

FLORIDA ATLANTIC UNIVERSITY™

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Graduate Programs—NEW COURSE PROPOSAL

DEPARTMENT NAME:
Basic Science

COLLEGE OF:
Charles E. Schmidt College of Biomedical Science

RECOMMENDED COURSE IDENTIFICATION:
 PREFIX _____ BMS _____ COURSE NUMBER 6715 _____ LAB CODE (L or C) _____
 (TO OBTAIN A COURSE NUMBER, CONTACT ERUDOLPH@FAU.EDU)
 COMPLETE COURSE TITLE Molecular Basis of Disease & Therapy

EFFECTIVE DATE
 (first term course will be offered)

 SPRING 2011 _____

CREDITS: 3

TEXTBOOK INFORMATION:
 NO TEXTBOOK REQUIRED

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

COURSE DESCRIPTION, NO MORE THAN 3 LINES: This course will explore the molecular basis of selected viral pathogens, genetic diseases and cancer through a series of lectures from the instructor and presentation by faculty members in the College of Science, Biomedical science, Scripps Florida and the private industry. Novel technologies aimed at the development of therapeutics will be discussed together with the activity of modern biotechnology in drug development.

PREREQUISITES W/MINIMUM GRADE:*
 BCH 4035 Advanced Biochemistry
 and PCB 4023 Molecular & Cell
 Biology or PCB 4522 Molecular
 Genetics Minimum grade: B-

COREQUISITES:

OTHER REGISTRATION CONTROLS (MAJOR, COLLEGE, LEVEL):
 Graduate Students Only

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:
 Ph.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. Department of Biology

Massimo Caputi, Ph.D, mcaputi@fau.edu, tel: 297-0627

Faculty Contact, Email, Complete Phone Number

SIGNATURES

SUPPORTING MATERIALS

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

Date:
 3-16-10
 3-16-10
 3-17-10

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.

Molecular Basis of Disease and Therapy

Course Number: BMS 6715

Prerequisites:

Students taking this course are required to have taken courses in advanced molecular and cellular biology, biochemistry and laboratory techniques at undergraduate and possibly graduate level.

Co-requisites: none

Instructor: Massimo Caputi, PhD

Office: College of Biomedical Science BC 71, Rm 227

Telephone: 561-297-0627

Email: mcaputi@fau.edu

Textbooks:

No textbook required. Original research and review Journal articles will be assigned. Electronic copies of each article are provided by the instructor.

Bibliography: Examples of Journal articles assigned

N.Proudfoot, A.Furger, M.Dye. *Cell*. 2002 Feb 22; 108(4): (501-512)

Orphanides G, Reinberg D. *Cell*. 2002 Feb 22; 108(4): 439-51.

Proudfoot N. *Curr Opin Cell Biol*. 2004 Jun;16(3):272-8

Black,D.L (2003). *Annu. Rev. Biochem.* 72:291–336

Pandit S, Wang D, Fu XD. *Curr Opin Cell Biol*. 2008 Jun;20(3):260-5.

Kornblihtt AR, de la Mata M, Fededa JP, et al. *RNA*. 2004 Oct;10(10):1489-98.

M.S. Rodriguez, C. Dargemont and F. Stutz. *Biology of the Cell* 96 (2004) 639–655

C.J. Wilusz, M. Wormington & S.W. Peltz. *Nature Rev. Mol. Cell Biol.* (2001) 2: 237-246

Bakkour, N., Y. L. Lin, S. Maire, L. Ayadi, F. Mahuteau-Betzer, C. H. Nguyen, C.

Mettling, P. Portales, D. Grierson, B. Chabot, P. Jeanteur, C. Branlant, P. Corbeau, and J. Tazi. 2007. *PLoS Pathog* 3:1530-9.

Valente, S. T., G. M. Gilmartin, K. Venkatarama, G. Arriagada, and S. P. Goff. 2009. *Mol Cell* 36:279-89.

Sanford, J. R., N. K. Gray, K. Beckmann, and J. F. Caceres. 2004. A novel role for shuttling SR proteins in mRNA translation. *Genes Dev* 18:755-68.

Peretti, S., I. Schiavoni, K. Pugliese, and M. Federico. 2006. Selective elimination of HIV-1-infected cells by Env-directed, HIV-1-based virus-like particles. *Virology* 345:115-26.

Course description:

This course will explore the molecular basis of selected viral pathogens, genetic diseases and cancer through a series of lectures from the instructor and presentation by faculty members in the College of Science, Biomedical science, Scripps Florida and the private industry. Novel technologies aimed at the development of therapeutics will be discussed together with the activity of modern biotechnology in drug development.

Instructional objectives:

The aim of the course is to educate the students on the current advances in the study of gene expression. Models of viral and genetic disease will be employed to educate the students on recent advances in approach and design of therapeutics. By the end of the course the students are expected to develop an understanding of the process that allows translating basic scientific knowledge of biological and molecular mechanisms into the development of a novel therapeutic. The students are also expected to develop oral presentation skills that will allow them to present their research or other scientific subject to an audience in a professional or academic setting.

Method of Instruction: Journal Reviews and group discussions will integrate the lectures.

