

FLORIDA ATLANTIC UNIVERSITY™

Graduate Programs—NEW COURSE PROPOSAL¹

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

DEPARTMENT: BIOMEDICAL SCIENCE

COLLEGE: CHARLES E. SCHMIDT COLLEGE OF MEDICINE

RECOMMENDED COURSE IDENTIFICATION:

PREFIX PCB COURSE NUMBER 6063 LAB CODE (L or C) No Lab

(TO OBTAIN A COURSE NUMBER, CONTACT [MJENNING@FAU.EDU](mailto:mjennin@fau.edu))

COMPLETE COURSE TITLE: ADVANCED MOLECULAR AND CELLULAR BIOLOGY

EFFECTIVE DATE

(first term course will be offered)

SPRING 2015

CREDITS²: 3

TEXTBOOK INFORMATION: MOLECULAR BIOLOGY OF THE CELL, FIFTH EDITION: THE PROBLEMS BOOK
 BY BRUCE ALBERTS, ALEXANDER JOHNSON, JULIAN LEWIS, MARTIN RAFF, KEITH ROBERTS, PETER WALKER

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

COURSE DESCRIPTION, NO MORE THAN THREE LINES: MCB is a course designed to provide students with a basic background and advanced topics in cell and molecular biology. Emphasis will be placed on human physiology and disease.

PREREQUISITES*:

ORGANIC CHEMISTRY 1
 MOLECULAR AND CELL BIOLOGY
 BIOCHEMISTRY 1

COREQUISITES*:

REGISTRATION CONTROLS (MAJOR, COLLEGE, LEVEL)*:

INSTRUCTOR PERMISSIONS REQUIRED

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

MINIMUM QUALIFICATIONS NEEDED TO TEACH THIS COURSE:

1. MEMBER OF THE GRADUATE FACULTY OF FAU
2. HAS A TERMINAL DEGREE IN THE SUBJECT AREA (OR CLOSELY RELATED FIELD)

Faculty contact, email and complete phone number:

Dr. Andrew Oleinikov
 (561) 297- 4424
aoleinikov@fau.edu

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

Charles E. Schmidt College of Science (see attached approval letter)

Approved by:

Department Chair: _____

College Curriculum Chair: _____

College Dean: _____

UGPC Chair: _____

Graduate College Dean: _____

UFS President: _____

Provost: _____

Date:

10/30/14

11/18/14 29/2014

10/29/14

11/15/14 10/12/14

11/19/14

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.

FLORIDA STATE UNIVERSITY

Graduate Program in Environmental Science

UNIVERSITY OF FLORIDA
GRADUATE SCHOOL
100 UNIVERSITY BLVD
GAINESVILLE, FL 32611
813/392-1000

DEPARTMENT OF ENVIRONMENTAL SCIENCE AND FORESTRY

THESIS TITLE: *Environmental Impacts of Land Use Change in the Florida Panhandle*

Author: *John Doe*

Advisor: *Dr. Jane Smith*

Committee: *Dr. Jane Smith, Dr. John Doe, Dr. Jane Smith*

Date: *10/30/14*

Signature: *[Handwritten Signature]*

ADVANCED MOLECULAR AND CELLULAR BIOLOGY-SPRING 2015

Course # PCB 6063 – 3 credits
Course Registration: Instructor Permission
Course hour: M W 11- 12:20
Place: BC 130
Course Pre-requisites: CHM 2210- Organic Chemistry 1
PCB 4023- Molecular and Cell Biology
BCH 3033- Biochemistry

Course Instructor: Dr. Andrew Oleinikov
Office 310, Lab 305
297-4424 office /297-0201 lab
Office hours-Fridays 2-4:30 or by appointment

Required Textbook:

Molecular Biology of the Cell, Fifth Edition: The Problems Book

By Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff,
Keith Roberts, Peter Walter

Course Description:

MCB is a course designed to provide students with a basic background and advanced topics in cell and molecular biology. Emphasis will be placed on human physiology and disease. Although some review level introductory information will be presented, this is a graduate course and it is required that students complete undergraduate Organic Chemistry I, Molecular and Cell Biology, and Biochemistry I as prerequisites for this course.

