FLORIDA ATLANTIC UNIVERSITY™

Graduate Programs—NEW COURSE PROPOSAL

UGPC APPROVAL _____
UFS APPROVAL _____
SCNS SUBMITTAL _____
CONFIRMED _____
BANNER POSTED _____
ONLINE _____
MISC _____

DEPARTMENT NAME: BMED | **COLLEGE OF: COLLEGE OF BIOMEDICAL SCIENCE – MEDICAL EDUCATION PROGRAM**

RECOMMENDED COURSE IDENTIFICATION:

PREFIX _____BMS_____ **COURSE NUMBER** _6009_____ **LAB CODE** (L or C) _____

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

COMPLETE COURSE TITLE : Fundamentals of Biomedical Science 3

EFFECTIVE DATE
(first term course will be offered)
FALL, 2011

CREDITS: 5 HRS.

TEXTBOOK INFORMATION:

Medical Physiology 1st Edition	Boron and Boulpaep	Elsevier
The Immune System 3rd Edition	Parham	Garland Science
Medical Microbiology 5th Edition	Murray, Rosenthal, Kobayashi & Pfaller	Elsevier
Robbins and Cotran's Pathologic Basis of Disease 7th Edition	Kumar, Cotran, Robbins	Saunders
Basic and Clinical Pharmacology 10th Edition	Katzung	McGraw-Hill

GRADING (*SELECT ONLY ONE GRADING OPTION*): **REGULAR** ___X___ **PASS/FAIL** _____ **SATISFACTORY/UNSATISFACTORY** _____

COURSE DESCRIPTION, NO MORE THAN 3 LINES:
The purpose of the Fundamentals of Biomedical Science series is to teach the basic concepts and vocabulary in the disciplines of cell biology and physiology, genetics and biochemistry, immunology, microbiology, histology and pathology. The Fundamentals of Biomedical Science series also provides a solid foundation in the gross anatomy and imaging necessary for subsequent learning about relevant clinical anatomy principles.

PREREQUISITES W/MINIMUM GRADE:*	**COREQUISITES:**	**OTHER REGISTRATION CONTROLS (MAJOR, COLLEGE, LEVEL):**
Fundamentals of Biomedical Science 1 & 2		

PREREQUISITES, COREQUISITES & REGISTRATION CONTROLS SHOWN ABOVE WILL BE ENFORCED FOR ALL COURSE SECTIONS.

****DEFAULT MINIMUM GRADE IS D-.***

MINIMUM QUALIFICATIONS NEEDED TO TEACH THIS COURSE: PHD/ M.D.

Other departments, colleges that might be affected by the new course must be consulted. List entities that have been consulted and attach written comments from each.

Morton Levitt, M.D., MHA
Phone: 561-297-0911
E-Mail: mlevitt3@fau.edu

_____
Faculty Contact, Email, Complete Phone Number

SIGNATURES

Approved by:	***Date:***
Department Chair: _____	_____
College Curriculum Chair: _____	_____
College Dean: _____	_____
UGPC Chair: _____	_____
Dean of the Graduate College:	_____

SUPPORTING MATERIALS

Syllabus—must include all details as shown in the UGPC Guidelines.

Written Consent—required from all departments affected.

Go to: *http://graduate.fau.edu/gpc/* to download this form and guidelines to fill out the form.

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

FAU Medical Education Program. 2011-2012
Syllabus
Fundamentals of Biomedical Science 3
BMS **6009**
Number of credit hours: 5

2. Course prerequisites:

Accepted for matriculation in the FAU Medical Sciences program.

3. Course logistics:

a. term: Fall 2011
b. not an online course
c. Biomedical Science Building room BC-126, anatomy lab, small group PBL rooms.

4. Instructor information:

Course Director: Morton Levitt, M.D., MHA
Clinical Professor
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Mlevitt3@fau.edu

Course support:

Ms Tamara Alexander	Ms Mavis Brown
Program Assistant	Curriculum Coordinator
BC-137	BC-138
561-297-1373	561-297-0899
talexa14@fau.edu	mwbrown@fau.edu

Please note: Any official student communication from the director or program assistant will be sent via e-mail to students at their FAU e-mail addresses. *If students would like to meet with the course director, they must call or e-mail the course director to schedule an appointment.*

5. TA contact information:

N/A

6. Course description:

Rationale:

The Continuity Medicine Curriculum uses a chronic illness model and an integrated patient care approach to prepare students for medical practice.

