

## **Advising Newsletter**

### **Department of Mathematics and Statistics**

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

Registration for Fall 2020 classes will start April 7th. We cannot emphasize enough the importance of meeting (virtually) with your advisor in times like these to discuss your academic plans, progress, and career goals. There is an advising hold on your account that your advisor must release before you can register. If you haven't already heard from your advisor, please reach out to them to arrange a meeting. Here are a number of general department announcements that you should be aware of:

1. *Highlights and recent curricular changes:*

- *Cryptography*: MAT 370-01 in Fall 2020 will be taught by Dr. Schmoyer.
- *Applied Mathematics Depth Requirement*: The Department has approved eliminating the depth requirement for students in the Applied Mathematics specialization, effective as of the Fall 2020 semester.
- *Learning Assistants*: Dr. Liebars sent out an email about Learning Assistants on March 20<sup>th</sup>. We are looking for Learning Assistants for the fall for the following courses: MAT 105, MAT 120, MAT 127, MAT 128, MAT 200, MAT 205, STA 215, MAT 301, MAT 326. Learning assistants enroll in the course MTT 3XX (the number is still to be determined): Learning Assistant in Math Education, as a half unit course. Learning Assistants will attend the class for which they are acting as an assistant, assist the professor of the course as appropriate, hold office hours, and write a paper at the end of the semester about the experience.

If you are interested in being a Learning Assistant in the fall semester for one of the courses below, please write a brief essay describing your background for being a Learning Assistant and why you would like this experience. Please indicate for which courses from the list below you would be willing to serve as a Learning Assistant, in order of preference. Please send the essay to Dr. Liebars no later than April 10.

**Learning Assistant Requirements:** a) The student must have taken at TCNJ at least four course units in math; b) A student must have at least an A- in the course they plan to be an intern, where relevant; c) A student must have at least a 3.0 Math GPA; and d) a student can take a maximum of one course unit of MTT 3XX.

2. *2020-21 Course Listings*: The courses MAT 101, 102, 105, 106, 119, 120, 125, 127, 128, 200, 205, 229, MTT 202, STA 115, 215 are offered every semester. The chart below lists the upper-level course and other course offerings for the upcoming year. The list of all regular offerings can be found on the course offering page of our web site.

3.

<i>Fall 2020 Semester (# of sections)</i>	<i>Spring 2021 Semester (# of sections)</i>
	MAT 255: Perspectives in the Development of Mathematics (2)
	MAT 270: Topics in Mathematics (.5 units) (Computational Mathematics)
	MAT 275: Sophomore Seminar (.5 units, 1-3)
MAT 301: Number Theory (1)	MAT 301: Number Theory (2)
MAT 305: Abstract Algebra (2)	MAT 305: Abstract Algebra (1)
MAT 310: Real Analysis (1)	MAT 310: Real Analysis (2)
MAT 316: Probability (2)	<b>MAT 315: Topics in Linear Algebra* (1)</b>
MAT 326: Differential Equations (1)	MAT 326: Differential Equations (2)
<b>MAT 330: Mathematical Biology* (1)</b>	
MAT 351: Geometry (1)	MAT 351: Geometry (1)
<b>MAT 370: Topics in Mathematics* (Cryptography) (1)</b>	
<b>MAT 402: Advanced Calculus with Topology (1)</b>	<b>MAT 451: Seminar in Algebra (Group Theory) (1)</b>
<b>MAT 426: Partial Differential Equations* (1)</b>	MAT 498: Capstone (2)
MAT 497: Topics in Secondary Mathematics from an Advanced Viewpoint (1)	
MTT 380: Methods of Teaching Mathematics I (1)	MTT 490: Clinical Practice II (as needed)
MTT 390: Methods of Teaching Mathematics II (1)	SED 498: Math Secondary Ed Capstone (1)
MTT 490: Clinical Practice II/ SED 498 (as needed)	
STA 216: Statistical Inference and Probability (2)	STA 306: Applied Multivariate Analysis (1)
STA 305: Regression Analysis (2)	<b>STA 404: Computational and Bayesian Statistics (1)</b>
<b>STA 314: Statistical Quality Control</b>	STA 410: Mathematical Statistics (1)
	STA 498: Capstone (1)

