Advanced Readings in Biology
The University of Toledo
Department of Biological Sciences, College of Natural Sciences and Mathematics
BIOL6990-021, CRN: 21254
2 credit hours

Instructor: Dr. Malathi Krishnamurthy
Office Hours: Monday 4-5pm or by appointment
Office Location: WO3213B
Office Phone: 419-530-2135
Email: Malathi.Krishnamurthy.utoledo.edu

Term: Spring 2016
Class Location: (WO3213)
Class Times: (to be determined)
Course Website: https://blackboard.utdl.edu

COURSE/CATALOG DESCRIPTION
Faculty directed readings or projects in a specific area of Biology.

COURSE OVERVIEW
This is a literature review course that will cover new research into host responses during viral infections. In the first half, we will focus on pathogen recognition, role of cytosolic and toll like receptors and molecular basis of pattern recognition. In the second half, we will discuss specific roles of RNA signaling pathways with emphasis on OAS, RNase L and other dsRNA sensing pathways. Some recent advances on regulation of RNase L activity will also be covered during this period.

In the beginning of the course, the instructor will give an overview of the field and then present the first two papers. Afterwards, each week students will present 2 papers following a brief introduction by the instructor. For the most part, students can choose papers from the attached literature list. However, at the end of the course, each student has to on his/her own pick one paper from academic journals that should represent thorough studies and have a significant impact on the field. There is a mandatory question/answer time following each presentation.

STUDENT LEARNING OUTCOMES
Upon completion of this course, students will be able to:
1. Be familiar with the key classical literature and recent advances in the specific field.
2. Read, understand and interpret a primary research article.
3. Understand the main techniques and tools utilized by researchers
4. Understand and interpret scientific graphs and figures
5. Summarize and write a summary of several primary articles into a review article
6. Prepare, design and present a talk based on scientific literature
7. Gain more ideas on how to design and implement experiments in their own hypothesis- or question-driven research.
TEACHING STRATEGIES
This course is designed to stimulate student learning through engagement and participation. A variety of learning strategies will be used including in-class discussions, group activities and presentations. Please be prepared when you come to class by completing any and all assigned readings. Coming to class prepared to participate will be critical to your success in the course since the class activities are a significant part of your grade in the course.

PREREQUISITES AND COREQUISITES
Prerequisite: Consent of Instructor.

REQUIRED TEXTS AND ANCILLARY MATERIALS
All the required material is provided by the instructor and will be uploaded in Blackboard before the class starts.

TECHNOLOGY REQUIREMENTS
A computer with Adobe Reader and Microsoft Power Point as well as access to Blackboard will be required in order to complete the course. Course materials including the syllabus, homework and other supplementary materials will be deposited on the course website hosted at UT BLACKBOARD (https://blackboard.utdl.edu). Announcements from the instructor and submissions of students’ works will also be through BLACKBOARD.

UNIVERSITY POLICIES

Policy Statement on Non-Discrimination on the basis of Disability (ADA)
The University is an equal opportunity educational institution. Please read The University’s Policy Statement on Nondiscrimination on the Basis of Disability Americans with Disability Act Compliance.

Academic Accommodations
The University of Toledo is committed to providing equal access to education for all students. If you have a documented disability or you believe you have a disability and would like information regarding academic accommodations/adjustments in this course please contact the Student Disability Services Office.

ACADEMIC POLICIES

Academic Policies for Graduate Students
As a student in my course and enrolled at the University of Toledo you should be familiar with the policies that govern the institution’s academic processes, for example, Academic Dishonesty, Enrollment Status, and Grades and Grading. Please read Graduate Academic Policies.

Missed Class Policy
Students are expected to attend every class meeting of courses in which they are registered. Please read the Missed Class Policy.
STATEMENT OF ACADEMIC DISHONESTY of Department of Biological Sciences is listed at the end of the syllabus.

