MAT 131 – CALCULUS I – SUMMER 2020

Lectures: Monday, Wednesday and Thursday, 6:00pm-9:05pm, online via Zoom. This is a 4 credits course. The Zoom meeting ID is 936-396-2094; url: https://zoom.us/j/9363962094. Invitation links will be sent before each lecture.

Course Description: The differential calculus and integral calculus, emphasizing conceptual understanding, computations and applications. Differentiation of elementary algebraic, trigonometric, exponential, and logarithmic functions; graphing; modelling and maximization; the Riemann integral; and the fundamental theorem of calculus.

Text: James Stewart, *Single Variable Calculus (Stony Brook Edition)*, Cambridge University Press.

Lecturer: The instructor is Santai Qu, E-mail: santai.qu@stonybrook.edu

Online office Hours: office hours will be held in the same Zoom address as lectures; Tuesday, 6:00pm-7:00pm.

Homework: Homework will be assigned for every week, either on Blackboard or during the Zoom meeting. Students should send their homework to instructor via emails. Feedbacks for homework will be given in their lectures next week.

Exams: There will be a midterm and a final, which are takehome exams or timed exams during the regular Zoom meeting time. Takehome exam is not closed book and closed notes. Timed exam will be closed book and closed notes. Calculators and other electronic devices are not allowed in a timed exam.

Grading: Homeworks and quizzes (20%) + Midterm (30%) + Final (40 %) = 100%. Students who do not sit in the final exam will not pass this course.

Absences and Other Accommodations: All excused absences from exams or other class assignments must be brought to the attention of the instructor as soon as possible. All DSS accommodations must be pursued through the DSS office. In case of an excused absence from an exam, typically the exam will simply not be counted towards total class points, with remaining exams weighted proportionately more. There is no make-up exam.

Schedule of Topics and Assignments

- Wednesday, May 27
Function representation; graph of functions; composition of functions.

- Thursday, May 28
Exponential functions; inverse functions/logarithms.

- Monday, June 1
Limit of a function; limit laws.

- Wednesday, June 3
Continuity; limits involving infinity.

- Thursday, June 4
Derivatives/rate of change; derivative as a function.

Date: Summer 2020.

- Monday, June 8
Polynomial/exponential derivatives; product/quotient rules.

- Wednesday, June 10
Derivatives of trig functions; Chain rule.

- Thursday, June 11
Midterm: timed exam.

- Monday, June 15
Implicit differentiation; derivatives of inverse trig functions; derivative of log functions.

- Wednesday, June 17
Differentials only; related rates; min/max.

- Thursday, June 18
Derivatives v.s. shapes of curves; L'Hospital's rule.

- Monday, June 22
Antiderivatives.

- Wednesday, June 24
Riemann sum.

- Thursday, June 25
Definite Integral; Evaluating Definite Integrals.

- Monday, June 29
Fundamental Theorem of Calculus; Substitution Rule

- Wednesday, July 1
Review for final.

- Thursday, July 2
Final: timed exam.

Required Syllabi Statements: The University Senate Undergraduate and Graduate Councils have authorized that the following required statements appear in all teaching syllabi (graduate and undergraduate courses) on the Stony Brook Campus.

Americans with Disabilities Act: If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, Room 128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the following website: http://www.stonybrook.edu/ehs/fire/disabilities.

Academic Integrity: 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 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.