


 FLORIDA ATLANTIC UNIVERSITY	NEW COURSE PROPOSAL Graduate Programs		UGPC Approval _____ UFS Approval _____ SCNS Submittal _____ Confirmed _____ Banner Posted _____ Catalog _____	
	Department Biomedical Science College Medicine <i>(To obtain a course number, contact erudolph@fau.edu)</i>			
Prefix GMS Number 6091	<i>(L = Lab Course; C = Combined Lecture/Lab; add if appropriate)</i> Lab Code C	Type of Course Lecture/Lab	Course Title Biomedical Science Core Technologies Laboratory	
Credits <i>(Review Provost Memorandum)</i> 3	Grading <i>(Select One Option)</i> Regular <input checked="" type="radio"/> Sat/UnSat <input type="radio"/>	Course Description <i>(Syllabus must be attached; see Guidelines)</i> The aim of this course is to provide students with the introductory skills required for research success in the biomedical sciences. The course will combine traditional classroom-based learning with hands-on practical laboratory experience and instruction.		
Effective Date <i>(TERM & YEAR)</i> Spring 2019	Prerequisites NONE		Corequisites NONE	Registration Controls <i>(Major, College, Level)</i> Instructor permission required
<i>Prerequisites, Corequisites and Registration Controls are enforced for all sections of course</i>				
Minimum qualifications needed to teach course: Member of the FAU graduate faculty and has a terminal degree in the subject area (or a closely related field.)		List textbook information in syllabus or here		
Faculty Contact/Email/Phone Dr. Lisa Brennan 561.297.3806 lbrenna6@health.fau.edu; Dr. Wen Shen (561) 297.0629 wshen@health.fau.edu		List/Attach comments from departments affected by new course		

Approved by Department Chair  College Curriculum Chair  College Dean _____ UGPC Chair _____ UGC Chair _____ Graduate College Dean _____ UFS President _____ Provost _____	Date 10-8-18 10/8/18 10-8-18 _____ _____ _____ _____
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Email this form and syllabus to UGPC@fau.edu one week before the UGPC meeting.

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Effective Date <small>(TERM & YEAR)</small> Fall 2018	Prerequisites NONE		
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Minimum qualifications needed to teach course: Member of the FAU graduate faculty and has a terminal degree in the subject area (or a closely related field.)		List textbook information in syllabus or here	
Faculty Contact/Email/Phone Dr. Lisa Brennan; Tel: 561 297 3806; lbrenna6@health.fau.edu Dr. Wes Sharp; 561 297 0229; wsharp@fau.edu		List/Attach comments from departments affected by new course	

Approved by Department Chair <u>Janet Boboshaw</u> College Curriculum Chair <u>Janet Boboshaw</u> College Dean <u>[Signature]</u> UGPC Chair <u>[Signature]</u> UGC Chair <u>[Signature]</u> Graduate College Dean <u>Mahed Soltan</u> UFS President _____ Provost _____	Date <u>6/1/18</u> <u>8/10/18</u> <u>6/4/18</u> <u>8/22/18</u> <u>8/22/18</u> <u>8/22/2018</u>
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Biomedical Sciences Core Technologies Laboratory

Instructors:

Dr. Lisa Ann Brennan

Office:

Tel: 561 297 3806

Email: lbrenna6@health.fau.edu

Dr. Wen Shen

Office: BC-71, Room 229,

Tel 561-297-0628

Email: wshen@fau.edu

Course Code: PCB 6933

Credit: 3cr

Room No: Lab 217B

Class Times: August 20th – Nov 19th 2018. Mondays 2pm-4.50pm

Office Hours: Dr. Brennan - Mondays and Wednesdays 11am-12pm or by appointment

Dr. Wen Shen - By appointment

Textbook and Materials: None required

Course registration and enquiries: Ms Bridget Statler, Office of Graduate Programs

Course requirements: Previous coursework and laboratory course experience in biology, biochemistry and/or cell biology and permission of instructor.