Course Objectives:

1. Understanding physical-chemical basis of biological processes and cell functioning
2. Understanding effects of evolutionary forces on shaping molecular and cellular processes
3. Developing ability to work with current scientific literature, to simplify complex problems to basic components, and to relate knowledge of molecular biological processes to pathological states

Course Schedule:

January 2015

Monday 5th: Intro to the Course
Wednesday 7th: Cells, Genes, and Information
Monday 12th: DNA Structure and Function
Wednesday 15th: Cellular Genomes and Nuclear Structure

Monday 19th: Cellular and DNA Replication
Wednesday 21st: DNA Repair and Mutagenesis
Monday 26th: RNA Synthesis
Wednesday 28th: RNA processing

February 2015

Monday 2nd: Regulation of Prokaryotic Gene Expression
Wednesday 4th: Regulation of Eukaryotic Gene Expression
Monday 9th: Exam Preparation Day
Wednesday 11th: In Class Review

February 16-20: MIDTERM EXAM 1

Monday 23rd: Technology I
Wednesday 25th: Technology II

March 2015

Monday 2nd: SPRING BREAK
Wednesday 4th: SPRING BREAK
Monday 9th: Synthesis and Transport of Proteins
Wednesday 11th: Cell Membrane Structure and Function
Monday 16th: Cell Organization and Function
Wednesday 18th: Signal Transduction
Monday 23rd: Cell Biology of Cancer
Wednesday 25th: Cell Biology of Immunity
Monday 30th: Cell Biology of Malaria

April 2015

Wednesday 1st: STUDENT PRESENTATIONS
Monday 6th: STUDENT PRESENTATIONS
Wednesday 8th: STUDENT PRESENTATIONS
Monday 13th: STUDENT PRESENTATIONS
Wednesday 15th: Exam Preparation Day
Monday 20th: In Class Review
Wednesday 22nd: In Class Review

APRIL 23-29: FINAL EXAM

Grading:

Student presentation: 10%
Midterm Exam: 40%
Final Exams: 50%

Supplemental Readings: Additional Research articles will be used in class as well as material from Dr. Pollack's book "Cells, gels, and the engines of life".

Course Policies: Makeup tests and late work are not allowed unless an approved physical problem or schedule conflicting with University-approved activities

Classroom 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.

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.

Advanced Molecular and Cell Biology: Andrew Oleinikov, Ph.D.

Advanced Molecular and Cell Biology is a new required core course for the MS in Biomedical Science curriculum of the Schmidt College of Medicine. It is not related to the Biology Departments Molecular and Cell Biology course (PCB 4023) or Integrative Biology 2 course (BSC 6391) since these are general introductory courses that do not specifically focus on human diseases and not appropriate for our programmatic requirements. The COM Advanced Molecular and Cell Biology Course has completely different learning objectives than other molecular and cell biology courses in biology or at FAU since it focuses on understanding the physical-chemical basis of biological processes and cell functioning, their relevance to pathological states, and potential therapies for specific human diseases. The instructor is uniquely qualified to teach this course having an M.S. and a Ph.D. specifically in Biophysics and Biochemistry & Molecular Biology, respectively, and a long track record of NIH funded research and published scholarship specific for human disease mechanisms. It is important to the COM that the core courses required for our program are taught in-house to optimize the goals, content and academic outcomes required by our own program. Thanks in advance for your help getting this course evaluated and listed on time.

Subject: RE: Telephone Conference- New Course Proposal
Date: Monday, October 13, 2014 at 10:34:15 AM Eastern Daylight Time
From: William Brooks
To: Carolina Clark, Timothy Theisen, Gregory Macleod, Tanja Godenschwege, Xing-hai Zhang
CC: Michelle Cavallo, Marc Kantorow, Andrew Oleinikov, Rodney Murphey, Kenneth Dawson Scully

Hello Everyone,

I'm happy to report that I have heard back from all interested Biology faculty and that they all support the new Biomed courses, based on the feedback provided by Biomed. Thus, **Biology officially approves these courses for consideration by the University Graduate Programs Committee.** If there are any questions, please contact me directly.