COURSE EXPECTATIONS
The students will be expected to have read all papers and prepared themselves for discussion during the class period. Since this course is based almost entirely on demonstrating comprehension of the materials presented, students are required to attend every class. Unexcused absences will not be tolerated, and excused absences should be rare. While attending class is important, participating in class discussions is also critical for a good grade in this class. Students must demonstrate that they have read the assignments and that they have done the extra background analyses needed to comprehend the material. The only way to do this is to get involved in the discussions, ask questions and be prepared to answer. Everyone will talk every class period, so come prepared.

GRADING
The course is graded based on performance in each of the following areas: Class attendance, participation in paper discussion, assignments and term paper and oral presentation of at least one paper from the primary literature. An approximate breakdown of how the class will be graded is as follows:

<table>
<thead>
<tr>
<th>% of grade</th>
<th></th>
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<tbody>
<tr>
<td>Class Participation/In class quizzes</td>
<td>15</td>
</tr>
<tr>
<td>Attendance (days present/class period)</td>
<td>15</td>
</tr>
<tr>
<td>Class Assignments (in class and take home)</td>
<td>25</td>
</tr>
<tr>
<td>Term Paper</td>
<td>25</td>
</tr>
<tr>
<td>Oral Presentation</td>
<td>20</td>
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</tbody>
</table>

Grades will be letter-based and will utilize a straight scale (see below) unless overall class performance dictates use of a curve.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>93-100%</td>
</tr>
<tr>
<td>A-</td>
<td>90-92%</td>
</tr>
<tr>
<td>B+</td>
<td>87-89%</td>
</tr>
<tr>
<td>B</td>
<td>83-86%</td>
</tr>
<tr>
<td>B-</td>
<td>80-82%</td>
</tr>
<tr>
<td>C+</td>
<td>77-79%</td>
</tr>
<tr>
<td>C</td>
<td>73-76%</td>
</tr>
<tr>
<td>C-</td>
<td>70-72%</td>
</tr>
<tr>
<td>D+</td>
<td>67-69%</td>
</tr>
<tr>
<td>D</td>
<td>63-66%</td>
</tr>
<tr>
<td>D-</td>
<td>60-62%</td>
</tr>
<tr>
<td>F</td>
<td>0-59%</td>
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Writing assignments have specific due dates – papers handed in late will receive a penalty of no less than 5% per day late.

ASSIGNMENT DESCRIPTIONS
Refer to Grading policy. Students’ performance is assessed based on the grading policy during after each class meeting.

COMMUNICATION GUIDELINES
The instructor is available by appointment, or can answer Email questions.

STUDENT SUPPORT SERVICES-TECHNICAL SUPPORT
If you encounter technical difficulties with Blackboard, please contact the UT Online Help Desk at (419) 530-8835 or utdl@utoledo.edu. The Help Desk offers extended hours in the evenings and on weekends to assist students with technical problems. When calling after hours, leave a detailed message, including your Rocket Number and phone number, and an Online Learning staff member will respond on the next business day. The UT Online Help Desk website is available at: http://www.utoledo.edu/dl/helpdesk/index.html

Technical questions related to on-campus Internet access, virtual labs, hardware, software, personal website hosting, and UTAD account management can be directed to UT’s IT Help Desk at (419) 530-2400 or ithelpdesk@utoledo.edu. The IT Help Desk website is available at http://www.utoledo.edu/it/CS/HelpDesk.html.

STUDENT SUPPORT SERVICES-LEARNER SUPPORT
The University of Toledo offers a wide range of academic and student support services that can help you succeed:

University Libraries
University Libraries are your gateway to information at the University of Toledo connecting you with the resources you need for education, and research.

eTutoring Services
The Ohio eTutoring Collaborative, in partnership with The University of Toledo, now provides online tutoring support for all UT students. eTutoring Services are offered in a wide array of subjects, including Writing, Math, Calculus, Statistics, Accounting, Biology, Chemistry, and Anatomy and Physiology. Learn more at: https://www.etutoring.org/login.cfm?institutionid=232&returnPage

Office of Academic Access
The Office of Academic Access provides accommodations and support services to students with disabilities. Learn more at: http://www.utoledo.edu/utlc/academicaccess/index.html

