



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

DO NOT TYPE IN THIS BOX

Bulletin #: 2

Academic Year: 2021-22

PART I. FILL OUT THIS SECTION COMPLETELY

1. School/College Engineering and Computing

Div./Dept. in Which Taught _____

2. CIS 1 940 0
 Alpha 1st Last 3 "C"-lec-lab Cr. Hrs.
 Prefix Digit Digits "L"-Lab

3. Present Course Title Internship Teaching Computer Science

PART II. FILL OUT CHANGE INFORMATION ONLY

Change Effective ____ / ____ / 20__

4a. New Course Title _____

b. New Abbreviated course Title (for computer class schedules, transcripts)

LIMITED TO 25 Characters (including spaces)

5a.

_____	_____	_____	_____
New	New	New	Change
Alpha	1st	Last 3	"C"-lec-lab
Prefix	Digit	Digits	"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.

Internship for teaching computational thinking to students in K-12, following established curriculum such as Google CS First, Code.org, and MIT Media Lab's Scratch. May be repeated.

7. New Prerequisite(s): None

8. New Corequisite(s): None

9. Explain Reclassification Request:
This course may be repeated as often as the student wishes to participate in an internship teaching computational thinking. This detail was omitted in the initial course proposal.

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 Maria Cristina Charters

(Type name)

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M.C. Charters

(Signature)

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(Phone number)

09 / 09 / 2021

Chairperson (Dept./Div.) Jason Liu

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Chairperson (Curr. Comm.) Elias Alwan

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College/School Dean John Volakis

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Anthony McGoron
Digitally signed by Anthony McGoron
 Date: 2021.10.25 15:09:43 -0400

(Signature)

9 / 14 / 2021

10 / 25 / 2021

 / / 20

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

JUSTIFICATION

The course, CIS1940, is the 0-credit Internship for Teaching CS, which was approved and put into our schedule for the first time this Spring 2021. Since it is an internship that students can participate in multiple times, I would like to add "May be repeated" to the course description, in order to allow that.

Knight Foundation School of Computing and Information Sciences

Course Title: Internship for Teaching Computational Thinking in K-12 **Date:** 2/4/2020

Course Number: CIS 1940

Number of Credits: 0

Subject Area: Programming	Subject Area Coordinator: Janki Bhimani email: jbhimani@fiu.edu
Catalog Description: Internship for teaching computational thinking to students in K-12, following established CS curriculum such as Google CS First, Code.org, and MIT Media Lab's Scratch. May be repeated.	
Textbook: Online Curriculum https://studio.code.org https://scratch.mit.edu https://csfirst.withgoogle.com/s/en/home	
References: Wing, J. 2006. Computational Thinking. CACM. 15, 5 (March 2006), 33-35	
Prerequisites Courses: None	
Corequisite Courses: None	

Type: Internship

Prerequisite Topics: None

Course Outcomes:

- O1. Be able to follow plan lessons in computational thinking appropriate for the age-level and the prior knowledge of a K-12 student.
- O2. Be able to teach how to plan a new program by breaking it down into smaller pieces, using storyboards, flowcharts, and pseudo code.
- O3. Be able to teach how to use a programming tool such as MIT's Scratch or Code.org's app creation, to develop games and animations.
- O4. Be able to provide feedback to K-12 students as they apply computational thinking skills.

This course should be overseen by FIU faculty that have experience in teaching computational thinking in programming classes.

Knight Foundation School of Computing and Information Sciences
CIS 1940

Internship for Teaching Computational Thinking in K-12

Outline

Topic	Number of Lecture Hours	Outcome
<ul style="list-style-type: none"> ● Follow plan lessons in computational thinking appropriate for the age-level and the prior knowledge of a K-12 student <ul style="list-style-type: none"> ○ Identify the various K-12 curriculum which exist ○ Select the most appropriate curriculum for the target group of K-12 student ○ Become familiar with the various lessons per level of student. 	5	O1
<ul style="list-style-type: none"> ● Teach how to plan a new program by breaking it down into smaller pieces <ul style="list-style-type: none"> ○ Explain what the purpose of a storyboard and how it is used to plan an animation. ○ Explain what pseudo code is and give basic examples of how to use it. ○ Explain how to create a flowchart, and explain how you would create it. 	5	O2
<ul style="list-style-type: none"> ● Teach how to use a programming tool targeted for K-12 children. <ul style="list-style-type: none"> ○ Select Google CS First, MIT Scratch, or Code.org <ul style="list-style-type: none"> ▪ Teach how to open, save, and test code ▪ Following curriculum, teach progressively harder programs. 	15	O3
<ul style="list-style-type: none"> ● Provide feedback to K-12 students as they learn computational thinking skills. <ul style="list-style-type: none"> ○ Provide positive reinforcement to each student ○ Help students identify their logic, syntax, and runtime errors. ○ Help students to “debug” their code ○ Help students correct errors in code ○ Motivate students to keep learning 	10	O4

University students who register for this course will learn how to:

- Follow lesson plans for specific grade levels
- Teach how to breakdown a programming problem into smaller pieces
- Demonstrate how to design a program using pseudo code, storyboards, or flowcharts of the program’s logic
- Explain how to write a program using CS tools targeted for children
- Monitor and give feedback to K-12 students as they practice computational thinking skills

Knight Foundation School of Computing and Information Sciences
CIS 1940

Internship for Teaching Computational Thinking in K-12

An internship in teaching computational thinking in K-12 will provide students with the following outcomes.

Outcome	
O1	Students will be able to follow lesson plans in computational thinking appropriate for the age-level and the prior knowledge of a K-12 student
O2	Students will learn how to teach breaking down a problem into smaller pieces
O3	Students will learn how to teach a programming tool targeted for K-12 children.
O4	Students will learn how to provide feedback to K-12 students as they learn computational thinking skills.

Oral and Written Communication:

- Written and oral discussions of how to teach computational thinking

Theoretical Contents:

- Abstraction
- Basic algorithmic thinking

Problem Analysis Experiences:

None

Solution Design Experiences:

- Weekly teaching internships, following lessons, programming with various CS tools

Assessment Plan for the Course & how Data in the Course are used to assess Program Outcomes

Student and Instructor Course Outcome Surveys are administered at the conclusion of each offering, and are evaluated as described in the School's Assessment Plan:
<https://abet.cs.fiu.edu/csassessment/>