March 2018

Advising Newsletter for Fall 2018 Classes
Department of Mathematics and Statistics

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

Registration for Fall 2018 classes will take place April 3-13th and advising is now starting. I cannot emphasize enough the importance of meeting with your advisor to discuss your academic plans, progress, and career goals. To encourage you to meet with your advisor, every non-graduating student (so seniors graduating this Spring aren't eligible, sorry!) 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 have already met with your advisor, you can pick up the form in the office. If you haven't set up an advising appointment yet, please contact your advisor. Good luck in the drawing!

We have listed all this advising information on the math/stat website under "advising information."

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

1. *Course Offerings and Changes:*
    - *Schedule Changes*: Beginning this fall, MAT 316: Probability will only be offered in the fall semester and STA 410: Mathematical Statistics will only be offered in the spring. MAT 255: Perspectives on the Development of Mathematics will only be offered in the Spring.
    - *MAT 351*: *Geometry* will only be offered in the fall semester next year.
    - *MTT 390*: will not be offered again until the Fall 2019 semester. Thereafter, it will be offered in the fall semester.
    - *Math Options:* MAT 315: Topics in Linear Algebra will be offered in Fall 2018. In Spring 2019, MAT 330: Mathematical Biology and MAT 370: Topics in Mathematics (Cryptography, with a MAT 200 prereq) will be offered.
    - *Math 400 level courses in 2018-19:* MAT 451: Seminar in Algebra (Group Theory) and MAT 426: Partial Differential Equations will be offered in the fall semester. MAT 453: Seminar in Analysis will be offered in the Spring 2019 semester (see the appendix for a description of topics).
    - *Statistics Options:* STA 314: Statistical Quality Control will be offered in the fall. In the Spring, STA 306: Applied Multivariate Analysis and STA 370: Topics in Statistics (Computational and Bayesian Statistics) will be offered.
    - Precalculus has been renumbered as MAT 120 and will count as a regular, 1 course unit course that counts towards graduation, beginning with the Fall 2018 semester.

2. *Sections of Courses*. The following list shows the currently anticipated number of sections to be offered for the upper level courses in the major. The list of all regular offerings can be found on the course offering page of our web site: http://mathstat.pages.tcnj.edu/information-for-students/courses-2/courses/. The courses listed in bold are courses that were not offered during the

current year or are being offered in a new semester. Please take advantage of the opportunity to take them!

Fall 2018 Semester (# of sections)	*Spring 2019 Semester (# of sections)*
MAT 301: Number Theory (1)	MAT 301: Number Theory (2)
MAT 305: Abstract Algebra (2)	MAT 305: Abstract Algebra (1)
MAT 310: Real Analysis (2)	MAT 310: Real Analysis (2)
MAT 316: Probability (2)	
MAT 315: Topics in Linear Algebra*(1)	
MAT 326: Differential Equations (1)	MAT 326: Differential Equations (2)
	MAT 330: Mathematical Biology* (1)
MAT 351: Geometry (2)	
	MAT 370: Topics in Mathematics (Cryptography)*(expected) (1)
MAT 426: Partial Differential Equations* (1)	**MAT 453: Seminar in Analysis (1)**
MAT 451: Seminar in Algebra (Group Theory) (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 490: Student Teaching (as needed)	MTT 490: Student Teaching (as needed)
STA 305: Regression Analysis (2)	STA 306: Applied Multivariate Analysis (1)
STA 314: Statistical Quality Control (1)	**STA 370: Topics in Statistics (Computational and Bayesian Statistics)(1)**
	STA 410: Mathematical Statistics (1)
	STA 498: Capstone (1)

***** indicates an Applied Mathematics Option

3. *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 will appear on the math/stat website). 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.

4. *Seat Reservations*: Some courses, such as MAT 128, MAT 229, and MAT 326, 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

students 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 the problem can be solved.

5. *Computer Science prerequisite:* Thinking of pursuing a computer science minor or taking upper level computer science courses? CSC 270 is a prerequisite for many upper level CSC courses, but will be waived for math/stat major who take both MAT 200 and CSC 271, a .5 unit independent study course focusing on the topics in CSC 270 not covered in MAT 200. More information can be found at the end of this newsletter. Taking CSC 271 makes it easier for math/stat majors to take upper level CSC courses and pursue a computer science minor.

6. *Differential Equations*. All students in the Applied Mathematics specialization, and all students considering switching to the Applied Mathematics specialization should take MAT 326: Differential Equations as early as possible in their college career. It should be taken no later than the end of their sophomore year. We have reserved some seats in the course for applied math students and sophomore math majors (any specialization).

7. *Capstone Courses Requirements:* Each specialization's capstone course has prerequisites. Please ensure that you take the following courses before the semester you take the capstone course:
    - For Applied Mathematics: Prerequisites: Senior standing, MAT 310, MAT 326, CSC 220 or CSC 250, and two mathematics/statistics options at the 300/400 level. Corequisites: two additional mathematics/statistics options at the 300/400 level. At most three of the four options can be STA courses.
    - For Mathematics: Senior Standing, MAT 305, MAT 310, and two mathematics options at the 300-level or above, with at least one of these at the 400-level or above. Corequisites: two additional mathematics options at the 300-level or above.
    - For Statistics: Senior Standing, MAT 316 and two STA 300 level courses are a prerequisite.

8. *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 that accompanies their student teaching experience which can be done in either semester. 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 this semester. Other students, especially juniors, are encouraged to attend.

9. *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 is usually a 40 minute talk given during the 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 three Honors presentations in April in the department. Students considering departmental honors should attend these presentations.

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

Sincerely,

Professor Hagedorn
Chair, Department of Mathematics and Statistics

Appendix: **Information on CSC 271:**

Are you a Math major planning to minor in Computer Science or just take a Computer Science advanced course? In the past, you would have been required to take CSC 270: Discrete Structures of Computer Science.

There is now an alternative to this course: CSC 271: Discrete Structures of Computer Science for Mathematics Majors. This is a 0.5 unit blended course that has MAT 200 and CSC 220 as prerequisites and covers all the topics from CSC 270 that were not covered in MAT 200. Lectures and assignments are posted and submitted through Canvas, and the class meets 3 or 4 times during the semester. There will be a written final exam.

Since it is a 0.5 unit course, you can take it on top of your regular 4 courses without overloading, and you will be ready to take advanced Computer Science courses the following semester.

CSC 271 will be offered this fall; you can find it and register for it on PAWS. If you have any questions, email Dr. Salgian at salgian@tcnj.edu.

Seminar in Analysis Description: The course will focus on a study of series, sequences and series of functions, measure, category and integration. The course is motivated by the many paradoxical examples that gives real analysis its inherent fascination: bounded curves with infinite length, nowhere differentiable continuous functions, and non-measurable sets.