Course Description:

The aim of this course is to provide students with the introductory skills required for research success in the biomedical sciences. The course will combine traditional classroom-based learning with hands-on practical laboratory experience and instruction.

Learning outcomes

On successful completion of the course, students will:

- 1. Understand research ethics, academic integrity and best practices for biomedical research.**
- 2. Understand and apply the scientific method to form logical and testable hypotheses.**
- 3. Master the principals of experimental design including use of experimental rigor, design of appropriate controls and secondary hypothesis formulation.**

4. Understand core technologies of the modern biomedical research laboratory including cell culturing techniques, recombinant DNA technology, gene expression analysis, antibody-based assays and biomedical imaging.

5. Master laboratory record keeping skills, data processing, data formatting and data presentation.

6. Understand the principals of academic integrity including experimental documentation, use of appropriate references, avoidance of plagiarism and scientific authorship.

Course Schedule:

Monday August 20th	Introduction to the Biomedical research I	Review Syllabus Lab safety/Responsible conduct in research (RCR) Pipetting/Notebooks. Scientific measurements – SI units. Buffer prep - molarity, pH. Reagent and sample handling.	Dr. Brennan
Monday August 27th	Introduction to the Biomedical research II	The scientific method. Forming a hypothesis. Experimental design. Models in biomedical research. Data collection and presentation. Practice: Restriction digest and analysis	Dr. Brennan
Monday September 3 rd	Labor day No Lab		
Monday September 10th	Protein	SDS PAGE and Western blot	Dr. Shen
Monday September 17th	Protein	Enzyme assays ELISAs	Dr. Shen
Monday September 24th	Cells	Cell culture, Viability assays	Dr. Shen
Monday October 1st	Cell	Cell histology, H& E staining	Dr. Shen
Monday October 8th	IHC/ microscopy	Principles of confocal microscopy	Dr. Shen
Monday October 15th	IHC/ microscopy	Examination of stained cells using Zeiss LSM700	Dr. Shen
Monday October 22nd	DNA	Theory: Methods in DNA analyses, PCR, Techniques based on PCR Practice: Forensic DNA Fingerprinting – real world application of RE digest and analysis	Dr. Brennan
Monday October 29th	DNA	Theory: Large scale DNA analysis - GWAS/PheWAS Practice: Detection of the human PV92 ALU insertion - DNA extraction, DNA electrophoresis Real world application of PCR and genotyping	Dr. Brennan
Monday November 5th	RNA	Theory: Gene expression analysis, Practice: RNA extraction, primer design, RT-PCR	Dr. Brennan

Monday November 12th	RNA	Theory: Large scale transcript analyses - RNAseq Practice: RT-qPCR, RNAseq database analysis	Dr. Brennan
Monday November 19th		Turn in lab books for review	Dr. Brennan

Assignments:

Students will keep a laboratory notebook detailing experiments performed in each lab. It is student's responsibility to ensure their reports do not have plagiarized materials that are copied and pasted from the textbook or handouts.

Each lab will have a quiz based on both the conceptual and practical elements of the course.

Course Grading:

Laboratory participation 30%

In lab quizzes 20%

Laboratory Reports 50%

Course Policies: Participation is required for every lab class. Missing class, changing presentation dates and/or missing exams is not allowable without prior approval of the instructor and an approved physician's letter or a letter of conflict from an approved University Official to attend a mandatory University-approved activity.

Classroom/Lab etiquette: Please refer to the FAU Catalog and Student Handbook. Compliance with university rules and regulations is expected of all students.

Academic Honor Code: 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.

The FAU Honor Code requires a faculty member, student, or staff member to notify an instructor when there is reason to believe an academic irregularity is occurring in a course. The instructor must pursue any reasonable allegation, taking action where appropriate. The following constitute academic irregularities:

1. The use of notes, books or assistance from or to other students while taking an examination or working on other assignments, unless specifically authorized by the instructor, are defined as acts of cheating.
2. The presentation of words or ideas from any other source as one's own is an act defined as plagiarism.
3. Other activities that interfere with the educational mission of the University.