Bioinformatics 552a/652a
Research in Bioinformatics

Two Credit Hours
Spring 2014, Thursdays from 4:15 PM – 6:15 PM
BICC 123 & 124

Course Description: The Research in Bioinformatics course is designed to give students (Masters, Ph.D., and fellows) a foundation in general research approaches with specific application to bioinformatics and medical informatics. This is the first in a two-part course (second part of the course is taken in the Spring). This course will focus on developing the critical thinking and evaluation skills necessary to be successful in this field. Special emphasis will be placed on critical evaluation of the literature, and preparing to do a project in the Spring term course.

Prerequisites: Acceptance into the DMICE bioinformatics track or instructor permission. There are no specific course prerequisites for the class.

Instructors:
Eilis Boudreau, M.D., Ph.D., boudreau@ohsu.edu
Shannon McWeeney, Ph.D. mcweeney@ohsu.edu
Office Hours: by appointment


Reading Material: Relevant literature from the fields of biomedical research, bioinformatics, and computer science.

COURSE GRADING POLICY:
This course is given for a letter grade. The final grade will be based on 100 points. The number of points assigned to each activity is as follows: 20 points for design challenge project participation grade (to be assigned by your project mentor), this will be based on how much you contribute to the group project; 20 points for class participation; 10 points for incorporation of project management approaches in doing the project; 45 points for graded class assignments; and 5 points for your in-class group design challenge presentation and individual summary slide. All written assignments should be submitted through Sakai and grades for written assignments will be posted in Sakai no later than two weeks after the assignment due date (for assignments submitted late, grades will be posted no later than two weeks after the assignment is submitted).

Late Submissions
The assignments will be marked down by 1 point per day if you have not obtained prior permission to delay submission from the instructor. An assignment is considered late if submitted anytime after the Sakai deadline. For example, if a written assignment is due at midnight and you submit it at 4:05 PM, you will lose 1 point. If the assignment still has not been
submitted by the following day at midnight, you will lose another point. A one point loss will continue to occur for each day late until the assignment has been submitted.

**Class Participation**
Twenty percent of your grade will be based on your in-class contributions. While you will have some lectures early in the term much of the class time is devoted to interactive in-class exercises and your contribution to these exercises will form the bulk of your class participation grade. Therefore, it is very important that you come to all class sessions on-time. If for some reason you must miss a class, please let the instructor know in advance (or in the case of an emergency as soon as possible after the class is missed). In these cases, you may be given a make-up exercise if appropriate to do on your own. If you miss a class without prior approval and in the absence of an emergency, it will not be possible to make-up the work missed and you will lose 2 of the possible 20 class participation points. Repeated tardiness to class may also result in a loss of 1 point per the class session for which you were late.

**Additional Expectations**
Minimum expected hours of work on your project over the course of the trimester: 55 hours (at least 5 hours per week; this does not include the time it takes you to prepare written assignments related to the project).

**Grading**

<table>
<thead>
<tr>
<th>Task</th>
<th># Points</th>
<th>Due Date</th>
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<tbody>
<tr>
<td>Written bibliography.</td>
<td>35</td>
<td>2/11/15 (4 PM)</td>
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<tr>
<td>Bibliography presentation.</td>
<td>25</td>
<td>In-class.</td>
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<tr>
<td>NIH Biosketch; Individual Development Plan</td>
<td>10</td>
<td>2/25/15 (4 PM)</td>
</tr>
<tr>
<td>Project Plan for Spring Term</td>
<td>30</td>
<td>3/17/15 (4 PM)</td>
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<tr>
<td><strong>Final Class Grade</strong></td>
<td><strong>100</strong></td>
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Grades are assigned based on the following criteria:
A  93-100
A- 90-92.99
B+ 87-89.99
B  83-86.99
B- 80-82.99
C+ 77-79.99
C  73-76.99
C- 70-72.99
F  <70

Graduate Studies in the OHSU School of Medicine is committed to providing grades to students in a timely manner. Course instructors will provide students with information in writing at the beginning of each course that describes the grading policies and procedures including but not limited to evaluation criteria, expected time needed to grade individual student examinations and type of feedback they will provide.
Class grades are due to the Registrar by the Friday following the week of finals. However, on those occasions when a grade has not been submitted by the deadline, the following procedure shall be followed:

1) The Department\(^1\)/Program Coordinator\(^2\) will immediately contact the Instructor requesting the missing grade, with a copy to the Program Director and Registrar.

