



**FLORIDA INTERNATIONAL UNIVERSITY
UNIVERSITY CURRICULUM COMMITTEE**
Proposal for a Course Change

DO NOT TYPE IN THIS BOX	
Bulletin #:	_____
Academic Year:	_____

PART I. FILL OUT THIS SECTION COMPLETELY

- School/College Engineering and Computing
Div./Dept. in Which Taught Electrical and Computer Engineering
- | | | | |
|--------------|-----------|---------------|------------------------|
| CNT | <u>4</u> | <u>155</u> | <u>3</u> |
| Alpha Prefix | 1st Digit | Last 3 Digits | "C"-lec-lab
"L"-Lab |
| | | | Cr. Hrs. |
- Present Course Title IoT & Sensor Programming with Python

PART II. FILL OUT CHANGE INFORMATION ONLY

Change Effective 1 / 1 / 2020

- New Course Title _____
- New Abbreviated course Title (for computer class schedules, transcripts)
LIMITED TO 25 Characters (including spaces)

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|---|-----------------|-------------------|-------------------------------|-----------------|------------------|---------------|-------------------|-------------------------------|--|
| <ol style="list-style-type: none"> <table border="0"> <tr> <td><u> </u></td> <td><u> </u></td> <td><u> </u></td> <td><u> </u></td> </tr> <tr> <td>New Alpha Prefix</td> <td>New 1st Digit</td> <td>New Last 3 Digits</td> <td>Change "C"-lec-lab
"L"-Lab</td> </tr> </table> | <u> </u> | <u> </u> | <u> </u> | <u> </u> | New Alpha Prefix | New 1st Digit | New Last 3 Digits | Change "C"-lec-lab
"L"-Lab | <ol style="list-style-type: none"> Change Credit Hours: From _____ To _____ |
| <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | |
| New Alpha Prefix | New 1st Digit | New Last 3 Digits | Change "C"-lec-lab
"L"-Lab | | | | | | |

- New Catalog Description/Major Topics (not to exceed 200 characters including spaces)
College of Medicine and College of Law: Attach description not exceeding 1,000 characters including spaces.

- New Prerequisite(s): EEL 2880 or equivalent or instructor permission
- New Corequisite(s): _____

- Explain Reclassification Request:

The course only requires as a prerequisite EEL 2880. Added equivalent or instructor permission to allow other students apart from ECE students to take the course.

10. Does this proposed change impact the assessment process of a program or certificate? **If yes, then send notification to assessment@fiu.edu.**

PROPOSAL REQUESTED BY:

Faculty Contact	<u>Dr. Alexander Perez-Pons</u>		<u>10</u> / <u>10</u> / 20 <u>19</u>
	(Type name)	(Signature)	
	<u>aperezpo@fiu.edu</u>	<u>305-348-7253</u>	
	(Email address)	(Phone number)	
Chairperson (Dept./Div.)	<u>Dr. Shekhar Bhansali</u>		<u>10</u> / <u>10</u> / 20 <u>19</u>
	(Type name)	(Signature)	
Chairperson (Curr. Comm.)	<u>Dr. Wei-Chiang Lin</u>	_____	_____ / _____ / 20____
	(Type name)	(Signature)	
College/School Dean	<u>Dr. John Volakis</u>	_____	_____ / _____ / 20____
	(Type name)	(Signature)	

Submit one original form. Attach one copy of the Course Justification and Course Syllabus: Course Description, Objectives, Learning Outcomes, Major Topics and textbooks.

Department of Electrical and Computer Engineering
CNT 4155 IoT & Sensor Programming with Python

Catalog Data: This course will introduce students to the Python programming language as it applies to its interaction to sensor and IoT devices. The Python language is prominent within the IoT area for its reach libraries and easy of programming to develop sensor applications. The examples and assignments in this course will focus on the Python application development at the hardware-level for IoT devices.

Prerequisites: **EEL 2880 or equivalent or instructor permission**

Corequisites: **None**

Textbooks **Kenneth A. Lambert, The Fundamentals of Python: First Programs, 2011, Cengage Learning, ISBN: 978-1111822705.**

Type: Elective for All BS students

Course Objectives: The course is designed to provide essential knowledge of Internet of Things and Python Programming. The student will develop a working knowledge of Python to interact with various IoT and Sensor devices. The student is exposed to the challenges of programming these devices with the Python language, one of the leading programming languages in the IoT area. The student will work with sensors and IoT device at the hardware level to program and extended their functionality.

Course Learning Outcomes:

At the end of this course, the students will be able to:

- Understand fundamentals of Sensor and IoT (Raspberry PI, Arduino, etc.)
- Apply Python language to configure and program IoT devices
- Learn Python syntax and style
- Apply the rich Python data types to solve edge computing
- Apply Python Object Oriented programming model for developing IoT solutions
- Develop both CLI and GUI python application
- Evaluate and apply a Python IDE for program development
- Learn and apply wxPython for building GUI based applications

Topics Covered:

- Introduction to Sensor & IoT Devices
- Python Syntax and programming paradigm
- Apply modules and packaging to code development
- Object-oriented development in Python

University policies: on sexual harassment, and religious holidays, and information on services for students with disabilities

<http://academic.fiu.edu/>

<http://drc.fiu.edu>

Policies:

- **Academic Misconduct:** For work submitted, it is expected that each student will submit their own original work. Any evidence of duplication, cheating or plagiarism will result at least a failing grade for the course.
- **Unexcused Absences:** Two unexcused absences are permitted during the term. More than two will result in the loss of points from your final grade. (**1 point** per absence above two, **3 points** per absence above 5).
- **Excused Absences:** Only emergency medical situations or extenuating circumstances are excused with proper documentation. After reviewing documentation you are **required to email** a description of the excuse and absence dates as a written record to apons@fiu.edu.
- **On Time:** As in the workplace, on time arrival and preparation are required. Two "lates" are equivalent to one absence. (Leaving class early is counted the same as tardy.)
- **Deadlines:** Assignments are due at the beginning of the class period on the date specified. Assignments submitted late (within 1 week) will receive **half credit**.
- **DO NOT** send assignments by email.
- Instructor reserves right to change course materials or dates as necessary.

The prerequisite of the course have been re-evaluated and modified accordingly to reflect the background expectation required for student success. The prerequisite modification will provide a greater opportunity for students to enroll in the courses, since adequate background information is now covered in the course.