\* indicates an Applied Mathematics Option

**Bold** indicates a course that is not offered every year.

4. 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/>

<https://liberallearning.tcnj.edu/fulfilling-requirements/approved-liberal-learning-courses/>

5. *Internships*: The department offers students the opportunity to earn academic credit for internships with the courses MAT 299/399, STA 299/399, and MTT 299. For more information, please see the department webpage for details and contact internship coordinators Dr. Mizuhara, Dr. Ochs, and Dr. Liebars (for MTT 299).
6. *Waiting Lists*. The Department will again have a waiting list for all closed classes. Once your registration time opens up, if a class is closed, you should fill out the Google wait list form (the link is at the top right of our web site). As students change courses, and spots open up in closed classes, the Department will fill the spots with students from the wait-list. The wait list should be used only when there is a closed section that you need to enroll in and there is no open section that fits your schedule.
7. *Seat Reservations*: Some courses have seat reservations to help ensure that students from different specializations and majors can take the course. At registration, a course might be listed as open, but because of seat reservations, PAWS might not allow you to register for the course. If you experience this, please try to register for another section of the course. If none fit your schedule, please let us know by filling out the waitlist. We will do our best to see if you can be enrolled.
8. *Seminar requirement*: Math/Stat majors must attend four department colloquia in their junior year or senior year (fall semester) as a prerequisite for their capstone course. There will plenty of opportunities in the fall semester for seniors to meet this requirement, given the cancellation of on-campus classes this spring.
9. *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.
10. *Computer Science courses*: Students interested in taking upper level computer science courses or pursuing a Computer Science minor should consider the new Computer Science course CSC 271: Discrete Structures of Computer Science for Math Majors. The course meets once a week and is worth .5 course units and is for students who have taken MAT 200. Completion of this course allows students to register for CSC courses that have CSC 270 as a prerequisite. Interested students should contact Prof. Salgian ([salgian@tcnj.edu](mailto:salgian@tcnj.edu)) in the CS department.
11. *Differential Equations*. All students considering the Applied Mathematics specialization should take MAT 326: Differential Equations as early as possible in their college career, and if possible, no later than the end of their sophomore year. We have reserved seats in the course for applied math students and all sophomore math majors.
12. *Capstone Courses*: All senior Mathematics and Statistics majors are required to complete a capstone course (MAT/STA 498). These courses are only offered in the Spring semester. When planning your fall schedule, you should ensure that your schedule will allow you to take the

capstone course in the spring. Also, students who expect to graduate in Fall 2021 will need to take the capstone course in the Spring 2021 semester. Secondary Education students take the capstone course SED 498 that accompanies MTT 490: Clinical Practice II. Please make sure that you have completed the necessary prerequisites for the capstone. Remember that one of the prerequisites for the capstone is to attend four seminar/colloquium presentations in your junior and senior years prior to taking the capstone course. We expect that students currently enrolled in the capstone courses will be giving virtual online presentations at the end of the Spring semester. Other students, especially juniors, are encouraged to attend these presentations. The department will send out announcements and links to these presentations.

*Capstone Courses Requirements:* Student should plan their schedules so that they meet the following prerequisites for their 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.

13. *Departmental Honors.* Departmental honors are awarded by our department at graduation and appear on one's transcript. They are independent of the College's Honors Program, and the Latin honors (*summa cum laude*, ...) awarded at graduation. To earn departmental honors, students must have a 3.5 GPA in mathematics and statistics courses and complete the following:

- A student must engage in independent research during their junior or senior year. The student should successfully complete an Independent Research 493 course during a semester they spend on-campus, and prepare a paper which will be due the middle of their last (graduating) term. A presentation (which we envision being a 40 minute talk, perhaps during a lunch period) will be given in the two week period following the submission of the paper. The members of the student's Honors Committee will be present, and be given ample opportunity to ask the students questions about their research to gauge their level of understanding.

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

Sincerely,

Professor Thomas Hagedorn  
Chair  
Department of Mathematics and Statistics

Professor Cathy Liebars  
Associate Chair  
Department of Mathematics and Statistics