Graduate Programs—NEW COURSE PROPOSAL

DEPARTMENT NAME: Basic Science
COLLEGE OF: Charles E. Schmidt College of Biomedical Science

RECOMMENDED COURSE IDENTIFICATION:
PREFIX ___PCB____ COURSE NUMBER ___6239___ LAB CODE (L or C) ___
(TO OBTAIN A COURSE NUMBER, CONTACT ERUDOLPH@FAU.EDU)
COMPLETE COURSE TITLE: Tumor Immunology

CREDITS: 3

TEXTBOOK INFORMATION:

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

COURSE DESCRIPTION, NO MORE THAN 3 LINES: This course will explore the role of the immune system in cancer and the implications for the host. The effect of the tumor-host interactions on the developing neoplasm will be studied by considering related topics such as angiogenesis, MMPs, chemokines and metastasis. Additionally, we will explore the role of the immune system in defense against the tumors and the mechanism by which cancer cells escape the surveillance system.

PREREQUISITES W/MINIMUM GRADE: PCB 4233 or equivalent
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

Vijaya Iragavarapu-Charyulu, Ph.D., iragavar@fau.edu, tel: 297-3304

Faculty Contact, Email, Complete Phone Number

SIGNATURES

Approved by:

Date: 2/16-10

SUPPORTING MATERIALS

Date: 2/16-10

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

Written Consent—required from all departments affected.

Go to: http://graduate.fau.edu/ugpc/ todownload this form and guidelines to fill out the form.

Dean of the Graduate College:

Email this form and syllabus to diamond@fau.edu and eojrjo@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.
TUMOR IMMUNOLOGY

Course Number: PCB 6239
Pre-requisite: PCB 4233 or equivalent
Co-requisite: None
Course Coordinator: Vijaya Iragavarapu-Charyulu, Ph.D.
Instructor’s Office: 309 Biomedical Sciences Building
Instructor’s Phone Number: 561-297-3304
E-mail: iragavar@fau.edu
Office Hours: Mondays and Fridays: 10-12 noon. As I may be in the laboratory, it is advised that you make an appointment to see me. You can always e-mail me and I will respond as soon as possible.

TEXTBOOK:
(Recommended) Immunology (Sixth Edition) by Goldsby, Kindt, Osborne, and Kuby. This textbook or any other up-to-date immunology textbook is recommended for background reading, but is not required. In addition, assigned scientific journal articles for each lecture topic will be provided by the instructor. Additional material for lectures and presentations can be obtained by a Medline search of the assigned topics.

BIBLIOGRAPHY:
Textbook: (Recommended) Immunology (Sixth Edition) by Goldsby, Kindt, Osborne, and Kuby.

Journal Articles:


Deng, Shubai Liu and Zhihai Qin, Yu Lu, Wei Yang, Chuan Qin, Lianfeng Zhang, Jingjing.
DeRosa, David C., Paul J. Ryan, Angela Okragly, Derrick R. Witcher, Robert J. Benschop.  
Tumor-derived death receptor 6 modulates dendritic cell development.  

Dincen, Sean P., Kristi D. Lynn, Shane E. Holloway, Andrew F. Miller, James P. Sullivan,  
Vascular Endothelial Growth Factor Receptor 2 Mediates Macrophage Infiltration into  
Orthotopic Pancreatic Tumors in Mice.  
Available from: www.aacrjournals.org.  

The Novel Angiogenic Inhibitor, Angiocidin, Induces Differentiation of Monocytes to Macrophages.  
Available from: www.aacrjournals.org.  

Fridlender, Zvi G., George Buchlis, Veena Kapoor, Guanjun Cheng, Jing Sun, Sunil Singhal,  
Cecilia Crisanti, Liang-Chuan S. Wang, Daniel Heitjan, Linda A. Snyder, and Steven M. Albelda.  
CCL2 Blockade Augments Cancer Immunotherapy.  
Cancer Res; 70(1) January 1, 2010.  
Available from: www.aacrjournals.org.  

Genistein Modulates Immune Responses and Increases Host Resistance to B16F10 Tumor in Adult Female B6C3F1 Mice.  
Downloaded from jn.nutrition.org by on February 2, 2010.

Jacob, Jennifer B., Elena Quagliino, Olga Radkevich-Brown, Richard F. Jones, Marie P. Picchocki, Joyce D. Reyes, Amy Weise, Augusto Amici, and Wei-Zen Wei.  
Combining Human and Rat Sequences in Her-2 DNA Vaccines Blunts Immune Tolerance and Drives Antitumor Immunity.  
Cancer Res; 70(1) January 1, 2010.  
Available from: www.aacrjournals.org.  

