

Advising Newsletter Department of Mathematics and Statistics

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

Registration for Fall 2019 classes will start April 2nd. We cannot emphasize enough the importance of meeting with your advisor to discuss your academic plans, progress, and career goals. To encourage you, every non-graduating student who meets with their advisor will be entered to win a **\$25 gift card** from the bookstore. To enter the raffle, please pick up an entry form when you meet with your advisor. Fill out the information and drop the form into the box in the department office. We'll draw and announce the winner once registration is over. If you haven't met with advisor yet, please reach out to them to arrange a meeting. Good luck in the drawing!

Here are a number of general department announcements that you should be aware of:

1. *Highlights and recent curricular changes:*

- *Graph Theory:* MAT 370-01 in Fall 2019 will be taught by Dr. Reimer.
- *Math Education Requirements:* Clinical Practice I and II must be taken in the fall and spring of your senior year, respectively. MTT 380 must be taken prior to Clinical Practice I and it is only offered in the fall semester. Therefore, anyone who intends to graduate by 2021 must take MTT 380 this fall.
- *Math/Stat Research Forum:* Interested in doing undergraduate math/stat research? There will be a department forum on Friday, March 29th at 12:30 in SCP 229. Come hear about opportunities for math/stat research in the department!
- *Instructional Interns:* We are looking for Instructional Interns for the fall for the following courses: MAT 105, MAT 127, MAT 128, MAT 200, STA 216, MAT 205, MAT 301, MAT 326. Instructional interns enroll in MTT 299, Internship in Math Education, for a half unit or full unit. They attend the class for which they are acting as an intern, 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 doing an instructional internship in the fall semester for one of the courses below, please write a brief essay describing your background for doing the internship and why you would like this experience. Please indicate for which courses from the list below you would be willing to serve as an intern, in order of preference. Please send the essay to Dr. Liebars no later than April 1. For each 50 hours of the internship, students will each .25 of course unit credit. Please check the email from Dr. Liebars for more info.

Instructional Internship Criteria: 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 3.3 Math GPA; and d) a student can take a maximum of one course unit of MTT 299.

2. *2019-20 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.

<i>Fall 2019 Semester (# of sections)</i>	<i>Spring 2020 Semester (# of sections)</i>
	MAT 255: Perspectives in the Development of Mathematics (2)
	MAT 270: Sophomore Seminar (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 (1)	MAT 320: Complex Analysis (1)
MAT 326: Differential Equations (1)	MAT 326: Differential Equations (2)
MAT 341: Computational Mathematics* (1)	MAT 331: Numerical Analysis* (1)
MAT 351: Geometry (1)	MAT 351: Geometry (1)
MAT 370: Topics in Mathematics (Graph Theory) (1)	
MAT 405: Topology (1)	MAT 453: Seminar in Algebra (1)
MAT 454: Applied Dynamical Systems* (1)	MAT 498: Capstone (2)
MAT 497: Topics in Secondary Mathematics from an Advanced Viewpoint (1)	
MTT 380: Methods of Teaching Mathematics I (1)	
MTT 390: Methods of Teaching Mathematics II (1)	
MTT 490: Clinical Practice II/ SED 498 (as needed)	MTT 490: Clinical Practice II (as needed)
	SED 498: Math Secondary Ed Capstone (1)
STA 216: Statistical Inference and Probability (3)	STA 306: Applied Multivariate Analysis (1)
STA 303: Design of Experiments (1)	STA 307: Data Mining and Predictive Modeling (1)
STA 304: Sampling and Non-parametric Statistics (1)	
STA 305: Regression Analysis (2)	
	STA 410: Mathematical Statistics (1)
	STA 498: Capstone (1)

* indicates an Applied Mathematics Option

Bold indicates a course that is not offered every year.

3. *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).
4. *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.
5. *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 let 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.
6. *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.
7. *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.
8. *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) in the CS department.
9. *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.
10. *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 2019 will need to take the capstone course in the Spring 2019 semester. 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. Students currently enrolled in a capstone will be giving presentations at the end of the Spring semester. Other students, especially juniors, are encouraged to attend.

Capstone Courses Requirements: Mathematics (non-ed) students 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.

11. *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.

There will be Honors presentations in April in the department. Students considering departmental honors should attend these presentations.

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