October 2023

Advising Newsletter
Department of Mathematics and Statistics

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

Registration for Spring and Summer 2024 classes will begin on November 7th. 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 some following courses which are not offered annually: MAT 370: Topics in Mathematics (Topic: Graph Theory), STA 307: Data Mining and Predictive Modeling and STA 318: Operations Research. Please contact Dr. Reimer for MAT370; Dr. Nardini for STA 307, and Dr. Navard for STA318, for more information about these courses.
   - *Spring 2024 Capstone Courses:* Current seniors in math and applied math should enroll in MAT 498. Current juniors planning to graduate in December, 2023 should also take the capstone this spring.
     Students with a Mathematics Specialization should enroll in section 1 with Dr. Curtis.
     Students with an Applied Mathematics Specialization must enroll in section 2 with Dr. Mizuhara. Students with an Applied Mathematics Specialization who are interested in taking section 1 (Dr. Curtis) should email Prof. VanderSandt for consideration. Math and Applied Math Specialization Juniors should contact Prof. VanderSandt for permission to take the Capstone course.
     Students with a Data Science and Statistics Specialization should enroll in section 2 with Dr. Mizuhara. Juniors should contact Prof. VanderSandt for permission to take the Capstone course.
     Math Secondary Education seniors who are doing Clinical II in the Spring should enroll in Dr. Liebars' section of SED 498.
   - *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. If you should take a capstone course this spring but cannot meet the seminar requirement, please discuss this with your advisor and contact Prof. VanderSandt.

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. VanderSandt 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 students from all specializations. 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. The Department of Computer Science will offer CSC 271 -Discrete Structures for Math Majors (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 Dr. Salgian (Chair of CS), 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 reach out to a potential research mentor by their junior year to discuss possible research projects.

5. ***Study abroad:*** The department encourages students to consider study abroad opportunities. Students considering study abroad should discuss this with their advisors. Explore links from our website:
Study Abroad and Study Away | Mathematics and Statistics at TCNJ

6. ***a) Liberal Learning Requirements (for students who enrolled Fall 2015 until Spring 2023):*** 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/
A new search tool for identifying liberal learning courses is available here:
Liberal Learning Course Search Tool

b) College Core Requirements for Mathematics Majors - All Specializations (for students who enrolled Fall 2023 and afterward AND students changing into Major after Fall 2023)
The list of approved college courses for the College Core requirements can be found at:
Approved Courses for College Core | The College Core (tcnj.edu)

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.
Mathematics and Statistics Wait List Request (google.com)
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. ***STA 215 sections:*** Several sections of STA215 are reserved for students in other majors. Students from all specializations should enroll in sections 1 and 2 with Dr. Navard or 3 and 4 with Dr. Sokolov.

9. ***STA 318 (Operations Research):*** The new prerequisites are MAT 128 (Calculus B) and MAT 200 (Proof Writing through Discrete Mathematics) and no longer MAT 316 (Probability).

10. ***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.

11. ***Required units for graduation**:* As you plan your schedule, please remember that in addition to completing the specific course requirements for Liberal Learning/ College Core and the major, you must complete 32 course units to graduate.

12. ***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. Dr. Salgian (Chair of CS).

13. ***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.

14. ***Preparing for future Capstone Courses**:* Students should plan their schedules so that they meet the prerequisites listed 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. Please consult the appropriate webpage for your specialization, paying special attention to Options and Correlates; your four year planner, Checklist for graduation, Science Requirements and other important information:
    - For Applied Mathematics Specialization Students:
      Mathematics (Applied Mathematics specialization) | Mathematics and Statistics at TCNJ
    - For Mathematics Specialization Students:
      Mathematics (Mathematics specialization) | Mathematics and Statistics at TCNJ
    - For Data Science and Statistics Specialization Students:
      Mathematics (Data Science and Statistics) | Mathematics and Statistics at TCNJ
    - For Mathematics Secondary Education Students:
      Mathematics Secondary Education | Mathematics and Statistics at TCNJ

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

Dr. Su VanderSandt
Chair
Department of Mathematics and Statistics

Dr. Dave Reimer
Associate Chair
Department of Mathematics and Statistics

Upper Level Course Offerings for Spring, 2024

MAT 255: Perspectives on the Development of Mathematics
MAT 301: Number Theory
MAT 305: Abstract Algebra
MAT 310: Real Analysis
MAT 326: Differential Equations
MAT 331: Numerical Analysis *
MAT 370: Topics in Mathematics (Topic: Graph Theory) *
MAT 351: Geometry
MAT403: Advanced Calculus with Topology *
MAT497: 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 216: Statistical Inference and Probability for Educators
STA 307: Data Mining and Predictive Modeling *
STA 318: Operations Research *
STA 410: Mathematical Statistics
STA 498: Statistics Capstone

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