2) If the grade is still overdue by the end of next week, the Department\(^1\)/Program Coordinator\(^2\) will email the Department Chair directly, with a copy to the Instructor and Program Director requesting resolution of the missing grade.

3) If, after an additional week the grade is still outstanding, the student or Department\(^1\)/Program Coordinator\(^2\) may petition the Office of Graduate students for final resolution.

\(^1\) For courses that are run by a specific department.

\(^2\) For the conjoined courses (course number is preceded by CON_ that are run by Graduate Studies.

COPYRIGHT INFORMATION:
Every reasonable effort has been made to protect the copyright requirements of materials used in this course. Class participants are warned not to copy, audio, or videotape in violation of copyright laws. Journal articles will be kept on reserve at the library or online for student access. Copyright law does allow for making one personal copy of each article from the original article. This limit also applies to electronic sources.

To comply with the fair use doctrine of the US copyright law, Sakai course sites close three weeks after grades are posted with the Registrar. Please be sure to download all course material you wish to keep before this time as you will have no further access to your courses.

DMICE COMMUNICATION POLICY

1. If the syllabus directs the student to contact the TA before contacting the instructor, the student should do so. Otherwise, the student should contact the instructor and allow 2 business days (not including weekends) for a response.

2. If the student does not receive a response from the instructor within 2 business days, s/he should contact the TA (if there is one). When contacting the TA s/he should cc the instructor and Diane Doctor at doctord@ohsu.edu.

3. If a student does not receive a response from the TA within 1 business day (not including weekends), s/he should contact Diane Doctor at doctord@ohsu.edu and cc the instructor and the TA.

4. If Diane does not reply within 1 business day (not including weekends), the student should contact Andrea Ilg at ilgan@ohsu.edu.

5. Students having difficulties with Sakai should contact the Sakai Help Desk at sakai@ohsu.edu or at (877) 972-5249. Sakai help is available M-F from 8am to 10-pm and weekends from Noon to 5pm. Do not contact the instructor.

STUDENT ACCESS:

OHSU is committed to providing equal access to qualified students who experience a disability in compliance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990, and the ADA Amendments Act (ADA-AA) of 2008. If you have a disability or think you may have a disability (physical, sensory, chronic health,
psychological, learning, or other) please contact the Office for Student Access at (503) 494-0082 or studentaccess@ohsu.edu to discuss eligibility for academic accommodations. Information is also available at www.ohsu.edu/student-access. Because accommodations may take time to implement and cannot be applied retroactively, it is important to have this discussion as soon as possible. All information regarding a student’s disability is kept in accordance with relevant state and federal laws.

ACADEMIC HONESTY:
Course participants are expected to maintain academic honesty in their course work. Participants should refrain from seeking past published solutions to any assignments. Literature and resources (including Internet resources) employed in fulfilling assignments must be cited. See http://www.ohsu.edu/xd/education/library/research-assistance/plagiarism.cfm?WT_rank=1# for information on code of conduct for OHSU and http://www.ohsu.edu/xd/education/teaching-and-learning-center/for-students/index.cfm for more information on citing sources and recognizing plagiarism.

In an effort to uphold the principles and practice of academic honesty, faculty members at OHSU may use originality checking systems such as Turnitin to compare a student’s submitted work against multiple sources.

To protect student privacy in this process, it will be necessary to remove all personal information, i.e. student name, email address, student u-number, or any other personal information, from documents BEFORE submission.

