Request for Graduate Course Addition

1. Prepare one paper copy with all signatures and supporting material and forward to the Graduate Council Chair.
2. E-mail one identical PDF copy to the Graduate Council Chair. If attachments included, please merge into a single file.
3. **The Graduate Council cannot process this application until it has received both the PDF copy and the signed hard copy.**

College: _____ Dept/Division: _____ Alpha Designator/Number: _____ ○ Graded ○ CR/NC

Contact Person: _____ Phone: _____

NEW COURSE DATA:

New Course Title: _____

Alpha Designator/Number: _____

Title Abbreviation: _____

(Limit of 25 characters and spaces)

Course Catalog Description:
(Limit of 30 words)

Co-requisite(s): _____ First Term to be Offered: _____

Prerequisite(s): _____ Credit Hours: _____

Course(s) being deleted in place of this addition (*must submit course deletion form*): _____

Signatures: if disapproved at any level, do not sign. Return to previous signer with recommendation attached.

Dept. Chair/Division Head _____ Date _____

Registrar _____ Date _____

College Curriculum Chair _____ Date _____

Graduate Council Chair _____ Date _____

College: _____   Department/Division: _____   Alpha Designator/Number: _____

Provide complete information regarding the new course addition for each topic listed below. Before routing this form, a complete syllabus also must be attached addressing the items listed on the first page of this form.

1. FACULTY: Identify by name the faculty in your department/division who may teach this course.

2. DUPLICATION: If a question of possible duplication occurs, attach a copy of the correspondence sent to the appropriate department(s) describing the proposal. Enter "**_Not Applicable_**" if not applicable.

3. REQUIRED COURSE: If this course will be required by another deparment(s), identify it/them by name. Enter "**_Not Applicable_**" if not applicable.

4. AGREEMENTS: If there are any agreements required to provide clinical experiences, attach the details and the signed agreement. Enter "**_Not Applicable_**" if not applicable.

5. ADDITIONAL RESOURCE REQUIREMENTS: If your department requires additional faculty, equipment, or specialized materials to teach this course, attach an estimate of the time and money required to secure these items. (Note: Approval of this form does not imply approval for additional resources.) Enter "**_Not Applicable_**" if not applicable:

6. COURSE OBJECTIVES: (May be submitted as a separate document)

7. COURSE OUTLINE   (May be submitted as a separate document)

8. SAMPLE TEXT(S) WITH AUTHOR(S) AND PUBLICATION DATES (May be submitted as a separate document)

9. EXAMPLE OF INSTRUCTIONAL METHODS (Lecture, lab, internship)

10. EXAMPLE EVALUATION METHODS (CHAPTER, MIDTERM, FINAL, PROJECTS, ETC.)

11. ADDITIONAL GRADUATE REQUIREMENTS IF LISTED AS AN UNDERGRADUATE/GRADUATE COURSE

12. PROVIDE COMPLETE BIBLIOGRAPHY   (May be submitted as a separate document)

Request for Graduate Course Addition - Page 5

Please insert in the text box below your course summary information for the Graduate Council agenda. Please enter the information exactly in this way (including headings):

Department:
Course Number and Title:
Catalog Description:
Prerequisites:
First Term Offered:
Credit Hours:

CS 511Course Syllabus

Marshall University

Syllabus

Course Title/Number	Advance Programming/ CS 511
Semester/Year	Fall/2019
Days/Time	TBD
Location	TBD
Instructor	Wook-Sung Yoo, Ph.D.
Office	WAEC 3101A
Phone	
E-Mail	fuller@marshall.edu
Office/Hours	TBD
University Policies	By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by going to www.marshall.edu/academic-affairs and clicking on "Marshall University Policies." Or, you can access the policies directly by going to

http://www.marshall.edu/academic-affairs/?page_id=802

Academic Dishonesty/ Excused Absence Policy for Undergraduates/ Computing Services Acceptable Use/ Inclement Weather/ Dead Week/ Students with Disabilities/ Academic Forgiveness/ Academic Probation and Suspension/ Academic Rights and Responsibilities of Students/ Affirmative Action/ Sexual Harassment

Course Description

The course covers advanced topics in Python programming including the use of parallel computation and GPU acceleration and investigate how to exploit frameworks such as Hadoop and Spark.

Course Student Learning Outcomes

Upon successful completion of the course, students will be able to
- OC1: Apply advanced techniques for improving the performance of the programs (a,ck)[1]
- OC2: Identify and resolve syntax, logical, and runtime errors using analytical and active debugging techniques. (b,i)[1]
- OC3: Learn to work with frameworks such as Apace Hadoop and Apache Spark (a,b)[1]

Course Student Learning Outcomes	How students will practice each outcome	How student achievement of each outcome will be assessed in this course
OC1 Experiment with developing GPU accelerated Python applications	class lab exercises	Demonstrating Projects
OC2. Learn and apply programming techniques to manipulate data from databases and web repositories	In class lab exercises In class examples	Graded exam problems

OC3. Develop Python applications that utilize big data services such as Hadoop and Spark	In class lab exercises In class examples Ungraded homework assignments	Graded exam problems

Required Texts, Additional Reading, and Other Materials

Required Text

Python Programming Advanced: A Complete Guide on Python Programming for Advanced Users (November, 2016), Author: Adam Stewart, ISBN-13: 9781540616944

Additional Reading

Other Materials
Python web site   www.python.org
SciPy web site   www.scipy.org
Wing Integrated Development Environment   wingware.com/downloads/

Course Requirements / Due Dates

Exams must be taken in class on the scheduled dates. Only Marshall University Excused Absences will be accepted. See the Course Schedule section below for the dates of the exams.

Grading Policy

Activity	*Weight*
Attendance	10%
Group Project	25%
Midterm	30%
Final Exam	35%

The course grade will be awarded based on the following scheme:

Score	Letter Grade
≥ 90	A
≥ 80 & < 90	B
≥ 70 & < 80	C
≥ 60 & < 70	D
< 60	F

Attendance Policy

It is expected for students to attend all classes. Only University-excused absences will be accepted. Attendance accounts for 10% of the overall course grade. Every class you miss, there will be a penalty of -2 marks.

CS 511Course Syllabus

Course Schedule (subject to change)

Week	Topics
1	Working with Shell
2	Version Control
3	Python Performance Tips
4	Effective Code Reviews
5	The itertools Module
6	Python Performance Tuning
7	Cython
8	Numba
9	Python Concurrency
10	Parallel Programming 1
11	Python for GPUs
12	BigData with PySpark