Best Regards,
Randy

Professor of Biology
Chair, FAU Biology Undergraduate & MS Graduate Program Committees
Boca Raton, FL 33431, Phone: 561-297-3888, Email: wbrooks@fau.edu

<http://www.science.fau.edu/biology/faculty/wbrooks.html>

<http://www.science.fau.edu/biology/masters/masters.html>

<http://www.science.fau.edu/biology/masters/masters-faqs.html>

From: William Brooks
Sent: Wednesday, October 08, 2014 12:20 PM
To: Carolina Clark; Timothy Theisen; Gregory Madeod; Tanja Godenschwege; Xing-hai Zhang
Cc: Michelle Cavallo; Marc Kantorow; Andrew Oleinikov; Rodney Murphey; Kenneth Dawson Scully
Subject: RE: Telephone Conference- New Course Proposal

Dear Molecular Biology Faculty (Tim, Greg, Tanja and Xing-hai),

Please forward your comments directly to me (wbrooks@fau.edu) no later than Friday (Oct. 10) so that we can consolidate the

Subject: The Laboratory Introduction - New Course Proposal
Date: Monday, October 20, 2014 at 10:10 AM
From: William Brooks
To: [Redacted]
Cc: [Redacted]

Hi [Redacted]

I'm happy to report that I have found support from all interested Biology faculty and that they all support the new 5-credit course based on the textbook provided by [Redacted]. Thus, Biology official approval is in progress for consideration by the University Graduate Programs Committee. If there are any questions, please contact me directly.

Best regards,
William

William Brooks
Department of Biology
University of [Redacted]

From: William Brooks
Date: Wednesday, October 22, 2014 at 10:30 AM
To: [Redacted]
Cc: [Redacted]
Subject: The Laboratory Introduction - New Course Proposal

Dear Molecular Biology Faculty (Jim, Greg, Janis and Xing-hai),

Please forward your comments directly to me (wbrooks@[Redacted]) no later than Friday (Oct. 10) so that we can consolidate the

responses and forward them to Biomed expeditiously.

Regards,
Randy

Professor of Biology
Chair, FAU Biology Undergraduate & MS Graduate Program Committees
Boca Raton, FL 33431, Phone: 561-297-3888, Email: wbrooks@fau.edu

<http://www.science.fau.edu/biology/faculty/wbrooks.html>

<http://www.science.fau.edu/biology/masters/masters.html>

<http://www.science.fau.edu/biology/masters/masters-foss.html>

From: Carolina Clark
Sent: Tuesday, October 07, 2014 11:03 AM
To: Timothy Theisen; Gregory Macleod; Tanja Godenschwege; Xing-hai Zhang; William Brooks
Cc: Michelle Cavallo; Marc Kantorow; Andrew Oleinikov; Carolina Clark
Subject: Re: Telephone Conference- New Course Proposal

Good Morning Faculty,

It seems we are still missing a few participant's availability and are having difficulties finding a convenient time for all. In order to expedite this process, we have decided to submit to you all the answers to the questions you had originally asked below. Please review the material and let us know if you have any further questions and concerns that we can then address through telephone conference if needed.

Thanking you in advance

Sincerely,

Carolina Clark
Graduate Programs Coordinator
Charles E. Schmidt College of Medicine
777 Glades Road, Rm. 206-A
Boca Raton, FL, 33431-0991
561-297-4549
clarkc@fau.edu
www.med.fau.edu

From: Carolina Clark <clarkc@fau.edu>
Date: Thursday, October 2, 2014 at 3:37 PM

To: Timothy Theisen <TTHEISEN@fau.edu>, Gregory Macleod <macleodg@fau.edu>, Tanja Godenschwege <godensch@fau.edu>, Xing-hai Zhang <xhzhang@fau.edu>, William Brooks <wbrooks@fau.edu>
Cc: Carolina Clark <clarkc@fau.edu>, Michelle Cavallo <MCAVALLO@fau.edu>, Marc Kantorow <mkantoro@fau.edu>, Andrew Oleinikov <aoleinikov@fau.edu>
Subject: Telephone Conference- New Course Proposal

Good afternoon all,

As you are aware, our Biomedical Science Graduate Program is trying to submit new course proposals to the UGP Committee which require Biology approval. We have received approval for 3 of our courses which were forwarded to the committee yesterday, but were instructed to provide additional clarification for the 4th course "Advanced Molecular and Cellular Biology". As listed on the email trace below, you have all expressed some concerns and raised questions about our graduate course which is why we are reaching out to you in hopes of addressing these issues and providing you with a clearer explanation as to how our graduate course differs from your undergraduate molecular course.

In order to discuss these issues and expedite the process for this course approval, Dr. Kantorow, Program Director, and Dr. Oleinikov, course instructor, would greatly appreciate your willingness to join them for a telephone conference sometime in the next 2 weeks. I have provided below link to Doodle Poll which will allow you to list your availability. Please be sure to include your telephone number as well, as a follow up email with instructions on how to connect to the telephone webinar will be sent after dates and times have been selected for the meeting.

