

Syllabus
MA419 and MA519 Polynomial Expansions
Spring Term, 2022

Course Instructor

Instructor: Ivan Mann, PhD

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Office: U4106

Office hours: Monday 10:00 - 11:00, Thursday 3:00 - 4:00

Withdrawal The last day to drop this course without the payment of full tuition and fees is January 18, 2022. The last day to withdraw from this course with a grade of W is March 22, 2022.

Note The Course Instructor reserves the right to make changes to the course syllabus prior to or during the term. The Course Instructor will notify students, via email or Canvas Announcement, when changes are made in the requirements and/or grading of the course.

Class Meetings

Thursdays, 5:00 pm to 7:30 PM in UH4004. Students are expected to arrive promptly at 5:00 PM for each class meeting in order to receive credit for the class activities. Since class participation is a significant percent of your grade, punctuality is expected. If you commute to campus, leave time for unexpected parking and traffic delays when planning your trip to campus. In the event a student arrives after 5:00 PM (5:01 PM is late), partial credit for the class meeting grade may be awarded at the instructor's discretion.

Masks and Covid

UAB policy requires masks at all times inside any building. Common sense and courtesy require masks in any close encounters outside.

Proposed list of Topics

(subject to change based on course progress)

- Binomial expansions of real valued and complex valued binomials
- Coefficients of expanded terms of polynomials
- Expansions with non-whole number exponents
- Applications of binomial expansions

- Convergence of an expansion
- Roots of numbers
- Finding roots with expansions
- Polynomial expansions of expressions with more than two terms
- Methods for determining π
- Determining π by series expansions
- Taylor polynomials and series

Text

No text is required. There will be notes available on Canvas before most classes, but you should bring a notebook to every class.

Regular Class Meetings

Each Thursday meeting will usually include a number of exercises and group activities. Each student will receive a class meeting grade based upon the work submitted at the end of the meeting. Exercises and activities must be completed and submitted on the day of class. No make-ups are given for missed meetings and assignments/activities. Students will work in groups each class meeting.

The format of class meetings will be lecture and examples for about an hour, followed by individual problems. Each student will be responsible for one problem and will present that problem on the board in front of the class. The problems will be solved by the class as a group working together, but presented individually.

Homework

Homework may be assigned periodically. The homework grade will be included in the class meeting grade for the date on which the homework is submitted and due. Late work is not accepted.

Grade

Your final course grade will be determined as follows:

Class meeting grade average	50% of final grade
Mid-term test	20% of final grade
Second test	20% of final grade
take home final	10% of final grade

Letter grade computation:

90 - 100	A
80 - 89	B
70 - 79	C
60 - 69	D
0 - 59	F

Graduate Students The standards for graduate students in the course are higher than the standards for undergraduates. The course will include more advanced work for graduate students. In class work will be more advanced and there will be additional questions on the tests.

Day of Mid-term test: Thursday, February 17

Day of End-term test: Thursday, April 28

DSS Accessibility Statement

UAB is committed to providing an accessible learning experience for all students. If you are a student with a disability that qualifies under Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act, and you require accommodations, please contact Disability Support Services for information on accommodations, registration and procedures. Requests for reasonable accommodations involve an interactive process and consist of a collaborative effort among the student, DSS, faculty and staff.

If you are registered with Disability Support Services, please contact DSS to discuss accommodations that may be necessary in this course. If you have a disability but have not contacted Disability Support Services, please call 934-4205 or visit <http://www.uab.edu/dss> or Hill Student Center Suite 409.

Title IX Statement

The University of Alabama at Birmingham is committed to providing an environment that is free from sexual misconduct, which includes gender-based assault, harassment, exploitation, dating and domestic violence, stalking, as well as discrimination based on sex, sexual orientation, gender identity, and gender expression. If you have experienced any of the aforementioned conduct we encourage you to report the incident. UAB provides several avenues for reporting.

For more information about Title IX, policy, reporting, protections, resources and supports, please visit <http://www.uab.edu/titleix> for UAB's Title IX Policy, UAB's Equal Opportunity, Anti- Harassment Policy and Duty to Report and Non-Retaliation Policy.