Information sheet for Math 138 Fall 2018

Class meets: MTWRF 11:00 - 11:50 a.m. in OM 580

Instructor: Branko Ćurgus **Office Hours:** BH 178 MTRF noon **Email:** curgus@wwu.edu

Course website: http://faculty.wwu.edu/curgus/Courses/138_201840/138.html

Text: *Calculus: Single Variable, 6th Edition* by Deborah Hughes-Hallett, William G. McCallum, Andrew M. Gleason

Technology: For classroom demonstrations I will use the computer algebra system *Mathematica*. I will use version 8 which is available in BH 215 and BH 211A. An older version 5.2 is available campus wide. The version 5.2 is not compatible with version 8. However, it is still a powerful software which you can use when version 8 is not available. I will provide basic information on how to use *Mathematica* and welcome questions about it. Some homework assignments will require use of *Mathematica*. I strongly believe that using *Mathematica* will enhance your understanding of math that you are studying. You might also benefit from learning how to use a graphing calculator. Although not as powerful as *Mathematica*, more sophisticated calculators can perform a part of what *Mathematica* can do. In the Math Center in BH 211A you can get help from students who are calculator experts. Calculators are allowed but not required on exams; my exams are technology independent.

Student Learning Outcomes: The successful student will demonstrate: (1) Understanding of elementary real functions in the context of the formal definition of function and ability to use elementary functions as models in real life problems; (2) Understanding of the basic concepts related to functions: domain, range, injection, surjection, bijection, inverse; (3) Understanding of the concept of the limit of a function, little oh and big-O notation; (4) Understanding of the concept of continuity, the knowledge of its the formal definition and the Extreme Value Theorem; (5) Understanding of the concept of derivative of a function and how it is used in applications, the knowledge of its formal definition and the Mean Value Theorem; (6) Understanding of the concept of anti-derivative (indefinite integral) and ability to find anti-derivatives by using substitution and integration by parts; (7) Understanding of the concept of definite integral, the knowledge of its formal definition and the ability to use definite integrals to solve a variety of problems; (8) Understanding of the relationship between the derivative and the definite integral as expressed in both parts of the Fundamental Theorem of Calculus; (9) The ability to clearly communicate mathematical ideas verbally and in well-written reports and the ability to use technology as an aid in problem solving process.

Exams: There will be two "mid-term" exams and a comprehensive final exam. The dates for the "mid-term" exams are Wednesday, October 24 and Tuesday, November 20. The final exam is scheduled for *three hours* on Wednesday, December 12 from 8am to 11am. There will be no make-up exams. If you are unable to take an exam for a very serious reason verified in writing, please see me beforehand. This does not apply to the final exam which cannot be taken neither early nor late.

Homework: A list of suggested homework problems will be posted daily on the class website. Homework will not be collected. To succeed in class you should do each problem on your own. While working on problems you should recognize which theoretical tools are being used to solve a particular problem. As a result you will acquire general problem solving strategies, which is one of the goals of higher education. Incidentally, this will also lead to your success on exams.

Assignments: There will be six written homework assignments. These assignments will be handed out one week before they are due. They will be graded and the grade will count towards the final grade.

Grading: Each exam and assignment will be graded by an integer between 0 and 100. Your final grade will be determined using the following formula

$$\texttt{FG = } \lceil \texttt{0.15*E1 + 0.15*E2 + 0.3*A + 0.4*FE} \rceil .$$

where `E1, E2` are the grades for two in-class exams, `A` is the average grade on assignments and `FE` is the grade for the final exam. In the above formula the symbol $\lceil x \rceil$ denotes the ceiling of a real number x. Your letter grade will be assigned according to the following table:

F : 0 - 49	D : 50 - 54	C−: 55 - 59	C : 60 - 64	C+ : 65 - 69
B− : 70 - 74	B : 75 - 79	B+ : 80 - 84	A− : 85 - 89	A : 90 - 100

This course is an extremely fast-paced course. A lot of new concepts will be introduced. It takes time to internalize these concepts. Therefore it is essential that you keep up with the material presented every day; do the homework problems; look for help if you encounter difficulties.

How to succeed: Doing well in mathematics depends on understanding not memorizing. Exercise critical thinking while reading the text and doing the problems since understanding cannot be achieved through superficial studying. Talking to other students is a good way to check your understanding. If you feel that you are not on your way to understanding the material do not hesitate to ask questions. Use the Math Center in BH 211A. I will be glad to talk to you during my office hours, or you can make an appointment.