I would like to invite you to the Doodle poll "Telephone Conference- New Course Proposal."

Please follow the link in order to participate in the poll:
<https://doodle.com/twohe4eq5qbnava7>

Thanking you all in advance for your assistance and cooperation in helping us resolve this tedious task.

Sincerely,

Carolina Clark
Graduate Programs Coordinator
Charles E. Schmidt College of Medicine
777 Glades Road, Rm. 206-A
Boca Raton, FL, 33431-0991
[561-297-4549](tel:561-297-4549)
clarkc@fau.edu
www.med.fau.edu

From: Michelle Cavallo <MCAVALLO@fau.edu>
Date: Monday, September 29, 2014 at 1:15 PM
To: Keith Brew <KBREW@fau.edu>
Cc: William Brooks <wbrooks@fau.edu>, Rodney Murphey <RMURPHEY@fau.edu>, marc kantorow <mkantoro@fau.edu>, John Newcomer <jnewcomer@fau.edu>, David Bjorkman <dbjorkm1@health.fau.edu>, John Baldwin <jbaldwin@fau.edu>, Colin Hughes <Chughe@fau.edu>, David Binninger <binninge@fau.edu>, Xing-hai Zhang <xhzhang@fau.edu>, Kailiang Jia <kjia@fau.edu>, John Nambu <jnambu@fau.edu>, Timothy Theisen <TTHEISEN@fau.edu>, Diane Baronas-Lowell <dlowell@fau.edu>, Tanja Godenschwege <godensch@fau.edu>, Gregory Macleod <macleodg@fau.edu>, "M.J. Saunders" <misaund11@fau.edu>, "ken.dawson-scully@fau.edu" <ken.dawson-scully@fau.edu>, Brenda Claiborne <bclaibor@fau.edu>, James Kumi-Diaka <jdiaka@fau.edu>, James Hartmann

<jhartman@fau.edu>

Subject: Biology Department Feedback on COM New Course Proposals

Dear Dr. Brew,

Thank you for sending College of Medicine's new course proposals for review by the Biology Department. Please see the below itemized feedback provided by our faculty who teach related courses.

Sincerely,

Randy Brooks,
Professor and Biology Graduate Program Committee Chair

1. Human Genetics

a. Sent to:

- i. **John Baldwin** – no response
- ii. **Colin Hughes** – no response
- iii. **David Binnering** – While a few topics overlap with courses in our department, it is not sufficient to recommend that the *Human Genetics* course not be submitted. This is especially true because the proposed course is a graduate level course. I think it will be an excellent course for a number of our graduate students. Please let me know if you have questions or need a more detailed explanation.
- iv. **Xing-hai Zhang** – response: Regarding college of medicine's new courses, I don't see any conflict for "Human genetics", which focuses on human diseases.
- v. **Kailiang Jia** – no response
- vi. **John Nambu** – no response
- vii. **Timothy Theisen** – no response
- viii. **Diane Baronas-Lowell** – response: Please give my vote to whatever David votes.
- ix. **Tanja Godenschwege** – no response
- x. **Gregory Macleod** – no response

2. Advanced Molecular and Cellular Biology

a. Sent to:

- i. **John Baldwin** – no response
- ii. **Colin Hughes** – no response
- iii. **David Binnering** – no response
- iv. **Xing-hai Zhang** - response: Regarding college of medicine's new courses, I don't see any conflict for "Human genetics", which focuses on human diseases. But for "Advanced Mol, Cell Biology", its content is very similar to what we teach in "Genetics" and will be even more similar to our proposed "Molecular Genetics" (per Colin Hugues). It would be OK if we don't offer graduate level Genetics, Molecular Genetics or Mol Cell Biology courses, only undergrad courses.
- v. **Kailiang Jia** – no response
- vi. **John Nambu** – no response
- vii. **Timothy Theisen** – response: I have reviewed that attached document describing the proposed new course, *Advanced Cellular and Molecular Biology*, and have the following comments: 1) Their proposed course as described will be different than our undergraduate Molec and Cell course in that it will focus on human physiology, human disease, and potential therapies, topics which are not covered in the undergraduate biology course. 2) Their characterization of our undergraduate Molec and Cell course as a "general introductory course" is inaccurate. We also focus on understanding the physical-chemical

