DO NOT TYPE IN THIS BOX

Bulletin #: _____

Academic Year: _____

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

## PART I. FILL OUT THIS SECTION COMPLETELY

1. **School/College** Engineering and Computing

   **Div./Dept. in Which Taught** Electrical and Computer Engineering

2. | CNT | 4 | 151 | | 3 |
   |---|---|---|---|---|
   | Alpha Prefix | 1st Digit | Last 3 Digits | "C"-lec-lab "L"-Lab | Cr. Hrs. |

3. **Present Course Title** IoT & Sensor Data Visualization

## PART II. FILL OUT CHANGE INFORMATION ONLY

**Change Effective** 1 / 1 / 2020

4a. **New Course Title** _____

b. **New Abbreviated course Title** *(for computer class schedules, transcripts)* IoT/Sensor Data Visual

LIMITED TO 25 Characters *(including spaces)*

5a.

| | | | |
|---|---|---|---|
| New Alpha Prefix | New 1st Digit | New Last 3 Digits | Change "C"-lec-lab "L"-Lab |
| | | | |

**5b. Change Credit Hours: From** _____ **To** _____

6. **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.*

7. **New Prerequisite(s):** None

8. **New Corequisite(s):** _____

9. **Explain Reclassification Request:**

   The course has been structured in a manner that prerequisite are not required, as the course provides all of the required knowledge for students to comprehend the course concepts.

10. **Does this proposed change impact the assessment process of a program or certificate?**

**PROPOSAL REQUESTED BY:**

**Faculty Contact** Dr. Alexander Perez-Pons (Type name) _____ (Signature) 10 / 10 / 2019

aperezpo@fiu.edu (Email address) 305-348-7253 (Phone number)

**Chairperson (Dept./Div.)** Dr. Shekhar Bhansali (Type name) _____ (Signature) 10 / 10 / 2019

**Chairperson (Curr. Comm.)** Dr. Wei-Chiang Lin (Type name) _____ (Signature) ____ / ____ / 20____

**College/School Dean** Dr. John Volakis (Type name) _____ (Signature) ____ / ____ / 20____

Submit one original form.

Department of Electrical and Computer Engineering

**CNT 4151 IoT & Sensor Data Visualization**

**Catalog Data:** This course will focus on visualization framework and libraries to get insight from sensor and IoT Data. Student will learn about various visualization techniques available on premise and cloud.

**Prerequisites:** **None**

**Corequisites:** **None**

**Textbooks** **Data Visualization: A Successful Design Process, Andy Kirk, ISBN13: 9781849693462**

**Type:** Elective for All BS students

**Course Objectives:**

This course will focus on premise and cloud visualization libraries for sensor and IoT Data. Students will learn about various charting techniques, dashboard development, visualization focused on large sensor and IoT datasets processed using cloud and client- server architecture, visualization component development using commercial and open source framework - Power BI ,Matplotlib, Tableau etc., various data sources and data connectors , report development and export to various formats. Various case studies will be provided to assist students in establishing real-world scenarios for IoT data storage, ingestion and visualization.

**Course Learning Outcomes:**

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

- Understand fundamentals of Data Visualization framework
- Knowledge of various data ingestion techniques for IoT
- Understand IoT data structures and formats
- Compare different visualization tools in client server and web environment applied to Sensor and IoT data
- Learn client and web interface for different tools & libraries like Power BI, Tableau, Matplotlib etc. applied to IoT dataset
- Learn to connect to various data sources
- Develop dashboards and reports using Power BI or Tableau with IoT and sensor datasets.
- Learn connecting to SQL Azure, HD Spark, and SQL Server Analysis Services on Azure Cloud
- Display analytics results and reporting with IoT data visualization tools

4. Must see the Instructor. All missed work must be finished before last two weeks of the following term.

**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.