Kilinc, Mehmet O., Tao Gu, Jamie L. Harden, Lauren P. Virtuoso and Nejat K. Egilmez.  
Central Role of Tumor-Associated CD8 + T Effector/Memory cells in Restoring Systemic  
Antitumor Immunity.  
J. Immunol. 2009;182;4217-4225 doi:10.4049/jimmunol.0802793  
Available from: http://www.jimmunol.org/cgi/content/full/182/7/4217.  

Interleukin-12-Deficiency Exacerbates Inflammatory Responses in UV-Irradiated Skin and Skin Tumors.  

Nobuto Yamamoto, Hirofumi Suyama, Nobuyuki Yamamoto and Naofumi Ushijima.  
Immunotherapy of metastatic breast cancer patients with vitamin D-binding protein-derived


**COURSE DESCRIPTION:**
This course will explore the role of the immune system in cancer and the implications for the host. The function of the immune system is to defend the organism against what has been termed “non-self” or in more modern terms “danger” associated with “nonself”. While this generally refers to invading microorganisms such as bacteria, fungi and viruses as well as eukaryotic parasites, it is also relevant for aberrant cellular structures that arise in the body during the process of neoplastic transformation leading to cancer. The immune system plays a pivotal role in defending against tumor cells in a process called “immune surveillance”.

The effect of the tumor-host interactions on the developing neoplasm will be studied by considering related topics such as angiogenesis, MMPs, chemokines and metastasis. Additionally, we will explore the role of the immune system in defense against the tumors and the mechanism by which cancer cells escape the surveillance system.

**PREREQUISITES: IMMUNOLOGY**
Prior knowledge of the basic concepts concerning the biology of cancer and immunology will be helpful to fully understand the assigned material. The first portion of this course will be lecture-based and latter portion will be a scientific journal article and class discussion-based. Although there is no required text book, a basic immunology such as Kuby’s Immunology or Janeway’s Immunology is strongly recommended.

**INSTRUCTIONAL OBJECTIVES:**
After this course the student will be able to:
1. Describe the cells involved in the immune response against a tumor.
2. Explain the effects of tumor growth on the immune system and conversely, the effects of immune system on tumor growth.
3. Define angiogenesis and how it affects tumor growth.
4. Describe how MMPs may contribute towards tumor metastasis or conversely inhibit tumor growth.
5. Describe how tolerance can be achieved.
6. Describe mechanisms by which tumors evade the immune system.
7. Explain how the immune system may be manipulated to achieve proper responses against the tumor.
8. Most importantly, read and understand scientific papers and present them to the class.

**SCHEDULE:**

<table>
<thead>
<tr>
<th>DATE</th>
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<tbody>
<tr>
<td>January 12</td>
<td>Introduction</td>
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<td>January 14</td>
<td>Cancer Induction</td>
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<td>January 21</td>
<td>Review of Immune Response cont.</td>
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<td>January 26</td>
<td>Immunosurveillance &amp; therapy</td>
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<td>January 28</td>
<td>Inflammation and cancer</td>
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<td>February 2</td>
<td>Cytokines/chemokines</td>
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<td>Angiogenesis</td>
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<td>February 9</td>
<td>MMPs &amp; metastasis</td>
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<td>February 11</td>
<td>The role of macrophages in tumor immunity</td>
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<td>February 16</td>
<td>Regulatory T cells &amp; suppressor cells (myeloid)</td>
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<td>February 18</td>
<td>Exam 1</td>
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<td>February 23</td>
<td>The role of dendritic cells in tumor immunity: Antigen presentation</td>
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<td>February 25</td>
<td>The role of death receptors and apoptosis in cancer</td>
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<td>March 2</td>
<td>Presentation of Journal articles – Dr. Iragavarapu</td>
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<td>March 8-14</td>
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<td>March 16</td>
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<td>April 20</td>
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<td>April 29</td>
<td>Exam 3</td>
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Papers for discussion, as well as a review article for background will be assigned one week in advance by the instructor.
GRADING POLICY:
Final Grade will be based on 3 exams (30%), quizzes (15%) journal article presentations (30%), submission of test questions (10%), & class participation in discussions (15%).
Two to three multiple choice type of questions & two to three short answer questions are required to be submitted by the student on the subject of their presentation. These questions form the basis for part of the exams/quizzes.

GRADING CRITERIA:
90-100=A
80-89 = B
70-79 = C
60-69 = D
< = F

ATTENDANCE POLICY:
Attendance is absolutely required as this is a discussion-based class. However, if you are unable to attend due an emergency situation that must be appropriately documented, you can make up the missed class by writing a 4-5 page report of the assigned papers. You are allowed to miss a total of 2 class periods before your grade drops by a letter grade for each of the missed classes unless excused.
Date to withdraw (Drop/Add) without consequences: January 15th.

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. Isgor and Tao
Macromolecules and Human Disease – Drs. Brew and Li
Adult Neurogenesis – Dr. Jianning Wei
Molecular Basis of Disease & Therapy – Dr. Caputi

3/17/2010
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

David M. Binninger, Ph.D.  
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3/17/2010