The purpose of the Fundamentals of Biomedical Science is to teach the basic concepts and vocabulary in the disciplines of cell biology and physiology, genetics and biochemistry, pharmacology, immunology, microbiology, histology and pathology. The course is the last of a series of three that aims to go beyond the traditional discipline boundaries to use an integrated approach to present the basic science underpinning of clinical medicine. To achieve this goal, a combination of lectures and problem-based learning (PBL) is used. The PBL sessions in the small-group setting use a set of disease models to focus students on the basic science; lectures in the classroom setting are thematically related to the disease model and used to complement the PBL with additional key concepts.

The Fundamentals of Biomedical Science also provides a solid foundation in gross anatomy and imaging necessary for subsequent leaning about the anatomy related to clinical problems. All major areas of the human body will be covered in the three courses of the series and in the CMC Neuroscience and Behavior course (BMS 6020). The areas are presented to complement the teaching in Physicianship Skills courses (BMS 6015 / BMS 6016).

The goals of the medical program are to teach the attitudes and skills required for achieving competency as effective practitioners. The goal of the Fundamentals of Biomedical Science courses is to provide opportunities to acquire a fund of knowledge by encouraging students to be proactive and responsible for their learning in the classroom, small-group and laboratory settings.

7. Course objectives/student learning outcomes:

Competency Based Objectives:

At the end of the Fundamentals of Biomedical Science courses, medical students will be able to:

Professionalism

- Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to their peers, patients and faculty
- Appreciate the importance of a compassionate, non-judgmental attitude with classmates, faculty and staff
- Understand and respect the need to collaborate with each other to promote learning
- Apply reflective practice as a strategy to achieve personal and professional growth
- Apply methods to reduce stress and improve wellness in oneself and others

Interpersonal Skills and Communication

- Students must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with their peers and faculty
- Demonstrate the ability to work in professional teams to solve problems.
- Demonstrate the ability to do self and peer evaluations of performance and knowledge levels
- Demonstrate skills to learn in a student-centered and adult learning environment

Patient Care

- Correlate the biomedical science aspect of model diseases to the clinical knowledge acquired in the Integrated Patient Care and Physicianship Skills

Medical Knowledge

- Understand the basic vocabulary of the biomedical sciences as they relate to structures, processes and diseases
- Understand the concept of genome organization and expression and its effect on the practice of medicine
- Describe the roles of various bio-molecules in the major metabolic pathways of cells
- Correlate basic normal human anatomy with images used by health care professionals
- Identify the knowledge base and gaps related to the application of course content to clinical disorders
- Utilize a variety of resources (faculty, textbooks, computers, internet, etc.) to find information about anatomical, histological and developmental issues related to normal structure and clinical problems
- Understand the interactions between organisms in infectious diseases and the mechanisms of defense against human pathogens
- Understand the basic pathologic processes as they apply to disease mechanisms

Practice-Based Learning and Improvement

- Reflect on the importance of dedication to life-long learning and strive for excellence in order to consistently provide optimal performance in class, small group and ultimately in patient care
- Take charge of their own learning and effectively elicit feedback from faculty and peers in order to optimize learning

Systems-Based Practice

- N/A

8. Course evaluation method:

Examination Policy:

Exam Composition: All examination questions will be multiple-choice. Clinical vignettes will be used for many questions, and images will be incorporated as appropriate. Approximately 1-2 questions per lecture hour, 1-2 questions per PBL case hour and 1-2 questions per laboratory hour will be used.

Exams will be delivered electronically via student laptops. Laboratory Practical Exams will be pen and paper exams.

Exam Administration: All examinations will be administered in the Biomedical Sciences building on the dates and times documented in the examination schedule. A student must sit for all examinations as scheduled. A student must obtain permission for an excused absence from the course director and notify the Assistant Dean for Student Affairs prior to the time for sitting for a scheduled examination. In the event of a personal emergency, the course director and the Assistant Dean for Student Affairs must be notified of the absence as soon as possible. Missed examinations will be rescheduled at the discretion of the course director, at a time that does not interfere with other course work. Unexcused absences will result in a grade of zero (0) for the missed examination.

All absences from examinations should be documented by a PIR from the course director and will be communicated to the Office of Student Affairs. A record of excused and unexcused absences from examinations will be maintained by the Office of Student Affairs. A pattern of recurrent absences from examinations, whether excused or unexcused, will be reviewed by the class promotions committees and may result in a recommendation up to and including dismissal from the FAU medical Education Program. (See Student Rights and Responsibilities Handbook)

During the exams, students are required to follow the examination protocol presented by the proctors. No specific questions regarding an exam item will be answered during any exam.