basis of biological processes and cell function and the role of evolutionary processes in shaping these interactions. However, we only barely relate these to human pathology or potential therapies. 3) We only barely discuss cancers and do not cover immunology at all, so these are clear points of difference. 4) I am a little curious as to why the syllabus does not reflect these different topics; as it currently reads it is pretty much identical to the undergrad Molec and Cell course, except for the time devoted to student presentations. In conclusion, because the course is designed to cover Molec and Cell with an emphasis on its role in human physiology and disease and possible therapies, I feel that it is sufficiently different than the course currently offered by the biology department. If it is, in fact meant to be an advanced course then I would think an undergraduate Molec and Cell course (taken at FAU or wherever their undergrad degree was earned) would be a mandatory pre-req, not merely a suggestion. Otherwise the course will end up spending a lot of time on review.

- viii. **Diane Baronas-Lowell** – no response
- ix. **Tanja Godenschwege** – response: Not only significantly but totally, with mine and Tim Theissens MCB course as we even use the same textbook. However ours is for undergraduates but theirs is supposed to be for graduates ? Not sure if that makes any difference??
- x. **Gregory Macleod** – response: Seems like their Cell Bio course would overlap significantly with your existing Mol Cell Bio course
- xi. **M.J. Saunders** – no response

3. Neurobiology of Addiction

- a. Sent to:
 - i. **Rodney Murphey**
 - ii. **Tanja Godenschwege** – no response
 - iii. **Ken Dawson-Scully** - I don't have an issues with the proposed course Neurobiology of Addiction. On the contrary I think it will be an excellent addition to the Neuroscience curriculum at FAU.
 - iv. **Brenda Claiborne** – This course looks fine to me.

4. Immunology Seminar

- a. **James Kumi-Diaka** – response: I have just reviewed the College of Medicine's new course proposal in immunology. This course is technically an Immunology Seminar Course at the 5000 level. One would expect a prerequisite for this Seminar; but that is up to the College of Medicine I do not see any conflict with our immunology course – PCB 4233; which is a full upper level course. I suggest they may go ahead and offer the seminar: MY OPINION
- b. **James Hartmann** – response: The biomed seminar in Immunology appears to be different from any Immunology course offerings in biology. I believe this is a formal course to replace the informal seminar series that I have attended in the past.

Michelle Cavallo
Administrative Assistant & Graduate Coordinator
Department of Biological Sciences
Florida Atlantic University
777 Glades Road
Boca Raton, FL 33431
PH: 561-297-0384

Response to Biology faculty notes about ACMB course

Xing-hai Zhang - response: Regarding college of medicine's new courses, I don't see any conflict for "Human genetics", which focuses on human diseases. But for "Advanced Mol, Cell Biology", its content is very similar to what we teach in "Genetics" and will be even more similar to our proposed "Molecular Genetics" (per Colin Hugues). It would be OK if we don't offer graduate level Genetics, Molecular Genetics or Mol Cell Biology courses, only undergrad courses. – All Mol and Cell Bio courses are similar in their topics, the difference is in details. Our details will include emphasis on relevance of the studied topics/mechanisms/pathways in molecular and cell biology to pathological states, and current and potential therapies for human diseases. This is graduate course that is a part of our graduate program at COM and is required for all graduate students.

Timothy Theisen – response: I have reviewed that attached document describing the proposed new course, Advanced Cellular and Molecular Biology, and have the following comments:

- 1) Their proposed course as described will be different than our undergraduate Molec and Cell course in that it will focus on human physiology, human disease, and potential therapies, topics which are not covered in the undergraduate biology course. - OK
- 2) Their characterization of our undergraduate Molec and Cell course as a "general introductory course" is inaccurate. We also focus on understanding the physical-chemical basis of biological processes and cell function and the role of evolutionary processes in shaping these interactions. However, we only barely relate these to human pathology or potential therapies. – we removed the word "general"
- 3) We only barely discuss cancers and do not cover immunology at all, so these are clear points of difference. - OK
- 4) I am a little curious as to why the syllabus does not reflect these different topics; as it currently reads it is pretty much identical to the undergrad Molec and Cell course, except for the time devoted to student presentations. – it is reflected in the schedule: cancer, signal transduction, and immunology are all there. Does it require an additional sentence in the opening paragraph? We also underscore the importance of relating molecular and cellular processes to pathology and therapy.