Counseling Center
The Counseling Center is the university's primary facility for personal counseling, psychotherapy, and psychological outreach and consultation services. The Counseling Center staff provide counseling (individual and group), mental health and wellness programming, and crisis intervention services to help students cope with the demands of college and to facilitate the development of life adjustment strategies. Learn more at: http://www.utoledo.edu/studentaffairs/counseling/

CLASS SCHEDULE- Schedule may vary depending on semester and session
Schedule for Spring 2016 is shown
Depending on the time available, each session will cover two papers that bear on the topics shown below. A list of papers is available at the end of the syllabus for the students to choose from. Most of times a group of papers on the same subject are provided. The students are
required to present only one but encouraged to compare between different papers. The instructor will begin each class with a brief introduction.

<table>
<thead>
<tr>
<th>Week of</th>
<th>Topic</th>
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<tbody>
<tr>
<td>Jan. 11</td>
<td>Introduction/Overview</td>
</tr>
<tr>
<td>Jan. 18</td>
<td>Innate immune responses</td>
</tr>
<tr>
<td>Jan. 25</td>
<td>Pathogen Recognition</td>
</tr>
<tr>
<td>Feb. 1</td>
<td>Toll-like receptors</td>
</tr>
<tr>
<td>Feb. 8</td>
<td>Cytosolic receptors</td>
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<tr>
<td>Feb. 15</td>
<td>RNA signaling pathways</td>
</tr>
<tr>
<td>Feb. 22</td>
<td>OAS, RNase L and PKR</td>
</tr>
<tr>
<td>Feb. 29</td>
<td>Assays for RNase L</td>
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<tr>
<td>March 7</td>
<td>Spring Break – no meeting</td>
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<tr>
<td>March 14</td>
<td>RNase L activity in viral infections</td>
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<tr>
<td>March 21</td>
<td>Antiviral roles of RNase L</td>
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<tr>
<td>March 28</td>
<td>Molecular basis for RNase L activity</td>
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<tr>
<td>April 4</td>
<td>Tumor suppressor role of RNase L</td>
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<tr>
<td>April 11</td>
<td>final presentations</td>
</tr>
<tr>
<td>April 18</td>
<td>final presentations</td>
</tr>
<tr>
<td>April 25</td>
<td>final presentations /review</td>
</tr>
<tr>
<td>May 2</td>
<td>Finals Week – no meeting</td>
</tr>
</tbody>
</table>

Students may pick papers from the list below or related papers for review.


Note: Both the class schedule and covered topics may be adjusted at the instructor’s discretion.
STATEMENT OF ACADEMIC DISHONESTY

Department of Biological Sciences

Academic dishonesty by students enrolled in undergraduate and graduate courses and programs offered by the Department of Biological Sciences will not be tolerated. Academic dishonesty includes but is not limited to:

1. Obtaining assistance from another individual during an examination.

2. Giving assistance to another individual during an examination.

3. The unauthorized use of study material or textbooks during an examination.

4. Changing answers on an examination after it has been returned and then submitting it for regrading.

5. Plagiarizing written assignments. Plagiarizing includes but is not limited to: a) Copying laboratory reports from previous years, b) copying or paraphrasing reports, term papers, or these prepared by other students, c) unauthorized collaboration in the preparation of reports, term papers, or theses, and d) use of another author’s materials without appropriate acknowledgement through quotation and citation.

6. Attempting to bribe or otherwise induce an instructor to alter either a grade or examination score.

7. Obtaining or attempting to obtain a copy of an examination prior to its administration.

In accordance with policies presented in The Student Handbook and The University Catalog, Instructors have the responsibility and right to report cases of alleged dishonesty to departmental, college, and university administrative units. Students involved in academic dishonesty may expect to receive a grade of F on specific assignments as well as in the course where the assignment was made. In addition, disciplinary action may be recommended through appropriate college and university disciplinary committees. Please consult your instructor for instructions on the implementation of this policy.