Course Project Information Sheet

Overview: Each student will be required to review literature (either from a research paper or a textbook chapter) on a topic related to monomial ideals. Each student will obtain permission to work on the chosen topic, and each student will explore a different topic. The project must be focused on material not discussed in class and not be the current exact content of a student's dissertation topic. The project will consist of: a written 3–5 page paper summarizing main results, definitions, and examples; a 50-minute class presentation; and a related homework problem to be assigned to classmates. For each component you will be graded on correctness, completeness, and creativity.

Paper: Each project must include a written paper which will be shared with the entire class. Your paper should be 3 to 5 pages long (typed using LaTeX with 1 inch margins and 11 point font size with respectable font type). Quality is more important than quantity. Have something to say and say it clearly and concisely. The paper should summarize main results and include definitions and examples. You should consider filling in missing parts of arguments and complete aspects left to the reader (including exercises if you work on a textbook chapter). It would be better to go into a small part of some topic in depth and detail, rather than try to cover a large area superficially. This is your opportunity to show that you can read some mathematics on your own and then explain it in writing to your reader. All papers must include a list of references. References should be to either journals or books. You may use the internet to find sources, but references themselves should not be to websites. *Please do not copy any references - appropriately cite these.* The project paper will be worth 25% of your course grade.

Presentations: You will have 50 minutes to enlighten your colleagues about the topic you have researched. Your presentation should be clear and to the point. Choose your examples carefully to illustrate the points you want to make. Be prepared to answer any questions which arise. You should rehearse your presentation in advance with some fellow students and leave some time for questions and interruptions. Presentations always take more time than you think they will. Rehearsal will help you to better gauge how much you can accomplish. Anonymous feedback will be provided from the entire class. *Much effort is invested in course projects – please make every effort to attend all presentations to support your classmates.* The presentation will be worth 25% of your course grade.

Project Problem: Each student will also be required to propose a problem related to their presentation to be included in the final course Problem Set. You are to submit a proposed problem with its solution. The problem and solution will be worth 5% of your course grade.

Important Dates: We will adhere to the following deadlines. As stated on the course syllabus, no extension will be granted for a project paper, problem, or related final Problem Set. A project presentation will only be rescheduled for an unavoidable, documented circumstance.

- By 9:00 a.m. on Monday, October 3 you need to submit the course project proposal.
- By noon on Wednesday, October 5 the topics and schedule of presentations will be announced and finalized.
- The project paper and proposed problem (with solution) is due by 5:00 p.m. on Friday, December 2.

- There will be 1 presentation each class on December 5, 7, and 9. There will be 2 presentations during the Final Examination period (8:00 a.m. - 10:00 a.m.) on Monday, December 12.
- The final Problem Set involving the project problems will be due at 9:00 a.m. on Thursday, December 15.

Topics: You should propose a topic that emphasizes the *power of monomial ideals*. Ideally, you will work on a topic that you find interesting. You may propose a topic from a research paper or textbook chapter. If you are unsure of possible topics then please see me for some ideas and references to get started.