

FLORIDA ATLANTIC UNIVERSITY™

Graduate Programs—NEW COURSE PROPOSAL¹

UGPC APPROVAL _____
 UFS APPROVAL _____
 SCNS SUBMITTAL _____
 CONFIRMED _____
 BANNER POSTED _____
 CATALOG _____

DEPARTMENT: BIOLOGICAL SCIENCES

COLLEGE: CHARLES E. SCHMIDT COLLEGE OF SCIENCE

RECOMMENDED COURSE IDENTIFICATION:

PREFIX BSC COURSE NUMBER 6466 LAB CODE (L or C) _____

(TO OBTAIN A COURSE NUMBER, CONTACT MJENNING@FAU.EDU)

COMPLETE COURSE TITLE: COMPUTER GRAPHICS FOR BIOLOGISTS

EFFECTIVE DATE

(first term course will be offered)

FALL 2014

CREDITS²: 3

TEXTBOOK INFORMATION: PROVIDED ONLINE AT

[HTTP://WWW.SCIENCE.FAU.EDU/SHARKLAB/COURSES/GRAPHICS/READINGS.HTML](http://www.science.fau.edu/sharklab/courses/graphics/readings.html)

GRADING (SELECT ONLY ONE GRADING OPTION): REGULAR X SATISFACTORY/UNSATISFACTORY _____

COURSE DESCRIPTION, NO MORE THAN THREE LINES:

This hands-on graduate course will introduce students to how computer graphics are used in biological sciences for illustration, data extraction, and presentation. Each class will integrate formal lecture sessions with hands-on application at a computer.

PREREQUISITES*:

COREQUISITES*:

REGISTRATION CONTROLS (MAJOR, COLLEGE, LEVEL)*:

Permission of Instructor required

* PREREQUISITES, COREQUISITES AND REGISTRATION CONTROLS WILL BE ENFORCED FOR ALL COURSE SECTIONS.

MINIMUM QUALIFICATIONS NEEDED TO TEACH THIS COURSE: SPECIALIZATION IN THE PERTINENT FIELDS, CONTINGENT UPON DEPARTMENTAL APPROVAL

Faculty contact, email and complete phone number:

Stephen Kajiura, Ph.D.
KAJIURA@FAU.EDU
 (561) 297-2677

Please consult and list departments that might be affected by the new course and attach comments.³

Department of Biological Sciences: This course was previously a Special Topics class and needs a new course number.

Approved by:

Department Chair: 

College Curriculum Chair: _____

College Dean: _____

UGPC Chair: _____

Graduate College Dean: _____

UFS President: _____

Provost: _____

Date:

04.01.14

1. Syllabus must be attached; see guidelines for requirements:
www.fau.edu/provost/files/course_syllabus.2011.pdf

2. Review Provost Memorandum: **Definition of a Credit Hour**
www.fau.edu/provost/files/Definition_Credit_Hour_Memo_2012.pdf

3. Consent from affected departments (attach if necessary)

Email this form and syllabus to UGPC@fau.edu one week before the University Graduate Programs Committee meeting so that materials may be viewed on the UGPC website prior to the meeting.

Computer graphics for biologists

Course: BSC 6466-001

Instructor: Dr. Stephen Kajiura

Office: Sanson 215; hours: Tue 1:30 – 4:30pm

Course website: <http://www.science.fau.edu/sharklab/courses/graphics/index.html>

Semester: Fall 2014

Email: kajiura@fau.edu

Phone: 561-297-2677

An overview of how computer graphics are employed in the life sciences.

Lecture schedule:

Tue 6:00 – 9:00 pm

SC 118

Aug 18 – Dec 10, 2014

See attached schedule for details

Content:

This hands-on graduate course will introduce students to how computer graphics are used in biological sciences for illustration, data extraction, and presentation. Each class will integrate formal lecture sessions with hands-on application at a computer. Enrollment is limited to the number of computers available. All instruction will be on the Macintosh platform and familiarity with the Mac OSX operating system is a course prerequisite. Students will be exposed to the following software: iPhoto, Photoshop, ImageJ, Illustrator, iMovie, Quicktime and Powerpoint. Familiarity with these programs is not required, although it is beneficial.