Examination Scoring: Scoring will be based solely on the answers recorded by the student on their laptop computer. Miskeying of answers will not be considered in grading a student's examination. Accuracy is the sole responsibility of the student.

Grades will be available via Blackboard in a timely fashion.
Viewing the Examination: All exams will be secure. Students can access a copy of the exam for review in the Office of Medical Education, Room BC-136

Grading Policy:

Activity	Date	Percentage of Grade
Exam #1	Friday December 18	30
Exam #2	Monday January 25	30
Anatomy component Practical Exam and Quizzes	Thursday January 21	20
PBL Small Group Performance		20
	Total	100

Students are required to pass the individual activities (Exam #1, Exam #2, Practical Exam, Small group performance) in order to pass the course overall.

The Student Rights and Responsibilities Handbook contains a description of the grading system.

1. Exam #1
- Consists of questions covering objectives from lectures in biomedical sciences and gross anatomy, and PBL cases.
- Includes material up to and including Wednesday December 16.

2. Exam #2
- Consists of questions covering objectives from lectures in biomedical sciences and gross anatomy, and PBL cases.
- Includes material from January 4 up to and including January 22

3. Anatomy Practical Exam and Quizzes
- Aggregate grade consists of questions from the practical exam (50 questions) and from the 3 quizzes (30 questions). Unlike the FBS1 course, all quizzes will be averaged into the aggregate grade.

4. PBL Small Group Performance
- Active participation and attendance are expected in all small groups (See Attendance Policy).
- Consists of the Core Facilitator Evaluation of the student performance during the course.

Copies of the form used to evaluate students may be found under the "Handouts and links" section of the student e-Dossier on Blackboard.

When a student obtains a "D" or "F" on any examination, a letter is sent to the student asking them to contact the Course director for assistance. The letter is copied to the student's file.

9. Course grading scale:

A = 93-100; A- = 90-92; B+ = 88-89; B = 83-87; B - = 80-82;
C+ = 78-79; C= 73-77; C- = 70-72; D+ = 68-69; D = 63-67; D- = 60-62; F = 59 and below.

10. Policy on makeup tests, etc.

Current policy for the FBS courses:

Failure in the *individual discipline* components

a) The Office of Medical Education is monitoring student performance in the *individual discipline* components in the courses FBS 1, 2, 3. Students are required to obtain a passing grade in these disciplines, although these grades do not form part of the student official transcript. The five discipline groupings are:
    1. Anatomy/embryology
    2. Histology/pathology
    3. Microbiology/immunology
    4. Molecular and cellular biology
    5. Pharmacology/physiology

b) A student may pass a written examination, but not pass an individual discipline component. When this is determined after an individual examination, a letter is sent to the student from the Course Director. The letter is copied to the student's file. The individual discipline component grade is calculated as the number of correct answers over the total number of questions in that discipline over the span of FBS1, 2, 3. A grade of 70% is used as the benchmark for passing a discipline component. The benchmark may be adjusted based on class performance and other possible extenuating circumstances, as determined by the Course Directors for FBS 1, 2, 3.

c) It is mathematically possible for a student to receive a passing grade for all of the FBS courses, and pass all the written examinations, yet not pass a discipline component. If this occurs, the student will be required to meet with appropriate content faculty and course director(s). The plan of remediation will be determined by the Course Director and the Promotions Committee. Successful completion of the remediation must be provided in order for the student to go on to the next academic year. The student will be discussed at the Promotions Committee meeting.

11. Special Course requirements:

Attendance Policy:

The FAU faculty and administration agree that student attendance and participation in all scheduled learning sessions are important to students' academic and professional progress, and ultimate success as physicians.

Attendance at the Monday/Wednesday/Friday small-group sessions and wrap-up is **mandatory**.

***For an absence to be excused, a request must be made to the Course Director*. Only a Course Director can excuse an absence. No missed work associated with a specific session can be made up without loss of credit for satisfactory completion unless an excused absence has been granted.**

An excused absence from a small-group PBL session will be made up by the assignment of an additional learning issue to the student. An unexcused absence will result in the assignment of an additional learning objective for each absence, and a two point deduction from the PBL small group performance component of the final grade.

Attendance at the Tuesday morning anatomy sessions is expected for all scheduled activities. Students are expected to be on time: in that each session will start with a short written quiz, being on time is defined as being ready to start at the assigned time so as to not be pressured to finish the web-based quiz within its assigned time.

