

## BIOLOGY 440-102: CELL BIOLOGY OF DISEASE - HONORS

<b>INSTRUCTOR:</b>	Darshan J. Desai, PhD	<b>PHONE:</b>	973-642-7084 ☎ Skype ID: njitpha
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<b>CLASS MEETS:</b>	T, R: 5:45pm – 7:05pm ▪ CKB 326	<b>COURSE WEBSITE:</b>	<a href="http://moodle.njit.edu/">http://moodle.njit.edu/</a>
<b>OFFICE HOURS:</b>	M: 11am-12pm & W: 1130am-2pm <b>Students must make an appointment to meet!</b>		

### DESCRIPTION:

This course will briefly review the normal physiology of mammals and humans and will then extensively explore the basis of many human diseases at the cellular level. The goal is to understand how alterations in normal functions of cells affect the function of the whole system by reviewing current research in the field of cell biology abnormalities.

**PREREQUISITES:** Mammalian Physiology (BIOL 340 or R120:340) and Cell Bio (R120:355) or Molecular Bio (R120:356).

### TEXTBOOKS:

- ⊗ Medical Cell Biology; 3rd Ed., by Steven R. Goodman, Elsevier/Academic Press © 2008, ISBN: 978-0-12-370458-0.  
**AND OPTIONAL TEXT (OR EARLIER EDITION)**
- ⊗ Biochemistry; 6<sup>th</sup> or 7<sup>th</sup> Edition, by Jeremy M Berg, John Tymoczko, and Lubert Stryer, W. H. Freeman & Company © 2012, ISBN: 978-1-4292-2936-4.

### GOALS & OBJECTIVES:

- ⊗ This is a seminar style course where peer reviewed journals articles and the latest scientific advances will be identified, reviewed and assessed as a class.
- ⊗ The instructor will only provide background and demonstration in the early portion of the Spring 2015 semester as indicated by the dates above.
- ⊗ Only if necessary, will the course instructor add to the course materials – once the background/demonstration period is over, students will be solely be responsible for course progression.
- ⊗ Students are required to utilize various medical, scientific and technology databases (PubMed, Google Scholar, Web of Science) to find articles.
- ⊗ Students are required to organize presentations view PowerPoint (only) to present their finding to the class- the goal of which is to learn and master how to present these materials to scientific peers and professionals.
- ⊗ Students will generate mini-reviews, as discussed below and based exclusively on the ALL materials used in their team or individual presentations.
- ⊗ The course will be administered via MOODLE – you must have access to NJIT MOODLE.

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**COURSE OUTLINE:**

LECTURE / DATE		DAY	LECTURE TOPIC	NOTES
1	Jan 20	T	Intro to the Course/Objectives	
2	Jan 22	R	Intro Cell Biology	
3	Jan 27	T	Intro Molecular Biology	
4	Jan 29	R	Intro to Pathology	
5	Feb 3	T	Developmental Diseases 1	
6	Feb 5	R	Developmental Diseases 2	
7	Feb 10	T	Genetic Disease 1	
8	Feb 12	R	Genetic Disease 2	
9	Feb 17	T	Diabetes 1	
10	Feb 19	R	Diabetes 2	
11	Feb 24	T	Liver Disease 1	
12	Feb 26	R	Liver Disease 2	
13	Mar 3	T	TBA	
14	Mar 5	R	TBA	
15	Mar 10	T	Immunological Disease 1	
16	Mar 12	R	Immunological Disease 2	
▶	Mar 17, 19	▶	<b>MARCH 16-20: SPRING BREAK – NO CLASSES</b>	
17	Mar 24	T	Student Disease A-1 TBD	
18	Mar 26	R	Student Disease A-2 TBD	
19	Mar 31	T	Student Disease B-1 TBD	
20	Apr 2	R	Student Disease B-2 TBD	
21	Apr 7	T	Student Disease C-1 TBD	
22	Apr 9	R	Student Disease C-2 TBD	
23	April 14	T	Student Disease D-1 TBD	
24	Apr 16	R	Student Disease D-2 TBD	
25	Apr 21	T	Large Group Disease A-1 TBD	
26	Apr 23	R	Large Group Disease A-2 TBD	
27	April 28	T	Large Group Disease B-1 TBD	
28	April 30	R	Large Group Disease B-2 TBD	
<b>FINALS</b>		<b>FINAL EXAM WEEK: MAY 8-14, 2015</b>		