NOTE:
This syllabus and class schedule is subject to changes by the instructors. Changes will be made with as much advance notice as possible.

COURSE COORDINATION:
The course Website will be the central location for the distribution of course materials and assignment listing. For any technical questions or if you need help logging in, please contact the Sakai Help Desk.

Hours: Sakai Help Desk is available Mon – Fri, 8 am – 9 pm and weekends 12 pm – 5 pm, Pacific Time.
Contact Information:
(Toll-free) 877-972-5249
(Web) http://atech.ohsu.edu/help
(Email) sakai@ohsu.edu

COURSE OBJECTIVES:
• If presented with a research idea, be able to identify informatics issues relevant to the problem and be able to develop and articulate appropriate approaches to finding solutions to these problems.
• Critically develop a research idea (hypothesis), including complete a thorough background evaluation of the literature relevant to this idea.
COURSE OUTLINE:

Week 1 (1/7/16; room 124)
- Course Introduction
- Accurate documentation of your scientific work.
- The bibliography as a tool for idea development.

Week 1 Assignments:
(1) Reading: UW-Madison Writing Center document on acknowledging sources (see supplemental material on Sakai); The Grant Application Writer’s Workbook, Part One: Overview and Chapter 1.
(2) Begin bibliography development using a current paper in your topic area.

Week 2 (1/14/16; room 124)
- Introduction to REPORTER for researching a project idea.

Week 2 Assignment:
(1) Reading: The Grant Application Writer’s Workbook, Chapters 2-4.
(2) Continue work on bibliographies.

Week 3 (1/21/16; Archives Room, meet in Old Library Historic Archives Room)
- Bibliography development, tracing the lineage of an idea, come prepared to do research in on your topic in the OHSU historic archives.

Week 3 Assignment:
(1) Reading: The Grant Application Writer’s Workbook, Part Two: Overview and Chapter 7.
(2) Continue work on bibliographies.

Week 4 (1/28/16; room 123):
- Introduction to Career Planning, the NIH Biosketch, and the Individual Development Plan (IDP), guest speaker Virginia Lankes.

Week 4 Assignment:
(1) Reading: Chapters 7-9.
(2) Continue work on bibliographies.
(3) Begin work on NIH Biosketch and IDP.

Week 5 (2/4/16; room 123):
- Introduction to best practices with email.
- Introduction to Information management.

Week 5 Assignment:
(1) Reading: The Grant Application Writer’s Workbook, Part Three Overview and Chapter 10.
(2) Continue work on bibliographies, bibliographies due by Thursday 4 PM on 2/11/16.
(3) Continue work on NIH Biosketch and IDP.

Week 6 (2/11/16; room 123):
- In–class presentations of bibliographies.

Week 6 Assignment:
(1) Reading: The Grant Application Writer’s Workbook, Chapters 10-11.
(2) Continue work on NIH Biosketch and IDP.

Week 7 (2/18/16; room 124):
- Bibliography presentations continued.

Week 7 Assignment:
(1) Reading: The Grant Application Writer’s Workbook, Part Four: Overview and Chapters 18-19.
(2) Continue work on NIH Biosketch and IDP, NIH biosketch and IDPs due by 4 PM on Thursday 2/25/16.

Week 8 (2/25/16; room 123):
- Bibliography presentations continued.

Week 8 Assignment:
(1) Begin work on identifying a project for Spring term.

Week 9 (3/3/16; room 123):
- Introduction to Project Management with Deb Woodcock.

Week 9 Assignment:
(1) Begin work on project plan for Spring term.

Week 10 (3/10/16; room 123):
- Discussion of projects for Spring term.

Week 10 Assignments:
Work on project plan for Spring Term. Final Spring project plan due 4 PM on Thursday 3/17/15.

Week 11 (3/17/16; room 124):
- Presentation of Spring term project plans in-class.