In conclusion, because the course is designed to cover Molec and Cell with an emphasis on its role in human physiology and disease and possible therapies, I feel that it is sufficiently different than the course currently offered by the biology department. If it is, in fact meant to be an advanced course then I would think an undergraduate Molec and Cell course (taken at FAU or wherever their undergrad degree was earned) would be a mandatory pre-req, not merely a suggestion. Otherwise the course will end up spending a lot of time on review. – we changed "it is strongly recommended that students complete undergraduate Organic Chemistry, Cell Biology, and Biochemistry as prerequisites for this course" to "it is required that students complete undergraduate Organic Chemistry, Molecular and Cell Biology, and Biochemistry as prerequisites for this course".

Tanja Godenschwege – response: Not only significantly but totally, with mine and Tim Theissens MCB course as we even use the same textbook. – Tim thinks that our course is different from yours (see above). Using the same book is common for different courses. Nobody covers everything in this enormously large book during 18-20 lectures. We will focus on some details that are different from details in your lectures.

However ours is for undergraduates but theirs is supposed to be for graduates? Not sure if that makes any difference?? – Our details will include emphasis on relevance of the studied

... response regarding college of medicine's new course I don't see any conflict for
"Human Genetics", which focuses on an non disease. But for "Advanced Cell Biology", it is more
very similar to what we teach in "Genetics", and will be even more similar to our proposed "Molecular
Genetics" (see below). It would be OK if we don't offer separate for Molecular Biology
Genetics or Molecular Biology courses. Only integrated course - At least Cell Bio courses are not
to them. The difference is in the fact that the Cell Bio course includes an overview of the subject
of genetics, and the AP/IB course is more focused on cell biology, and genetics, and molecular
biology. It is not a matter of degree, but a matter of content. The AP/IB course is a more
COB and a separate for all other students.

... have covered that in a different part of the program
course, Advanced Cell and Molecular Biology, and have the following comments:

- (1) This proposed course is described and will be different than our integrated AP/IB and Cell Bio courses in that it will focus on human physiology, human disease, and potential therapeutic topics which are not covered in the integrated biology course.
- (2) The description of the proposed course is "Genetics and Molecular Biology" and the description of the integrated course is "Molecular Biology and Cell Bio". We do not see an overlap in the topics of biological processes and the integration of the two courses. However, we do see that the integrated course covers a range of topics in human biology, and we do not see any overlap in the topics of the proposed course.
- (3) We only have one course in the integrated biology of all, so there are these points of difference.

(4) This is a little curious as to why the syllabus does not reflect these different topics as it currently reads
it is very similar to the integrated AP/IB and Cell Bio courses, and all courses are focused on the same topics of
student requirements. It is not clear in the syllabus what the integrated course and the proposed course
will cover. Both courses are additional courses in the integrated biology. We do not see any overlap in
the topics of the integrated course and the proposed course.

In conclusion, because the course is designed to be a separate course and Cell Bio course, we do not
see any overlap in the topics of the integrated course and the proposed course. The integrated course
course currently offered by the biology department. It is not clear in the syllabus what the integrated course
will cover. Both courses are additional courses in the integrated biology. We do not see any overlap in
the topics of the integrated course and the proposed course. The integrated course is designed to be a
separate course and Cell Bio course, and we do not see any overlap in the topics of the integrated course
and the proposed course. The integrated course is designed to be a separate course and Cell Bio course,
and we do not see any overlap in the topics of the integrated course and the proposed course. The
integrated course is designed to be a separate course and Cell Bio course, and we do not see any overlap
in the topics of the integrated course and the proposed course.

... response that only slightly, but I agree with the fact that the course is
... we even use the same language. It is not clear in the syllabus what the integrated course
will cover. Both courses are additional courses in the integrated biology. We do not see any overlap in
the topics of the integrated course and the proposed course. The integrated course is designed to be a
separate course and Cell Bio course, and we do not see any overlap in the topics of the integrated course
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integrated course is designed to be a separate course and Cell Bio course, and we do not see any overlap
in the topics of the integrated course and the proposed course.

topics/mechanisms/pathways in molecular and cell biology to pathological states, and current and potential therapies for human diseases. This is graduate course that is a part of our graduate program at COM and is required for all graduate students.

Gregory Macleod – response: Seems like their Cell Bio course would overlap significantly with your existing Mol Cell Bio course – All Cell Bio courses overlap in their topics, the difference is in details. Our details will include emphasis on relevance of the studied topics/mechanisms/pathways in molecular and cell biology to pathological states, and current and potential therapies for human diseases.