Repeated unexcused absences from required curricular activities may result in disciplinary action, up to and including dismissal from the FAU Medical Education Program.

12. Classroom etiquette policy:

Students should be considerate of each other by switching his/her cell phone to vibrate during all teaching activities.

If a telephone call is of an emergency nature and must be answered during class, the student should excuse him/herself from the lecture hall before conversing.

Laptop computer use should be limited to viewing and recording lecture notes rather than checking e-mail, playing or viewing other distracting websites. Students may be asked by faculty to turn off laptops during any session where group participation is required (such as PBL and wrap-up sessions).

13. Disability policy statement:

In compliance with the Americans with Disabilities Act (ADA), students who require special accommodation due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) –in Boca Raton, SU 133 (561-297-3880)—and follow all OSD procedures.

14. Honor code 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.

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.

For full details of the FAU Honor Code, see University Regulation 4.001 at www.fau.edu/regulations/chapter4/4.001_Honor_Code.pdf.

The Code of Honorable and Professional Conduct should serve as a guide to medical students in matters related to academic integrity and professional conduct. The Code of Honorable and Professional Conduct provides a mechanism for peer evaluation of student conduct which the FAU faculty and administration believe is an essential component of medical education and development of medical students.

15. Required texts/readings:
The following are textbooks that students are expected to purchase for use in the . All the textbooks listed below will be available at the FAU Bookstore at the beginning of the academic year.

Required Textbooks:

The following are textbooks that students are expected to purchase for use in the Fundamentals of Biomedical Science sequence. All the textbooks listed below have been available at the FAU Bookstore since the beginning of the academic year.

In FBS 2 and FBS 3, the additional texts emphasized are:

Title	Author(s)	Publisher
Medical Physiology 1st Edition	Boron and Boulpaep	Elsevier

The Immune System 3rd Edition	Parham	Garland Science
Medical Microbiology 5th Edition	Murray, Rosenthal, Kobayashi & Pfaller	Elsevier
Robbins and Cotran's Pathologic Basis of Disease 8th Edition	Kumar, Cotran, Robbins	Saunders
Basic and Clinical Pharmacology 10th Edition	Katzung	McGraw-Hill

The texts emphasized In FBS 1 remain part of the student resources:

Title	Author(s)	Publisher
Genetics in Medicine 7th Edition	Thompson and Thompson	Saunders
Biochemistry: Lippincott's Illustrated Reviews 4th Edition	Champe, Harvey and Ferrier	Lippincott, Williams and Wilkins
Langman's Medical Embryology 11th Edition	Sadler	Lippincott, Williams and Wilkins
Histology: a Text and Atlas 5th Edition	Ross and Pawlina	Lippincott, Williams and Wilkins
Essential Clinical Anatomy 3rd Edition	Moore and Agur	Lippincott, Williams and Wilkins
Frank Netter Anatomy Atlas 4th Edition	Netter	Elsevier

Suggested Textbook:

Title	Author(s)	Publisher
Anatomy in Diagnostic Imaging	Fleckenstein and Tranum-Jensen	Blackwell

16. Supplementary resources:

Web Resources:

(These resources and others may be accessed via the *"Handouts and links" of the student e-Dossier on Blackboard)*

Integrated Medical Curriculum http://imc.meded.com/
The site provides materials related to the gross anatomy component of the FBS sequence. The username and password given to each student at the beginning of the FBS1 course will continue to be valid.

Medline Dictionary http://www.nlm.nih.gov/medlineplus/mplusdictionary.html
An online dictionary provided by the US National Library of Medicine and the National Institutes of Health. A potentially useful resource during the PBL small group sessions.

The Visible Embryo http://www.visembryo.com
This highly recommended site presents a series of 3D images of the developing embryo and fetus with text commenting on specific developmental events that are occurring at each stage. The website contains images from the collection of 10,000 embryos at the National Institute of Child Health and Human Development, an institute of NIH.

Aperio Microscope Images: These virtual microscope images, which can be accessed through the One45 site, via the "Handouts and Links" tab, can be found at: http://med.fau.edu/aperio. These images will be used for in-class didactic as well as PBL-based exercises.

