DO NOT TYPE IN THIS BOX

Bulletin #: 3

Academic Year: 2019-20

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 School of Computing and Information Sciences

2.

COP	4	813		3
Alpha Prefix	1st Digit	Last 3 Digits	"C"-lec-lab "L"-Lab	Cr. Hrs.

3. **Present Course Title** Web Application Programming

PART II. FILL OUT CHANGE INFORMATION ONLY

Change Effective 8 / 24 / 20 20

4a. **New Course Title** _____

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

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):** CGS 4854

8. **New Corequisite(s):** None

9. **Explain Reclassification Request:**

Since contents of this course no longer require Visual Basic skills, students can enroll in this course without taking COP 4005. Hence, this course change will improve the graduation rate.

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 Nagarajan Prabakar (Type name) — (Signature) — 11 / 25 / 20 19

prabakar@cis.fiu.edu (Email address) — 305-348-2033 (Phone number)

Chairperson (Dept./Div.) S.S. Iyengar (Type name) — (Signature) — 11 / 25 / 20 19

Chairperson (Curr. Comm.) Wei-Chiang Lin (Type name) — (Signature) — 11 / 27 / 20 19

College/School Dean John Volakis (Type name) — (Signature) — 12 / 10 / 20 19

Submit one original form. Attach one copy of the course justification and course syllabus: course description, objectives, learning outcomes, major topics and textbooks.

COP-4813 Web Application Programming

Course Change Justification

Fifteen years back, when COP-4813 was created, Visual Basic programming was a requirement for this course and the prerequisite included COP-4005.

After the introduction of .NET framework, this course no longer requires Visual Basic skills. Students can enroll in COP-4813 without taking COP 4005. Hence, this prerequisite change for COP-4813 will improve the graduation rate.

School of Computing and Information Sciences

Course Title: Web Application Programming **Date:** November 22, 2019

Course Number: COP 4813

Number of Credits: 3

Subject Area: Application Development **Subject Area Coordinator: Kip Irvine**
email: irvinek@cs.fiu.edu

Catalog Description: Programming of server-side Web applications with databases, state management, security, error handling, and Web services.

Textbook: Beginning ASP.NET 3.5, Imar Spaanjars, Wiley Publishing, Indianapolis, 2008.

References:

Prerequisites Courses: CGS 4854

Corequisites Courses: None

Type: Elective (IT Application Development concentration)

Prerequisites Topics:

- Master classes and objects in multitier applications
- Master structured exception handling and interactive error trapping
- Be familiar with data-bound controls and database application programming interface
- Master client server communication
- Be familiar with use of CSS 1 style sheets

Course Outcomes:

1. Master creating Web applications
2. Master interfacing Web applications with multiuser databases
3. Master commonly used Web server controls
4. Be familiar with error handling and input validation in Web applications
5. Master maintaining state in Web applications.
6. Be exposed to creating and consuming Web services
7. Be exposed to client-side scripting languages
8. Be familiar with user authentication and authorization techniques
9. Be exposed to Web-based reports

School of Computing and Information Sciences
COP 4813
Web Application Programming

Outline

Topic	Number of Lecture Hours	Outcome
• Introduction to Web-based application architecture o Concepts o Client-server model o Page state o Multi-tier design	3	1
• Web server controls o Text and buttons o List-oriented o Template-based	9	1, 3
• Designing Web interfaces o Design principles o Layout techniques o Cascading style sheets o XHTML basics	6	3
• Error Handling and Input Validation o Guidelines and principles o Web validation controls	3	4
• Client-side programming o Scripting languages	3	7
• User authentication and authorization o Principles o Server controls o Role-based authorization	3	8
• Maintaining State o Page state o Session state o Persistent cookies	3	5
• Reading and updating databases o Data-bound controls o Database objects API o Data components	6	2
• Web services o Creating o Consuming	2	6
• Web reports	1	9

School of Computing and Information Sciences
COP 4813
Web Application Programming

Course Outcomes Emphasized in Laboratory Projects / Assignments

Outcome	Number of Weeks
1. Creating Web applications with user controls, input validation, and maintaining state. Outcomes: 1,3, 4, 5	4
2. Web applications with databases, Web services, client-side scripting, user authentication and authorization Outcomes: 1, 2	5
3. Web services Outcomes: 6	1
4. Web applications with client-side scripting, user authentication and authorization Outcomes: 7, 8	3
5. Web applications with reports. Outcome: 9	1

School of Computing and Information Sciences
COP 4813
Web Application Programming

The Coverage of Knowledge Units within IEEE/ACM Computing Curricula Guidelines[1]

Knowledge Unit	Topic	Lecture Hours
PF5	Event-driven programming	4
NC4	The web as an example of client-server computing	2
NC5	Building web applications	12
NC1	Introduction to net-centric computing	1
HC2	Building a simple graphical user interface	2
HC5	Graphical user-interface design	6
HC6	Graphical user-interface programming	8
IM5	Database query languages	3
IM7	Transaction processing	1
SE9	Component-based computing	2
SE1	Software design	2
SE2	Using APIs	3

[1]See https://www.acm.org/binaries/content/assets/education/cs2013_web_final.pdf for a description of Computer Science Knowledge units