

MA 765
Algebraic Geometry
Fall 2022, MWF 1-1:50
Whitehall Classroom Building 345-CB

Instructor: Dave Jensen

Office: POT 733

Email: dave.h.jensen@gmail.com

Course Website: [www.ms.uky.edu/~dhje223/MA 765 Fall 2022.html](http://www.ms.uky.edu/~dhje223/MA_765_Fall_2022.html)

Course Description: This course will serve as a gentle introduction to algebraic geometry. While we will assume familiarity with some basic ring theory, we will attempt to include as many students as possible, sticking to a classical perspective throughout and devoting a significant portion of class time to illustrative examples. Time permitting, we will cover affine and projective varieties, morphisms of varieties, Hilbert's Nullstellensatz, sheaves, schemes, and sheaf cohomology.

Materials: There is no required text for this class. Some *suggested* references are:

- *Algebraic Geometry* Robin Hartshorne
- *Algebraic Geometry, a First Course*, Joe Harris.
- *Algebraic Curves, an Invitation to Algebraic Geometry*, Bill Fulton (available online as a pdf).
- *Introduction to Algebraic Geometry*, Brendan Hassett.
- *An Invitation to Algebraic Geometry*, Karen Smith, Lauri Kahanpaa, Pekka Kekalainen, and William Traves.

Homework: There will be no homework in this course.

Exams: There are no exams in this course.

Academic Integrity: Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website: <http://www.uky.edu/Ombud> . A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Part II of Student Rights and Responsibilities (available online <http://www.uky.edu/StudentAffairs/Code/part2.html>) states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about the question of plagiarism involving their own work, they are obliged to consult their instructors on the

matter before submission.

When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording or anything else from another source without appropriate acknowledgment of the fact, the students are guilty of plagiarism. Plagiarism includes reproducing someone else's work, whether it be a published article, chapter of a book, a paper from a friend or some file, or something similar to this. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be.

Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone. When a student's assignment involves research in outside sources of information, the student must carefully acknowledge exactly what, where and how he/she employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas which are so generally and freely circulated as to be a part of the public domain (Section 6.3.1).

Please note: Any assignment you turn in may be submitted to an electronic database to check for plagiarism.

Accommodations Due to Disability: If you have a documented disability that requires academic accommodations, please see me as soon as possible. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, email address: jkarnes@email.uky.edu) for coordination of campus disability services available to students with disabilities.

Suggestions and Other Course Issues: Suggestions for improvement are welcome at any time. Any concern about the course should be brought first to my attention. Further recourse is available through the Mathematics Director of Undergraduate Studies and the Department Chair, both accessible from the Main Office in 715 Patterson Office Tower.