CMSI 299-03/499-01
INDEPENDENT STUDIES:
BIOLOGICAL DATABASES PRACTICUM
http://myweb.lmu.edu/dondi/spring2014/cmsi499

Spring 2014 — Doolan 106
Variable sessions and meetings, 3 semester hours
Office Hours: TR 9–11am, or by appointment

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Course Objectives

Independent studies courses allow a student to embark on a self-directed foray into a specific area of computer science, under the guidance of the instructor. The student selects the topic and assists in identifying source material. The objectives of such a course are to:

1. **Demonstrably gain knowledge and expertise in the specific topic.**

2. **Organize and execute a project that applies what is learned.**

3. **Document the progress made throughout the course, in terms of both the learned content and learning process itself.**

In addition to the course-specific content, you are also expected to:

4. **Follow academic and technical best practices throughout the course.**

Ancillary objectives may be specified depending on the selected subject matter. For this biological databases practicum, a usable web-based demonstration of the technology must be made available.

Materials and Texts

No specific materials or texts; anything that fosters an understanding of the GRNmap project and knowledge of the tools and libraries to be used for the website and visualization (e.g., Bootstrap, *d3*, Node.js) will be appropriate.

Course Work and Grading

This course uses standards-based grading: your proficiency in each course objective is directly evaluated according to the outcomes shown on page 3 of this syllabus. Proficiency is measured according to the following key:

+	Advanced proficiency
		Appropriate proficiency
/	Approaching appropriate proficiency
–	Needs practice and support
O	Not yet evaluated

Your submitted work is used to evaluate these outcomes (see below). Letter grades are then assigned as follows:

	+			/	–
A	many		*none*	*none*
B		many	few	*none*
C			some	few
D				some
F				many

A–, B+, B–, C+, and C– grades are assigned when there are "close calls" between the above thresholds. Qualitative considerations (e.g., degree of difficulty, effort, time constraints, overall attitude) may improve proficiency measures.

Final Study Report

You will formally document the overall results of your studies in the form of a final report to be submitted at the end of the semester. The report shall consist of at least the following sections:

1. An introduction that states the background and motivation for this course of study

2. A literature review describing the source materials studied (as applicable)

3. A summary or survey of what was learned during the semester

4. The most significant accomplishments made while developing the GRNsight visualization and website

5. The most significant challenges faced while developing GRNsight

6. A road map for future work, regarding both GRNsight itself and your own trajectory for growth in web development

7. Any commentary that you would like to make overall about the course and the project

There are no hard limits on length, but 10–20 pages at standard font, spacing, and margin settings, not including the list of references cited, is typical. The report informs the proficiency measures for objectives **1**, **3**, and **4**.

The final study report is due at the end of finals week, <u>May 9</u>.

GRNsight Code Base and Website

The code base and website informs the proficiency measures for objectives **1**, **2**, and **4**.

The state of any code at the end of finals week, <u>May 9</u>, will serve as the basis for this grade.

Version Control

Version control is an indispensable part of today's computer science landscape in industry, the academe, and the open source community. We use version control heavily in this course: make sure that you get the hang of it.

Workload Expectations

In line with LMU's *Credit Hour Policy*, the workload expectation for this course is that for every unit of this course, you will complete at least two (2) hours of out-of-class work each week.

Attendance

Meeting and session schedules are determined individually, and may vary according to the specific subject matter and/or course work. The last day to add or drop a class without a grade of W is <u>January 17</u>. The withdrawal or credit/no-credit deadline is <u>March 21</u>.

Academic Honesty

Academic dishonesty will be treated as an extremely serious matter, with serious consequences that can range from receiving no credit to expulsion. It is never permissible to turn in work that has been copied from another student or copied from a source (including the Internet) without properly acknowledging the source. It is your responsibility to make sure that your work meets the standard of academic honesty set forth in the *LMU Honor Code and Process*.

Special Accommodations

Students with special needs who require reasonable modifications or special assistance in this course should promptly direct their request to the Disability Support Services (DSS) Office. Any student who currently has a documented disability (ADHD, autism spectrum, learning, physical, or psychiatric) needing academic accommodations should contact DSS (Daum 224, ×84535) as early in the semester as possible. All requests and discussions will remain confidential. Please visit *http://www.lmu.edu/dss* for additional information.

Topics and Important Dates

Dependent on the specific subject matter and ongoing progress.

Course Outcomes

1   Demonstrably gain knowledge and expertise in the specific topic.

1a	*Effectively express the background and motivation relevant to the studied topic.*
1b	*Compile a thorough and well-described literature review.*
1c	*Write a complete and substantive summary or survey of the studied topic.*
1d	*Concisely and clearly express ideas, accomplishments, challenges, lessons learned, and future plans encountered throughout the independent study.*

2   Organize and execute a project that applies what is learned.

2a	*Implement a system that works as intended and produces correct answers or results.*
2b	*Implement a system that does its work in a reasonable amount of time.*
2c	*Use clear, consistent names for variables, classes, methods, constants, types, and other entities that correspond to their roles, purpose, and/or actions.*
2d	*Provide README or overview material regarding the project.*
2e	*Provide sufficient instructions, help, or tips, as appropriate, for users of the final product.*

3   Document the progress made throughout the course, in terms of both the learned content and learning process itself.

3a	*Provide a chronological account of study activity with enough frequency and detail to communicate progress or issues.*
3b	*Express oneself in clear, easy to follow, precise, and grammatically correct language.*
3c	*Demonstrate disciplined and thorough quality control through polished, well-proofed work.*

4   Follow academic and technical best practices throughout the course.

4a	*Write syntactically correct, functional code.*
4b	*Demonstrate proper separation of concerns.*
4c	*Write code that is easily understood by programmers other than yourself.*
4d	*Use available resources and documentation to find required information.*
4e	*Use version control effectively.*
4f	*Meet all designated deadlines.*