Course Syllabus
Math 1634-08: Calculus I
Spring Semester, 2019
University of West Georgia

Instructor: Dr. David G. Robinson, Hum #221, 678-839-4137
      E-Mail: davidr@westga.edu
      Office Hours: *MWF* 10 – 10:50 a.m., *MW* 12:10 – 1 p.m.

Class Meetings: *MW 2 – 3:15 p.m. in Boyd #303, F 2:25 – 3:15 p.m. in Boyd #301*
      These will consist of a combination of lectures, question-and-answer sessions, and general discussions. All reading will be assigned in advance of the meeting thereon.

Text/Resources: Stewart, James, <u>Calculus: Early Transcendentals</u> or <u>Single Variable Calculus: Early Transcendentals</u> (Vol. 1), 7th ed., Brooks/Cole, Belmont, CA, 2012, ISBN#: 0-538-49869-2. [required]
      Student Solutions Manual, Study Guide, and CD-Rom for the above text [optional]

      Graphics calculator (**TI-83/84** or better) [required]

Prerequisites: Math 1113 or the equivalent (with a grade of 'C' or better.)

Topics: *Elementary Functions Review* (§ 1.1 - 1.2): review of straight lines, polynomials, rational functions, algebraic functions, exponential and logarithmic functions, trigonometric functions, etc.
    Limits and *Derivatives* (§ 2.1 - 2.8): tangent lines, velocity, limits, continuity, asymptotes, rates of change, derivative at a point, derivative of a function, differentiability.
    Methods of Differentiation (§ 3.1 - 3.6): constant multiples, sums and differences, powers, polynomials, exponential functions, products and quotients, trigonometric functions, composite functions, implicit differentiation, higher order derivatives, logarithms.
    Applications of Differentiation (§ 3.7 - 3.10, 4.1 - 4.7): related rates, linear approximation, exponential growth/decay, critical points, curve sketching, maxima and minima, concavity, L'Hospital's rule, optimization problems, Newton's method.
    Integration (§ 4.9, 5.1 - 5.5): antiderivatives, differential equations, displacement, area, the definite integral, Fundamental Theorem of Calculus, indefinite integrals, substitution method.

General Objectives:
    Besides developing and deepening your understanding of the topics mentioned above, there are some particular skills you should master along the way in order to be able to apply what you learn in this course to future courses of study and future work situations. These include:
- use of appropriate mathematical terminology and notation
- effective use of tables, graphs and formulas
- computation of limits
- calculation and interpretation of derivatives
- curve sketching using pencil and paper as well as a calculator
- location and interpretation of optimal values of a function
- calculation and interpretation of integrals
- translation of practical problems into mathematical models

Evaluation Procedures:

Your understanding of the material and your progress toward the aforementioned objectives will be evaluated on the basis of your performances on *four written tests.*

Homework problems from the text or from class will be assigned regularly but not collected or graded. These are for practice and class discussion. Be prepared to discuss them as soon as possible after they are assigned.

Evaluation Criteria:

Grades on all work will be based upon
- accuracy of information (including calculations and use of terminology)
- depth and breadth of solutions (when applicable)
- logic and clarity of arguments (when applicable)
- neatness and clarity of presentation
- correctness of grammar and spelling
- thoroughness and timeliness of work
- intellectual honesty and creativity
- difficulty of the assignment/test

Grades: My scale for converting numerical grades (i.e., percentage points) to letter grades will be as follows:

89-100 A, *77-88* B, *65-76* C, *50-64* D, *below 50* F

Your final grade will be based on your *four test scores.* However, you may also earn up to *four* points of 'extra credit' by maintaining a *superior record of attendance*, i.e., *one point per period of zero absences from class meetings between successive tests.* [Note: An absence here means a class day in which you are not present - in body or mind! - for the duration of the class meeting, *regardless of the reason*.]

Important Procedural Policies:

- Attendance is important! However, should you find for some reason that you must miss a class meeting, remember that you are still responsible for any and all material you may have missed during your absence.
- *Cell phones* should be turned *off* during class meetings. If you need to make or receive a call/text, please excuse yourself from the class and take care of your business outside the classroom.
- *Tests must be taken at the prescribed times (see attached schedule), except by permission from the instructor. Such permission will be given only under the direst of circumstances (serious illness, e.g.) and only if your request is granted before the test is over. Otherwise you will receive a score of zero for that test.*
- If you find yourself falling behind in the course, do not delay in seeking out assistance and/or advice from someone (the Instructor, a tutor, etc.) who is competent in the subject area and who has your best interests at heart! **The Math Tutoring Center is in Boyd #205 and is open daily at the posted times.**
- *All electronic correspondence between student and instructor about matters pertaining to this course should be by way of your UWG e-mail account.* In particular, any documents handed out in class can also be obtained from me via e-mail.
- I assume you will abide by the *UWG Honor Code. This means among other things that you will not submit any work for a grade that is not your own work.* Violators of the code will receive no credit for the work in question and, in more serious cases, may be expelled from the course with a grade of 'F'.
- *Disabilities Act/Accessibility for the Course:* If you are a student who is disabled as defined under the Americans with Disabilities Act and require assistance or support services, please notify me and provide me with a copy of your packet from Student Services.