Syllabus for Math 500, Teaching Assistant Training, Fall 2018

Course: Meets Thursdays, 1 – 2 PM in APM B402A. 2 units, S/U grading. First class meeting will be September 27. No meeting on November 22 (Thanksgiving holiday). Attendance at all ten class sessions is *required*, as is completion of all homework assignments. Contact the instructor as soon as possible if circumstances beyond your control force you to miss a class meeting. Students *must* pass this course in order to serve as Math Department TAs during the 2018-19 academic year. The course covers the duties and responsibilities of a mathematics TA at UCSD, campus resources that can assist you, appropriate interaction with faculty and students, and research-based teaching methods and strategies.

Instructors: Jeffrey Rabin (Math Department TA Training Coordinator), Eric Lybrand (Senior TA), Jacqueline Warren (Junior TA). Prof. Rabin's office hours: after class, Th 2-3 PM in APM 6220, or by appointment.

Other Campus TA Training: Graduate Division *mandatory* online TA training available mid-September, to be completed by October 12.
UAW/ASE *mandatory* training, September 25, Price Center West theater, 8:30 – 10:15 AM.
Teaching and Learning Commons Week 0 and 1 "Foundations in Teaching" workshops, optional. Information on their website.

Tentative Schedule

Week 0 (Sept. 27): Getting started. Expected TA duties. Respectful interaction with faculty, graders, and students. Instructor's authority and yours. What to do in section. Homework boxes, rosters, software, record-keeping. Sources of help. Homework: write a teaching statement.

Week 1 (Oct. 4): More first steps as a TA. Ways to welcome and engage students in section. Good blackboard technique. Observations by Senior TA begin.

Week 2 (Oct. 11): Preparation for midterm exams. Consistent grading and record-keeping. Use of Gradescope and TritonEd. Practice grading using rubrics. Conducting review sessions.

Week 3 (Oct. 18): Teaching problem-solving. Active learning techniques, how people learn. Presentation by Professor Todd Kemp (Academic Senate Distinguished Teaching Award recipient, 2018). Homework: read an article on teaching mathematics.

Week 4 (Oct. 25): Panel presentation by experienced TAs. Handling difficult situations involving students. Homework: begin observations of fellow 1st year and more experienced TAs.

Week 5 (Nov. 1): Speaker from Academic Integrity Office. Academic integrity policy. How students cheat. Preventing and detecting academic dishonesty. What to do if you observe violations. Responsibilities of TAs and instructors.

Week 6 (Nov. 8): Speaker from Office for the Prevention of Harassment and Discrimination. Also, presentation by Martha Stacklin, English Language Program.

Week 7 (Nov. 15): Presentation by Susan Kelly, Office for Students with Disabilities. Also, presentation by Christina Lambert, Counseling and Psychological Services.

Week 9 (Nov. 29): Debrief on TA observations. Role-playing: helping students during office hours.

Week 10 (Dec. 6): Review sessions, final exams, end-of-quarter duties. Homework: revise teaching statement.

Resources for Teaching Mathematics

M. Carlson and C. Rasmussen, *Making the Connection: Research and Teaching in Undergraduate Mathematics Education*, Mathematical Association of America 2008.

How People Learn, National Research Council 2000.

S. Krantz, *How to Teach Mathematics, 3rd Edition*, American Mathematical Society 2015.

D. Tall, *How Humans Learn to Think Mathematically*, Cambridge University Press 2013.

A. Schoenfeld, *Mathematical Problem Solving*, Academic Press 1985.

A Handbook for Mathematics Teaching Assistants, Mathematical Association of America, online.

Instructional Practices Guide, Mathematical Association of America, online.

B.S. Edwards and M.B. Ward, Surprises from Mathematics Education Research: Student (Mis)Use of Mathematical Definitions, *American Mathematical Monthly*, May 2004 (pp. 411-424).

A. Schoenfeld, When Good Teaching Leads to Bad Results: The Disasters of "Well-Taught" Mathematics Courses, *Educational Psychologist* 23(2) (1988) 145-166.

D. Tall and S. Vinner, Concept Image and Concept Definition in Mathematics with Particular Reference to Limits and Continuity, *Educational Studies in Mathematics* 12 (1981) 151-169.