MAT 127 Syllabus, Fall 2020

MAT 127 is a course in infinite sums (series), polynomial approximations, and a very brief introduction to what we call ordinary differential equations.

By the end of the course, students will be able to work with infinite series and use them in a variety of situations, including:

- determine if a series converges and find the sum of certain infinite series,
- approximate transcendental functions with polynomials,
- use infinite series for approximating integrals.

Students will also be able to work with differential equations:

- understand graphically the behavior of solutions of first-order differential equations,
- solve separable differential equations and certain linear second-order differential equations,
- apply differential equations to a variety of situations in and outside mathematics.

MAT 127 will focus on concepts and theory as well as computations and applications. This is a 3-credit course.

Course information: All course materials and/or relevant web links can be accessed from *Blackboard*. In Blackboard menu, click on *Current Week* to access the description of the material, the pre-recorded videos and the homework. All information for the week, including any announcements of future tests or quizzes, will pe posted on this page.

Textbook: *Calculus,* Volume 2, by G. Strang and E. Herman. It is available for free download or online reading from OpenStax at `https://openstax.org/details/books/calculus-volume-2`. You can also access the book from the link in the Blackboard menu. MAT 127 will cover Chapters 5, 6, and 4 (in this order).

You will also need to purchase **WebAssign access**. WebAssign is an online homework system (we will use it in addition to traditional homework). You can access it from the link on Blackboard menu, or from *Course Tools*. Everyone has 2 weeks of free trial access, but after that you will need to pay. **WebAssign will be needed for homework and is mandatory for the course!**

Prerequisites: to take this course, you must have received

- a grade of C or higher in MAT 126, or else
- a rating of level 8 or better on the Mathematics Placement Examination.

Schedule and Instructors: the course is taught in several sections.

LEC 02, MW 6:05-7:25pm, Matthew Dannenberg, matthew.dannenberg@stonybrook.edu
grader: Hugo Mainguy, hugo.mainguy@stonybrook.edu

LEC 03, TuTh 3:00–4:20pm, Olga Plamenevskaya, olga.plamenevskaya@stonybrook.edu
grader: Phway Sandi San, phway.sandisan@stonybrook.edu

LEC 04, TuTh 9:45–11:05am, Olga Plamenevskaya, olga.plamenevskaya@stonybrook.edu
grader: Runjie Hu, runjie.hu@stonybrook.edu

Instructors' office hours are posted on *Blackboard*, in the *Announcements* and in *My Instructors* section.

Synchronous and asyncronous components: The course is taught entirely online. It includes short pre-recorded lectures as well as synchronous live Zoom meetings, held during the scheduled class slots. The pre-recorded lecture episodes can be found in *Course Documents* section of *Blackboard*, and are also posted on the *Current Week* page. Zoom meetings can be accessed from the link in Blackboard menu, or from *Course Tools*.

The pre-recorded lectures serve as a basic introduction to each topic. Live Zoom meetings offer in-depth discussions where students will learn to solve problems, and the instructor will answer questions and explain harder points in detail. Basic familiarity with the topic will be assumed during the Zoom meetings. To prepare for the Zoom meetings, you must watch the assigned video episodes and read the corresponding textbook sections ahead of time. You will also be required to complete a short "concept check" homework before each Zoom meetings (see the *Class Preparation Assignments* section below.) There is a Class Prep Assignment due on Aug 24, before the first meeting!

During the Zoom meetings, you will need to pay attention, ask questions, and answer poll-like questions on the discussed material (contributing to your *Attendance and Participation* score). **It is mandatory that you do the required preparation work before each Zoom meeting. Otherwise, you will not be able to follow the live discussion.**

Recordings of the past Zoom meetings will be made available on Blackboard, but you are expected to attend the live meeting.

Exams, tests and quizzes: All tests will be held online, the specific format for each test will be announced before the test.

The final exam is scheduled for Friday, Dec. 11, 2:15pm-5:00pm.

During the semester, several (approximately three to five) tests will be held during synchronous class meetings, in the scheduled class time slot. Additionally, short quizzes will be often given during synchronous class meetings as well. The dates of tests and quizzes will be announced on Blackboard and via email as the course progresses.

It is your responsibility to follow the test announcements and to take tests and quizzes when they are given. Schedule conflicts do not constitute a valid excuse. There will be no makeups for any tests during the semester. In the case of a longer test missed due to a properly documented medical reasons or exceptional "unforeseeable" circumstances beyond the student's control, the student's semester grade will be determined on the basis of their performance on the other tests and their other work on the topic. In certain cases, a Zoom interview with the instructor may be needed to evaluate the student's familiarity with the material of the missed test.

Homework: assigned weekly, with some problems graded electronically by WebAssign and other problems to be written up and submitted electronically to Blackboard. Homework for the current week is **due on Friday of the same week, at 11:59pm**. In particular, homework for the first week is due on Friday, Aug 28. You should start doing the homework early in the week.

Late written homework will be accepted until Monday, Movember 30, but with reduced credit: 50% credit if submitted within 7 days of the due date, 10% credit if more than 7 days after the due date. WebAssign must be completed by the due date/time.

Any trouble with homework? Please ask questions during Zoom meetings, we can go over a similar question!

Class Preparation Assignments: assigned twice weekly and due *before* each Zoom meeting, these assignments involve watching the pre-recorded lectures, reading the required textbook sections, and completing a very brief "concept check" homework, as well as posting questions on the Blackboard discussion board. For class preparation, no late work will be accepted.

Projects and Other Special Assignments: assigned sporadically over the semester, written projects will focus on exploring the context and solution of a more complicated problem or an additional topic. Other assignments may include explaining the process of solving a simpler problem in a short video submission or a brief video interview with an instructor or TA.

Grading policy:

35% Out-of-Class Work:

- 15% WebAssign and written homework
- 15% Projects and Other Special Assignments
- 10% Class Preparation Assignments

50% In-Class Work:

- 10% Attendance and Participation
- 10% Short Quizzes
- 30% In-Class Tests

10% Final Exam

If there is significant discrepancy between student's performance on different types of assessments, a Zoom interview may be scheduled, at the discretion of the instructor, to evaluate the student's knowledge and to help determine their semester grade.

Student Accessibility Support Center Statement:
If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Student Accessibility Support Center, 128 ECC Building, (631) 632-6748, or at sasc@stonybrook.edu. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Academic Integrity Statement
Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology and Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at `http://www.stonybrook.edu/commcms/academic_integrity/index.html`

Critical Incident Management
Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.