The lectures will introduce students to raster graphics and how they can be manipulated to facilitate data extraction. Considerable time will be spent on how to capture biologically meaningful photographs since the quality of the data is dependent upon the quality of the image. Students will then be taught how to utilize image analysis software to extract data from the photographs. The second half of the course will examine how vector graphics are used for illustration. Students will learn how to prepare figures for publication, prepare a poster and a media-rich Powerpoint talk. An introduction to video editing will complete the suite of tools to which the students will be exposed.

Students will be graded on their final presentation, their critique of other presentations and their participation in class discussions.

Final presentation:

Each student will present a conference-ready Powerpoint talk (12 min) incorporating photographs, vector graphics and a video clip. The other members of the class will critique the technical aspects of the presentation and provide constructive feedback. With permission of the instructor, a student may be able to substitute a conference poster for the talk. The poster will be subjected to the same class critique.

Students with disabilities:

In compliance with the Americans with Disabilities Act (ADA) students who require special accommodations due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) located in SU 133, x73880, and follow all OSD procedures.

Prerequisites: Familiarity with the Mac OS X operating system is a prerequisite.

Lecture	Topic
1	Introduction to raster graphics
2	Scanning – for print and screen
3	Scientific photography – exposure, composition
4	Scientific photography – macro, digital image size
5	Image enhancement – Photoshop basics
6	Image enhancement – Photoshop intermediate
7	Data extraction – ImageJ
8	Introduction to vector graphics
9	Vector graphics – Illustrator basics
10	Vector graphics – Illustrator intermediate
11	Printing for publication
12	Introduction to video editing
13	Effective presentations – Powerpoint
14	Student presentations
15	Presentation critiques

Tentative schedule – the instructor reserves the right to reassign the order of the lectures.

Policy on absences, makeup tests, late work, and incompletes

Absences for which a medical or court excuse is provided (professional letterhead required) will be recorded but not figured in the attendance grade. Likewise, one absence for which advance notice is given by phone or in person will not be figured in the attendance grade. Students will be given the opportunity to make up exams missed only during excused absences. Any significant tardy or early departure from class will be figured as one absence. Three absences will result in grade F. An Incomplete (I) will be given to students who, at the end of the course, have not completed all of the required course work due to exceptional circumstances, but otherwise have passing grades.

Students with Disabilities

In compliance with the Americans with Disabilities Act (ADA), students with a disability who require reasonable accommodations to properly execute coursework must register with the Office for Students with Disabilities (OSD) - in Boca Raton SU 133 (561-297-3880); in Davie, LA 240 (954-236-1222); in Jupiter, SR 110 (561-799-8010) – and follow all OSD procedures.

Religious Accommodations

Students who wish to be excused from course work, class activities or examinations must notify the instructor in advance of their intention to participate in religious observation and request an excused absence.

Code of Academic Integrity policy

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the university mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4.001.



Charles E. Schmidt College of Science
Department of Biological Sciences
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fax: 561.297-2749

TO: University Graduate Programs Committee (UGPC)
FROM: Rodney Murphey, Ph.D.
Professor and Chair
Department of Biological Sciences
DATE: February 19, 2014
RE: New Course Proposal Consent

To Whom It May Concern:

This note constitutes acknowledgement and consent of the Department of Biological Sciences for the creation of a new course within the department: **BSC 6466 – Computer Graphics for Engineers.**

Best Regards,

A handwritten signature in blue ink, appearing to read 'RSC. Murphey', is written over the typed name.

Rodney Murphey, Ph.D.
Chairman, Department of Biological Sciences
Director, Life Science Initiative on the MacArthur Campus