
 - o Luis Compres, Coreslab Structures (Miami), Inc.
 - o Diep Tu, FPCA
 - o Adel El-Safty, University of North Florida
 - o Glen Switzer, Dura-Stress

o Thomas Frank, FDOT State Materials Office o Ryan Cartwright, Standard Concrete Products • A website was created in Spring 2020 (<https://concrete.fiu.edu/>) to host the PCI Foundation Studio webpage (<https://concrete.fiu.edu/teaching/pci-design-studio/>) and other activities by the PI. This website has been maintained during the last year and updated with new activities and materials. • Two students traveled to the 2022 PCI Convention and participated in the PCI Foundation Project Precast competition. Additional details on some of these activities are provided in the report that is attached under the community partners file section.

Can you give a few examples of students learning outcomes? : The course objectives for the two courses included in the studio are: Prestressed Concrete Design: By the end of the course, students will be able to conservatively and efficiently design prestressed concrete members Precast Concrete Design: Conservatively and efficiently design the basic components of fully precast concrete buildings and bridges (elements and connections between elements).

Please upload photos of students engaged in projects, tours, or other activities. : 2022-02-14
11.32.12.jpg

Please share a link to any student work you would like to share. : Some samples of student work are provided in the final report. It seems like only one photo can be uploaded in the above option.

Can you share any opportunities that working with your local partner helped the students achieve something that would otherwise have not been possible? : Many guest speakers were invited to class, panel of industry judges for design competition. Partnering with Coreslab for plant tour and big beam construction. More details are provided in the attached report.

Is there anything you learned this year that you would like to share with other professors? :

Is there anything that the PCI Foundation can do in the future to be of greater service to you during the grant? :

Please upload a list of any community partners, precast partners and other people who worked with your students during the year. Include their names and company. : FIU-PCI Studio 2021-2022
Report_v1.pdf

Did you attend the PCI Convention? : Yes

Did you attend the PCI Committee Days? : Yes

Did you attend the PCI Foundation Professors Seminar? : No

Do you have a student assessment of your program that you can share? :

student assessment upload :

Is there anything else you would like to add? :

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