Schedule including topics covered and exams:

Date	Topic
1/12/10	Course Introduction
1/14/10	Gene expression I (Lecture)
1/19/10	Gene expression II (Lecture)
1/21/10	Gene Expression III (Lecture)
1/26/10	Transcriptional coupling (Lecture)
1/28/10	Molecular Biology of HIV (Lecture)
2/2/10	HIV Epidemiology/ therapies (Lecture)
2/4/10	Journal article presentation on Transcription/splicing coupling
2/9/10	Journal article presentation on HIV-1 therapy
2/11/10	Journal article presentation on Viral Like Particles (VLPs)
2/16/10	Journal article presentation on HIV-1 cellular restriction factors
2/18/10	Dr. Susana valente (Scripps FL) HIV-1 cellular restriction factors (Lecture)
2/23/08	Oligonucleotides as molecular tools and therapeutics (Lecture)
2/25/08	Journal article presentation siRNAs
3/2/10	Midterm exam
3/4/10	Dr. Mike Conkright (Scripps FL) Genomic Library Screening
3/16/10	Dr. Donny Strosberg (Scripps FL) Hepatitis C Virus
3/18/10	Journal article presentation on Genomic Library screening
3/23/10	Non Coding RNA (Lecture)
3/25/10	Journal article presentation on miRNA
3/30/10	The Human genome / Transcriptome (Lecture)
4/1/10	Journal article presentation on transcriptome sequencing paper
4/6/10	Journal article presentation on HITS-CLIP

4/8/10	Use of databases /cloning exercise (Lecture)
4/13/10	Drug development / FDA and Biotech (Lecture)
4/15/10	Suspended animation from bench science to Biotech (Lecture)
4/20/10	Finals Students Presentations
4/22/10	Finals Students Presentations
4/27/10	Finals Students Presentations
4/29/10	Finals Students Presentations
5/3/10	Evaluation and Grading

Assessment Procedures:

Students will be expected to attend lectures, participate in discussions, and give one journal club presentation and one oral presentation related to the topics discussed during the course. A written midterm exam covering the lectures topics will be given before spring break.

Final grades will be assigned based on the following criteria:

- 20% attendance and participation
- 20% Midterm written test
- 30% Journal club oral presentation
- 30% Final topic oral presentation

Grading criteria:

- A 90-100
- B 80-89
- C 70-79
- D 60-69
- F <59

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.

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.

Students With Disabilities

In compliance with the American 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) – in Boca Raton, SU 133 (561-297-3880); in Davie, MOD 1 (954-236-1222); in Jupiter, SR 117 (561-799-8585); or at the Treasure Coast, CO 128 (772-873-3305) – and follow all OSD procedures.

Julie Sivigny

From: David Binninger [binninge@fau.edu]
Sent: Wednesday, March 17, 2010 11:47 AM
To: Julie Sivigny
Cc: Rodney Murphey
Subject: Fwd: Biomedical Science New Course Proposals

Good morning,

I circulated the syllabi for the new courses listed in your e-mail (see below) to the faculty who could make comments. I did not receive any responses that raised questions or noted a significant overlap with any of our graduate courses. Please let me know if you have any questions.

I hope this is helpful and good luck with the remainder of the process toward approval of the courses.

Regards,
David

David M. Binninger, Ph.D.
Associate Professor and Associate Chair
Department of Biological Science
and
Center for Molecular Biology and Biotechnology
Florida Atlantic University
777 Glades Road
Boca Raton, FL 33431 USA
Phone: (561) 297-3323
FAX: (561) 297-2749

Begin forwarded message:

From: Julie Sivigny <jsivigny@fau.edu>
Date: March 15, 2010 1:38:27 PM EDT
To: 'David Binninger' <binninge@fau.edu>
Subject: Biomedical Science New Course Proposals

Dear Dr. Binninger,
Thank you for your assistance with this process. We are submitting a total of 10 new course proposals and 2 changes. All syllabi were forwarded to Dr. Murphey but in multiple batches so if you are missing any please let me know and I'll send to you immediately.

Biomedical Science New Course Proposals:
Host Defense & Inflammation – Dr. Yoshimi Shibata
Molecular Neuropsychopharmacology – Drs. Igor and Tao
Macromolecules and Human Disease – Drs. Brew and Li
Adult Neurogenesis – Dr. Jianning Wei
Molecular Basis of Disease & Therapy – Dr. Caputi

Tumor Immunology – Dr. Vijaya Iragavarapu
Molecular Genetics of the Cell – Dr. Kantorow
Molecular Basis of Human Cancer – Dr. Lu
Problem-based Immunology – Dr. Nouri-Shirazi
Fundamentals of General Pathology – Dr. Levitt

The integrated morphology courses will be processed as changes. We previously offered two 3-credit courses: Human Gross Anatomy – Trunk and Human Gross Anatomy – Extremities. We are changing these to 4-credit courses with the titles *Integrated Morphology I and II* taught by Drs. Willis Paull, Rainald Shmidt-Kastner and Deborah Cunningham.

The graduate college submission deadline is Wednesday March 17th at noon. I apologize for the lateness of some of these requests and appreciate your effort to assist us.

Please let me know if I can provide any additional information.

Thank you.

Julie

Julie A. Sivigny
Academic Program Specialist
Charles E. Schmidt College of Biomedical Science
Florida Atlantic University
(561) 297-2216

From: David Binninger [<mailto:binninge@fau.edu>]
Sent: Monday, March 15, 2010 11:16 AM
To: Julie Sivigny
Cc: Rodney Murphey; Jay Lyons
Subject: Fwd: Biomedical Science New Course Proposal - Macromolecules & Human Disease

Good morning Julie,

I forwarded the syllabi for the new courses to the appropriate faculty last week. It's my opinion that there will not be any issues or conflicts. So far, I have had only one response and that was that there were no concerns. Please confirm the full list of new courses and when you need a statement from me.

I hope this is helpful and please let me know if you have any questions.

Regards,
David

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