

Scholarly Ethics and Integrity Plan in Department of Mathematics

In accordance with Resolution 2012-13B, the following is proposed by the Department of Mathematics.

Required topics covered:

1. Plagiarism and other violations of the Graduate Honor Code
2. Proper use of professional conventions in citation of existing research and scholarship, accurate reporting and ownership of findings, and acknowledgement of contributions to the work
3. Ethical standards in teaching, mentoring, and professional activities
4. Available avenues for reporting alleged misconduct

Plan:

In the week before the first day of class in the Fall semester, first year graduate students are required to attend orientation sessions where topics 1 and 4 above are touched upon. Early every spring semester, the Department of Mathematics has a weekend workshop called *Research Days*, which is also required for first-year graduate students. Short talks by research active faculty members help new students find appropriate thesis advisors. Other topics such as job searching strategies have been discussed. Throughout the year there are lunch time seminars for graduate students that are organized by senior graduate teaching assistants which cover various topics on teaching and research. To fulfil the ethics and integrity requirements, we plan to seamlessly integrate the required topics into these workshops and seminars.

To be more specific, we propose the following:

- (1). All new graduate students and GTAs are required in the week before the Fall semester begins to attend the new student orientation. We already discuss topics 1 and 4 at this orientation but we will now do so in much more depth. Topics 1 and 4 are immediately relevant to new students. The relevant materials will be distributed.
- (2). During *Research Days*, we will have a detailed focus on topics 1 and 4. Sessions will be given by faculty members. Topics 2 and 3 will be also discussed.
- (3). More detailed discussions on topics 2 and 3 will be presented during the lunch time seminar series mentioned above. Topic 2 will be addressed by faculty and more experienced Ph. D. students. Group discussions and student participation at these seminars will be the main vehicle to include topic 3.
- (4). Both major national mathematical societies, the American Mathematical Society and the Society for Industrial and Applied Mathematics have websites devoted to ethics and integrity (the website of Dianne P. O'Leary's summary, <https://www.siam.org/news/news.php?id=1921>,

which has the references mentioned above and examples of unethical conduct). This will be required reading for our first year students. The material in these websites will be the main topics during some of the lunch-time graduate seminars.

(5). There will be an item on the Graduate Student Annual Report which will indicate whether the student has met the ethics and integrity requirement. Meeting this requirement will be required before any degree is conferred.

Verification:

For over 20 years we have assessed our graduating seniors with group exit interviews. Three faculty members ask the group of five or six students to solve some pre-determined mathematical problems that we would expect a graduate to be able to answer. They are allowed to work together. We propose to verify that our first year graduate students understand the ethics and integrity topics in the same way. The Graduate Program Committee will be in charge of forming relevant questions and discussion topics. The exam will be given near the end of the Spring semester. Any student who fails this exam will be required to repeat the entire exercise in the following year.

Other optional topics:

The only relevant optional topics for students in Mathematics Department are:

- (i). Fair use of publications and software;
- (ii). Guidelines for determination of authorship.

In Mathematics, the topic (ii), determination of authorship, is standard, i.e., alphabetically versus in the order of contribution to the work, which may vary in different areas of specialty. Students will receive the training from their thesis advisors. The topic (i) on fair use is implicitly addressed in topic 2 and will be integrated with that topic.