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# Junior Colloquium

Math 400 Fall 2007

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Fowler 108 T 1:30pm - 2:55pm

<http://faculty.oxy.edu/ron/math/400/07/>

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**INSTRUCTOR** Ron Buckmire ~ Fowler 313 ~ x2536 ~ [ron@oxy.edu](mailto:ron@oxy.edu) ~ **MadProfessah**

**WEBSITE** The official syllabus for this course is at <http://faculty.oxy.edu/ron/math/400/07/>

**OFFICE HOURS** I am almost always in my office (Fowler 313) until at least 5pm. My official office hours for Fall 2007 are **MWF 3:30-5:00pm** and T 3-4pm.

I am readily accessible by e-mail at [ron@oxy.edu](mailto:ron@oxy.edu) and by phone at **323-259-2536** and AIM at **ProfBuckmire** or **MadProfessah** (add me to your buddylist!) If you need to see me at a time not specified here, then contact me and make an appointment and I'll be happy to meet with you then. If you don't interact with me on a 1-to-1 basis then you really aren't getting your (tuition) money's worth!

**CLASSROOM** We will meet in Fowler 108, Tuesday from 1:30pm-2:55pm.

**TEXTBOOK** No Required Text.

**GOALS OF THE CLASS** Specifically, by the end of this class I want you to be able to

- Show proficiency in writing, particularly clear, concise, mathematical text
- Improve oral presentation skills
- Review and show satisfactory understanding of fundamental concepts and related problems from Differential & Integral Calculus, Multivariable Calculus, Linear Systems, and Discrete Mathematics
- Develop a broader view of mathematics and the relationships between its subdisciplines
- Be exposed to mathematical ideas and applications outside of the classroom

**FORMAT OF THE CLASS** This course is a colloquium or seminar course. This is intended to facilitate small discussion and encourage academic collaboration and mutual support. Math 300 is a graded, 2-unit course. There are significant oral and written communication components.

**PROJECT** There will be a class project which will require all students registered in Math 300 to work together to produce something of interest and use to the Occidental Mathematics Community. past projects have included a Mathematics Department e-Newsletter (which involved tracking down and contacting all faculty and alumni of the Department over the last 20 years). We can explore other ideas of interest to the group as a whole for this year's Junior Colloquium project.

**COMPREHENSIVE EXAMINATION** The Comprehensive Examination (which is a graduation requirement enforced by every academic department at Occidental College) in the Mathematics Department is split into two parts, Part 1 and Part 2. Part 1 is a comprehensive exam on the five Fundamental Courses (Differential & Integral Calculus, Multivariable Calculus, Linear Systems, and Discrete Mathematics) done in the Spring semester of the Junior Year. Part 2 of the Comprehensive Examination in the Mathematics Department is usually done in the Spring semester of the Senior year

and consists of a paper and oral presentation. Junior Colloquium is intended to be the course where Part 1 is passed and preparation for Part 2 occurs.

We will work throughout the first half of the semester to help prepare you for the Comps Part I Exam. The success of this review work is up to you individually and as a group. The exam will be given in early April, at a date to be announced shortly. It will be given during the afternoon (depending on your other course and work schedules).

If you do not pass the exam in its entirety, or you do not pass one or more of the subsections of the exam as determined by the departmental faculty, you will be given ONE retake of the exam or the appropriate subsection(s) during the last week of classes or exam week.

If you still do not pass the full exam and all subsections, you will be allowed to take the entire exam (you must take the whole exam, not just one or more subsections, even if that is all you had not passed) next spring with the Math 300 class and will be subject to their retake rules. If you still do not pass all components of the exam next year, you will receive a "NC" in Math 300 (regardless of your performance in all other components of the course) and will not be eligible to graduate as a mathematics major.

Each of you is assigned to become "expert" in one or several of the foundational areas:

Calculus & Multivariable Calculus & Linear Systems & Discrete Mathematics

One of your "Major Writing Assignments" will be a summary of the ideas in one of these foundational areas. I encourage you to work together on these summaries, but each person will write their own. The final summaries will be shared with everyone.

**GRADING** Your course grade in Math 300 will be composed of the following:

- Attendance and Weekly Assignments **20 %**
- Major Writing Assignments **40 %**
- Comps Part 1 **20 %**
- Class Project **20 %**

**MAJOR WRITING ASSIGNMENTS** Math 300 is also the course which the Mathematics Department uses to insure all Mathematics Majors have fulfilled the Junior Writing Requirement. Thus there are numerous writing assignments. You can expect to have assignments such as:

- A written discussion and solution to a standard Comps I problem
- A summary of one of the foundational areas.
- A written summary of and reflection on one mathematical talk you attend (senior comps, job candidate, or invited talk)
- A paper presenting a portion of a mathematical paper that you read
- A paper presenting a mathematical topic/problem of your choice

Most likely you will have opportunities to revise and resubmit at least one of these papers

**MATH 400** Unless you have a standing and unmovable commitment, and discuss this in-person with me, you are **REQUIRED** to attend the Senior Comps talks. These are currently scheduled to be given on **Thursday March 22nd, 4:30-6:00**. In addition, you are **HIGHLY ENCOURAGED** to attend all other mathematical talks given by departmental faculty, invited Pi Mu Epsilon speakers.