Graduate Algebra, Part I (Math 647)
Fall 2019

Meeting times:	Mon., Wed., and Fri. 3–3:50pm in 210 Deady
Instructor:	Ben Elias
Office:	Fenton 210
Office hours:	TBD.
E-mail:	belias@uoregon.edu
Preferred Pronouns:	he/him/his.
Course website:	http://pages.uoregon.edu/∼belias/647-spring-2019/
Midterm:	In class, 50 minutes, TBD.
Quizzes:	There will be some in-class quizzes..
Final:	Thursday December 12, 2:45PM, 2 hours, in 210 Deady.

Textbook: Brundan and Kleshchev's algebra book (available freely in electronic format).

Prerequisite: 400/500-level algebra, or instructor's permission.

Homework: I will assign daily problems and weekly assignments, all to be found in a regularly-updated pdf. Daily problems are assigned each lecture and due the next lecture. Weekly assignments are due each week (day TBD by class vote). Length-wise, I take a normal-length weekly assignment, and pop three problems out of it to be daily assignments. I expect daily homeworks to take a little over 30 minutes.

On occassion I will have pre-announced quizzes on the day the weekly homeworks are due, on the topic of the previous assignment. These do not contribute in a large way to the class grade, but are mostly to help give practice for the exams.

Office hours: OFFICE HOURS ARE A VASTLY UNDERUSED RESOURCE. I am stuck in my office, waiting to answer your questions, so please use the opportunity!

Please, do not hesitate to ask questions in class. If you are confused, so are many of your colleagues, and they will thank you for speaking up. But you will surely have more questions, and office hours should be very helpful. If you can't make my office hours, email me to set up an appointment.

Attendance and Participation: If you miss a class, it is your responsibility to find out what happened from your colleagues, and to hand in homework on time. If your grade is borderline between one grade and another, then attendance and participation will be taken into account.

Homework policies In this course, you are strongly encouraged to work on the homework problems with your colleagues. Math is a collaborative activity, and one which is easier to learn as a team. However, when it comes time to write up your homework answers, this should be done individually, without reference to any common solution or

the work of others. By writing it up individually, you can really isolate those things you thought you understood in the group, but which did not make sense later. For example:

Ok: a study group works a problem on the blackboard, gets the answer. Erases the answer, each member tries to write up the solution individually, asks questions of the group when something goes wrong, which it inevitably will.

Not Ok: a study group works a problem on the blackboard, gets the answer. Members copy the answer from the board to their homework sheet, or write up the solution while referencing the solution on the board.

Definitely not ok: Using solution guides, or asking for/finding answers on an online forum. Copying or modifying answers from external solutions is cheating, plagiarism, and counts as academic misconduct. Students caught cheating on homework will be reported. Students who cheat and are not caught may have higher scores on homework, but tend to do poorly on exams, and receive lower grades overall.

Calculators: Neither calculators nor other electronic devices will not be permitted on any of the exams.

Grading and Exams: There will be one midterm, a final exam, and several quizzes. The date of the midterm will be decided on in the first week of class. The final exam is worth 40% of your grade, the midterm 25%, homework 30%, quizzes 5%. Please bring your UO ID to all exams.

Learning Outcomes: The goal of this sequence is to learn a variety of standard algebraic theories and techniques. Topics will include

(1) The important parts of category theory.
(2) Linear algebra and multilinear algebra.
(3) Modules over algebras, and in particular finite-dimensional algebras. Semisimplicity and complete reducibility.
(4) Working with presentations.
(5) Group theory. Representations of finite groups.
(6) Commutative algebra. Elements of algebraic geometry.

Learning Environment: The University of Oregon strives for inclusive learning environments. Please notify me if the instruction or design of this course results in disability-related barriers to your participation. You are also encouraged to contact the Accessible Education Center in 164 Oregon Hall at 541-346-1155 or `uoaec@uoregon.edu`. If you are entitled to extra time on exams, make sure to contact the AEC more than one week prior to the exam!

Academic Conduct: The code of student conduct and community standards is at:

`http://conduct.uoregon.edu`

It is not appropriate to help each other on exams, to look at other students exams, or to bring unauthorized material to exams. Any type of academic dishonesty will not be tolerated! Policies for homework were outlined above.