**OFFICE HOURS:** Office hours are listed above. Students must make an appointment to meet! With regards to responding to email correspondence, I will try to reply to emails within 24-48 hrs after receiving them. Please include the course number and name in subject line of email (*i.e. BIOL 440 - I am dying*). If you do not receive a reply from me by then, please email me again including the original email sent!

**HONOR CODE:** This course will strictly adhere to the [Academic Integrity Code](#)!!

**NOTE:** Plagiarism is defined as the act of using another person's words or ideas without giving credit to that person! Even if you cite the work, but copy and paste it – this is STILL considered plagiarism!

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### GRADING:

- ⊗ Groups will be graded by both students and the instructor.
- ⊗ The Instructor will have 45% of value (*power points and 3 written mini-review works*), with student's evaluation being 15% of complete grade. **Late submission of the critique will result in an automatic 25% reduction in the student's grade.**
- ⊗ A cumulative final will be at the end of the semester during finals period 10%.
- ⊗ The major final paper is 30% (15-20pages).
- ⊗ Students will be assigned a unique and anonymous identifier (*known only to the instructor*) to allow for objective and unrestrictive assessment of the presentation and work effort of seminar speaker and teammates. The critiques will be submitted within **24hrs** of each presentation and will be used towards their individual course grade. **Late submission of the critique will result in an automatic 25% reduction in the student's grade.**
- ⊗ Two (2) weeks after the student's presentation, student speakers will have the anonymous critiques from the class and the instructor to allow for use in improvement of successive preparation and presentation—this will be posted on Moodle.

GRADE SCALE:	
A	90 – 100%
B+	85 – 89%
B	80 – 84%
C+	75 – 79%
C	70 – 75%
D	60 – 69%
F	0 – 59%

### PRESENTATION:

- ⊗ Teams of 2 (or 3, if not individuals) will prepare the power points with a lecture length of 45mins, followed by discussion time by audience and instructor.
- ⊗ Teams or student presenters will have all PDFs of the journal articles and reference materials used to generate the seminar **1 week** prior to the date of the seminar for upload to Moodle and proper review by fellow students and instructor, as well as a 1 page summary paper the student audience to utilize- **Failure to provide materials on schedule will immediately result in a full letter grade reduction. NO EXCEPTIONS!**
- ⊗ Presentations should have a history of the pathology, epidemiology of the pathology, history of the disease, clinical diagnostic/biochemical characterization of the pathology, a detailed biochemical/molecular/biological mechanism of the pathology, current therapeutic options and an emergent therapy.
- ⊗ As a Writing Intensive/Honors Course, student presenters will have to submit a **5-10 page mini-review** of the topic covered. This is done individually & independently by each student, and is due **1 week** post the student's presentation (**4 writing assignments in total**). **Late submission will not be accepted under any circumstances!!**
- ⊗ First drafts of these papers will be submitted to Turnitin.com via MOODLE for review, edit recommendations, and academic integrity validation. **Any report that has over 25% or higher similarity reports will be characterized as plagiarized and will result in unconditional failure of the assignment, followed by immediate reporting of the incident to Department, Chairman and Dean.** Once students receive the corrected 1st drafts from the instructor, they will re-submit the second edited draft for second review and comments after 1 week, and after a 2nd review, where student will receive further comments and edits, students will resubmit a final version after 1 week to be graded.
- ⊗ Each student will be assigned a **Final major 15-20 page research paper** assignment on January 31st. This paper will be in a professional "review" format to be clarified by the instructor. This assignment will be **due on April 30, 2015.**