Internet Pathology Laboratory for Medical Education ["Webpath"]: http://med.fau.edu/webpath
A comprehensive learning tool, it encompasses the latest edition of the world-famous WebPath© software. Individual PBL-based exercises will utilize this resource. In addition, the application contains useful anatomy, radiology, histology, and microbiology images and tutorials, in addition to thousands of general and systemic pathology images. Students and faculty alike may wish to utilize this resource for learning and teaching purposes. In addition, WebPath contains a section of case-based laboratory exercises and examination questions (with fully-explained answers) that are very helpful resources for learning and review. The username and password given to each student at the beginning of the FBS1 course will continue to be valid.

Web-based postings:

Students are encouraged to carry their laptop with them as much as possible in order to access resources, patient log and other resources.

Please refrain from checking personal e-mails during teaching periods. Please put your cell phone or pager on "vibrate" to minimize disruption.

Please be punctual as a courtesy to your colleagues and faculty.

Session handouts	*Yes*	Session Objectives	*Yes*	Quizzes	*Delivered via laptop*
Required Activities	*Yes*	Grades	*Yes*	Exams	*Delivered via laptop (except practicals)*

17. Course topical outline, including dates:

Content outline:

Please refer to Blackboard for up-to-date information and session-related objectives and handouts.

Week of	Academic Week	Session Topic
11/30/11	Week 17	T cell overview
		NK Cell and Innate Immunity
		Viral Replication
		Respiratory Viruses
		PBL 9
12/07/11	Week 18	Large DNA Viruses
		Small DNA Viruses
		Pelvic Viscera
		Anatomy Case Correlations
		Gross Anatomy Laboratory
		Hepatitis
		Antigen Processing and Presentation
		Neurologic and Gastroenteric and Hemorrhagic Fever
		PBL10
12/14/11	Week 19	Allergy and Asthma
		Tolerance and Immunity
		Anatomy Quiz
		Histology of Male Reproductive System
		Histology of Female Reproductive System

		PBL 11
		FBS 3 examination # 1
Holiday Break		
01/04/12	Week 20	Digestive System
		Lower Limb, Gluteal Region
		Anatomy Case Correlations
		Gross Anatomy Laboratory
		Chronic Inflammation and Repair
		PBL 12
01/11/12	Week 21	Histology of Urinary System
		Anatomy Quiz, Thigh and Leg
		Anatomy Case Correlations
		Gross Anatomy Laboratory
		Congestion and Edema
		Thrombosis, Embolism and Infarction
		PBL 13
		Neoplasia Overview
01/18/12	Week 22	Anatomy Quiz ,Foot and Joints of the Lower Extremity
		Anatomy Case Correlations
		Gross Anatomy Laboratory
		Neoplasia Basic Characteristics of Cancer
		Molecular Basis of Cancer
		Laboratory Practical Exam
		PBL 14
01/25/12	Week 23	FBS 3 examination # 2

Study Habits:

A major contribution to your learning is active engagement, which includes participation in the learning of other students and interaction with the instructors. Students are expected to be proactive and to access the Blackboard system to review items associated to individual sessions.

Learning in the field of medicine is a life-long endeavor that is not only necessary, but can and should be fun. One of the most important factors for learning is curiosity and sometimes, the best way to keep this curiosity stimulated is through our interaction with colleagues and peers. When learning in small groups, we have a chance to try to explain topics to each other, brainstorm solutions together, give each other constructive feedback, and support and validate each other. We encourage balancing studying alone with learning in small groups. It to important to develop a study routine to avoid “putting things off” and “cramming” and to minimize the stress we may add to our lives in that way.

Independent Study Time:

Independent Study Time allocated within the day time schedule is provided for students, on average about 9 hours per week.

Students are expected to use this time to further their learning. The time should be used for independent study or with peers. It is an opportunity to seek out faculty to interact with them outside the formal teaching setting. Since the PBL small-group format requires that students research learning objectives, the time may be used to prepare for the subsequent sessions. Finally, the time may used to work on assignments, problem-solving cases, off-campus visits or other tasks that are required by the courses.

Occasionally, some Independent Study Time sessions may be used for curriculum-related activities (e.g. standardized examinations): notice will be given as early as possible for these occasions.

Course and Faculty Evaluation:

FAU highly values the process of formal program evaluation and feedback. FAU students are required to complete all course evaluations and program evaluation surveys which are the Students Perception of Teaching (SPOT).

Grades and transcripts may be held for failure to submit required surveys. Evaluations should be constructive, to help improve individual faculty's teaching, and the content and format of the courses.

Moreover, the timely completion of evaluations at the level of undergraduate medical education assists students in developing the administrative and organizational skills required throughout their academic and professional career. We appreciate your completing evaluations to help continue with improvement of the learning experiences and environment for all students.

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