

Advising Newsletter

Department of Mathematics and Statistics

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

Registration for Spring 2021 classes will begin on November 2nd. 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:**

- *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: MAT320 Complex Analysis, MAT331 Numerical Analysis, and MAT453 Seminar in Analysis.
- *Spring 2021 Capstone Courses:* Current seniors in math and applied math should enroll in MAT 498. Math majors (unspecialized) should enroll in section 1 with Dr. Curtis. Applied math majors must enroll in section 2 with Dr. Mizuhara. Math majors (unspecialized) who are interested in taking section 2 should email Prof. Curtis for consideration. Data Science and Statistics majors should enroll in STA498.

Current juniors planning to graduate in December, 2022 should also take the capstone this spring. Juniors should contact Prof. Curtis for permission to take the course.

- *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. The department recognizes that opportunities for attendance were limited last year. If you should take a capstone course this spring but cannot meet the seminar requirement, please discuss this with your advisor and contact Prof. Curtis.
 - *MAT497:* This course is now offered in the spring only; Mathematics Secondary Education students should plan to take this in the spring of the junior year.
2. **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 or to a professor whom you would like to do research with about these options. In addition, Dr. Liebars will send an email soon regarding Learning Assistant options.
3. **Sophomore Seminar and academic load:** The sophomore seminar (MAT 275) is a half unit course normally taken in the sophomore year by all math, applied math, data science, and statistics students. Many of our students enroll in 4.5 (or occasionally 3.5) units for the spring. Some students may want to enroll in a half-unit course to complement the sophomore seminar. A half-unit research

or guided study course may be an option. Another option is MAT270: Topics in Mathematics - Computational Mathematics, a half unit course focusing on programming skills, which will meet the second computer science correlate requirement for applied mathematics majors. The Department of Computer Science will run CSC271 (a half unit course for students wishing to take upper level computer science courses or to pursue a minor in computer science) if at least three students are interested. Students should contact Prof. Curtis if interested. Finally, there are several spring half-unit courses offered in the School of Business: FIN201, IST201, MGT201, and MKT201.

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. **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.
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. Students interested in taking this course this spring should contact Prof. Curtis.
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 C+ 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 Spring, 2022

MAT 301: Number Theory

MAT 305: Abstract Algebra

MAT 310: Real Analysis

MAT320: Complex Analysis

MAT 326: Differential Equations

MAT331: Numerical Analysis*

MAT 351: Geometry

MAT 452: Seminar in Analysis (Real Analysis II)

MAT497: Topics in Secondary Mathematics from an Advanced Viewpoint

MAT 498: Capstone

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.