October 2020

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 3rd. 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:*

●  *MAT 270*: Topics in Mathematics – Computational Mathematics is a new half-unit course this spring. Applied math students who take this course this spring may use this to meet the second computer science correlate requirement for the Applied Mathematics specialization.

●  *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 in the spring and remain so this semester. If you should take MAT498 or STA498 this spring but cannot meet the seminar requirement, please discuss this with your advisor and contact Prof. Curtis.

●  *Prerequisites for STA404:* These have been changed. The new prerequisites are: STA305, CSC230 OR CSC250 OR CRI215, MAT205

●  *Retention standards:* These have been changed. Students entering the major beginning this semester will be required to attain a grade of C- or better in both MAT200 and MAT229.

Students who entered the major between Fall, 2018 and Fall, 2020 have a retention standard of a 2.5 GPA for the courses MAT127, MAT128, MAT200, MAT205, and MAT229. Students who do not meet this standard but who meet the new standard may contact Prof. Curtis to request a waiver of the old standard.

1. *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. MAT270 (above) is one option, and CSC271 is another good option for student wishing to take upper level computer science courses or to pursue a minor in computer science (see below). A half-unit research or guided study course may also be an option, and there are several spring half-unit courses offered in the School of Business: FIN201, IST201, MGT201, and MKT201.
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.
3. *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. Below is a list of the upper- level course offerings for the spring semester.

MAT 255: Perspectives in the Development of Mathematics

**MAT 270: Topics in Mathematics (Computational Mathematics)** (.5 units)

MAT 275: Sophomore Seminar (.5 units)

CSC 271: Discrete Structures of Computer Science for Math Majors (.5 units)

MAT 301: Number Theory

MAT 305: Abstract Algebra

MAT 310: Real Analysis

**MAT 315: Topics in Linear Algebra\***

MAT 326: Differential Equations

MAT 351: Geometry

**MAT 451: Seminar in Algebra (Group Theory)**

MAT 498: Capstone

MTT 490: Clinical Practice II

SED 498: Math Secondary Ed Capstone

STA 306: Applied Multivariate Analysis

STA 404: Computational and Bayesian Statistics

STA 410: Mathematical Statistics

STA 498: Capstone

\* indicates an Applied Mathematics Option

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

1. *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/>

1. *Study abroad:* The department encourages students to consider study abroad opportunities. While this is not currently an option, we look forward to it being feasible again in the future. Students considering study abroad in future years should discuss this with their advisors. In addition to TCNJ-sponsored programs, there are a few international programs in mathematics and mathematics education. See our website for more information.
2. *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.

1. *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.
2. *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. Both courses will be offered this spring.
3. *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.
4. *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. Marcus. Applied math majors must enroll in section 2 with Dr. Gevertz. 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, 2021 should also take the course this spring. Juniors should contact Prof. Curtis for permission to take the course.

1. *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 math, applied math, data science, and statistics 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.
2. *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.

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

Professor Cynthia Curtis Professor Cathy Liebars

Chair Associate Chair

Department of Mathematics and Statistics Department of Mathematics and Statistics