

Advising Newsletter

Department of Mathematics and Statistics

Dear Majors and Minors in the Department of Mathematics and Statistics:

Registration for Fall 2022 classes will begin on April 5th. To prepare for registration, all majors will meet with their advisors, and minors are also encouraged to do so. You will hear from your advisor soon regarding scheduling for your advising appointment. In advance of your appointment, please review your academic requirements page in PAWS, consider your educational and career goals, and identify potential courses for the spring semester.

Here are several department announcements that you should be aware of:

1. *Highlights and recent curricular changes:*

- *Course offerings:* A list of the upper-level course offerings for the spring semester may be found at the end of this letter. Note that this includes the following courses which are not offered annually: MAT303 Cryptography and Coding Theory, MAT330 Mathematical Biology, MAT426 Partial Differential Equations, and MAT440 Mathematical Logic.
Our senior seminars MAT426 and MAT440 are designed as small seminar experiences, and therefore enrollments will be kept low. As applied math students are required to take a 400-level applied math class, most seats in MAT426 will be taken by applied math seniors. Math seniors, all juniors, and minors will be able to enroll if space permits.
- *Seminar requirement:* Math/Stat majors must attend four department colloquia in their junior year or fall semester of senior year as a prerequisite for their capstone course. All students should attempt to meet this expectation.

2. *Study abroad:* International programs are beginning to reopen their doors. Explore links from our website (Academics -> Other Academic Opportunities -> Study Abroad and Study Away) to learn about international math programs, international student teaching, and TCNJ international programs. The department encourages students to consider study abroad opportunities. Students considering study abroad should discuss this with their advisors.

3. *Research, Internship, and Learning Assistant courses:* The department encourages students to engage in undergraduate research under the mentorship of a faculty member, to pursue academic credit for internships, and to explore pedagogy by acting as a learning assistant. Details about these opportunities are available on the website or by contacting Prof. Curtis or Prof. Liebars, and of course you are welcome to talk to your advisor about these options. Look for updates in the next few weeks from Dr. Mizuhara regarding research options and from Dr. Liebars regarding Learning Assistant options.

4. *Departmental Honors.* To earn departmental honors, students must have a 3.5 GPA in mathematics and statistics courses, complete an Independent Research 493 course during the junior year or the fall of the senior year, write a thesis, and give a research talk. Interested students should normally reach out to a potential research mentor by their junior year to discuss possible research projects.

5. *2022-23 Course Listings:* A full list of the upper-level course offerings for 2022-2023 may be found at the end of this letter.

6. **Liberal Learning Courses:** The list of Liberal Learning courses that satisfy specific domains or civic responsibilities can be found at:
<https://liberallearning.tcnj.edu/approved-courses-for-liberal-learning/>
7. **Waitlists and seat reservations.** The Department will again have a waitlist for all closed classes. If a math or stat class you are interested in is closed, you should fill out the Google waitlist form using the link on the department homepage.
 Some courses have seat reservations to help ensure that students from different specializations and majors can take the course. If you are unable to register for an open section due to seat reservations, please try to register for another section of the course. If none fit your schedule, please add your name to the waitlist.
8. **Minors:** Students with minors should plan their schedule so that they can complete the minors, if possible, before their last TCNJ semester. A few students have experienced problems where a required course for the minor conflicts with the required capstone for their major.
9. **Required units for graduation:** As you plan your schedule, please remember that in addition to completing the specific course requirements for Liberal Learning and the major, you must complete 32 course units to graduate.
10. **Computer Science courses:** Math majors interested in taking upper level computer science courses or pursuing a Computer Science minor need to take CSC 270 or the half-unit course CSC 271. Note that the half-unit course CSC 271 is offered in spring only.
11. **Differential Equations.** Students considering the Applied Mathematics specialization should take MAT 326: Differential Equations as early as possible in their college career, ideally no later than the end of the sophomore year.
12. **Preparing for future Capstone Courses:** Students should plan their schedules so that they meet the prerequisites listed below for their capstone course. In addition all students must attend four seminar/colloquium presentations in their junior and senior years prior to enrolling in the capstone course.
 - For Applied Mathematics: Prerequisites: Senior Standing and completion of MAT 310, MAT 326, CSC 220 (or CSC 250), and two 300/400 MAT or STA options. Corequisites: Two additional 300/400 MAT or STA options.
 - For Mathematics: Prerequisites: Senior Standing, and completion of MAT 305, 310, one MAT 400-level course and one additional 300/400-level MAT course. Corequisites: Two additional MAT 300/400 courses.
 - For Statistics: Senior Standing, and completion of MAT 316 and two 300-level courses. Corequisite: STA 410.
 - For Mathematics Secondary Education: MTT 390 and meeting all the criteria for admission for student teaching including completion of STA 216, MAT 301, MAT 351, and MAT 305, and all but at most 3 of their required mathematics courses, at least B- in MTT 390, and cumulative average of at least 3.0.

We wish you a successful registration session. Please write or see us if you have any questions!
 Sincerely,

Professor Cynthia Curtis
 Chair
 Department of Mathematics and Statistics

Professor Cathy Liebars
 Associate Chair
 Department of Mathematics and Statistics

Upper Level Course Offerings for 2022-2023

Fall:

MAT 301: Number Theory
MAT 303: Cryptography and Coding Theory*
MAT 305: Abstract Algebra
MAT 310: Real Analysis
MAT 316: Probability*
MAT 326: Differential Equations
MAT330: Mathematical Biology*
MAT 351: Geometry
MAT 426: Partial Differential Equations*
MAT 440: Mathematical Logic
MTT 380: Methods of Teaching Mathematics I
MTT 390: Methods of Teaching Mathematics II
STA 303: Design of Experiments
STA 305: Regression Analysis
STA 404: Computational and Bayesian Statistics

Spring:

STA 216: Statistical Inference and Probability for Educators
MAT 255: Perspectives on the Development of Mathematics
CSC 271: Discrete Structures of Computer Science for Math Majors (.5 unit)
MAT 275: Sophomore Seminar
MAT 301: Number Theory
MAT 305: Abstract Algebra
MAT 310: Real Analysis
MAT315: Topics in Linear Algebra*
MAT 326: Differential Equations
MAT 351: Geometry
MAT 451: Seminar in Algebra
MAT 497: Topics in Secondary Mathematics from an Advanced Viewpoint
MAT 498: Capstone
MTT 390: Methods of Teaching Mathematics II
MTT 490: Clinical Practice II
SED 498: Mathematics Secondary Education Capstone
STA 306: Applied Multivariate Analysis
STA 410: Mathematical Statistics
STA 498: Statistics Capstone

* indicates an Applied Mathematics Option

Bold indicates a course that is not offered every year

Italics indicates that plans for the course remain tentative.