MATH 166-01 (Calculus I)   **Fall 2016**

Meetings: MTuWF 8:00-8:50 A.M.   **Instructor:** Keith Nabb
Classroom: 205 North Hall   **Office:** 206F North Hall
Office Hours: M & W 9-10; Tu 9-12   **E-mail:** keith.nabb@uwrf.edu
        F 9-10, 2-3   **Phone:** 715-425-3909

Materials: *Calculus*, 8th Ed., James Stewart
              Graphing Calculator (e.g., TI 83/84 series)

Description: This course provides a thorough coverage of differential calculus, including functions, limits, continuity, the derivative, rules of differentiation, the mean-value theorem, implicit differentiation, as well as applications to graphing and problems of maxima-minima and related rates. The course concludes with an introduction to integral calculus, including anti-derivatives, the definite integral, and the fundamental theorem of calculus. Prerequisite: MATH 147 or 149 or equivalent.

How the class will run: Prior to most class meetings, you will be provided a short set of notes to read. This will serve as your "foundation" for class that day. Please read it carefully and arrive to class with any questions. You will then engage in solving a problem in your group. Once the problem is solved, a group or two will present their results to the class. We might use whiteboards/easels/document cameras as a means to present problems to the class. Depending on the nature and difficulty of the problems, we'll have opportunities to solve/discuss many problems in a classroom period.

Classroom Record: Because of the format of this class, "taking notes" is not as important as understanding and making meaning of the content you see in class. At the end of each class, you will have a detailed record of what happened in class; I will post (1) the pre-class reading, (2) the problems posed in class, (3) the solution(s) presented by your classmates, and (4) a reflection on what was learned.

Course Grade:
    (a) Grades will be assigned according to the following scale:

Average	Grade
90 or above	**A**
80-89	**B**
70-79	**C**
60-69	**D**
59 or below	**F**

    (b) Attendance and active participation are very important. Each time your group presents to the class, a group grade will be assigned. The amalgam of these grades will count for

25% of your grade. Note: As for strict attendance, you are allowed to miss three classes without penalty. After this, you will lose a percentage point for each class missed (e.g., final average of 82% + 7 missed classes = 82 – 4 = 78%). Note: *Individual* absences in no way impact grades given to a *group*.

(c) We will have a total of six 30 minute quizzes occurring every other Friday (or so). The lowest score will be dropped so your top five scores will count for 25% of your grade. No make-ups are granted.

(d) There will be one assigned project during the course of the semester. We will discuss the nature of this project in class. The project is worth 15% of the term grade. The group with the "best" project will be awarded a ridiculously cool math T-shirt.

(e) At the end of most classroom meetings, a group will be assigned to "reflect" on the day's events. Questions to think about include, *What was the objective of this lesson? What was difficult or straightforward? Why might today's material be important moving forward?* I'll submit Reflection #1 to provide a reference for future reflections. Reflections are worth 10% of the term grade.

(f) There will be a comprehensive Final Exam worth 25% of the term grade. The Final Exam will take place on Tuesday, Dec 20 from 7:45-9:45 a.m.

Math Center: The math help center is located in 145 North Hall. Drop in during their regular hours for extra help.

Academic Integrity: For any instances of academic misconduct (plagiarism, copying, using notes/formulas when not allowed, etc.) the office of Student Conduct and Community Standards will be called upon for assistance.

Wisconsin Content and Teacher Standards: Refer to the webpage https://www.uwrf.edu/MATH/WisconsinContentTeacherStandardsMathematicsCourses.cfm for the standards addressed in this course.

Learning Environment: The UWRF promotes safe, inclusive and effective learning environments that protect the rights and support the interests of both students and faculty. For additional information regarding our inclusivity expectations, academic accommodations, academic conduct expectations and processes, and other syllabi information, please consult http://go.uwrf.edu/Syllabi.

1. The University of Wisconsin-River Falls strives to maintain our campus as a place of work and study for faculty, staff, and students that is free of all forms of prohibited discrimination and harassment. If you have concerns about such behavior, contact your instructor, the Office of Student Conduct and Community Standards at 715-425-0720, or the Office of Equity, Diversity, and Inclusion at 715-425-3833. For a list of prohibited behaviors and protected classes or to report something that is inappropriate using an online process, please use this form: http://www.uwrf.edu/EquityDiversityInclusion/incident.cfm.

2. The University of Wisconsin-River Falls welcomes students with disabilities into its educational programs, activities, residential halls, and everything else it offers. Those who will need academic adjustments or accommodations for a disability should contact the Ability Services Office. Decisions to allow adjustments and

accommodations are made by the Ability Services Office on the basis of clinical documentation that students provide to sufficiently indicate the nature of their situation.

Course Calendar: The schedule that follows is <u>tentative</u> and may be adjusted during the semester to accommodate the needs of the course.

Week No./Week of	Topics Covered
1/Sept 5	Syllabus, Group Assignments, Problem Solving/Prerequisites 1.4 (Tangent and Velocity Problems)
2/Sept 12	1.5 (Limit of A Function) 1.6 (Using Limit Laws)
3/Sept 19	1.8 (Continuity) 2.1 (Rate of Change), **Quiz 1**
4/Sept 26	2.2 (Derivative as Function) 2.3 (Differentiation Rules) 2.4 (Trigonometry)
5/Oct 3	2.5 (Chain Rule) 2.6 (Implicit Differentiation), **Quiz 2**
6/Oct 10	2.7 (Applications) 2.8 (Related Rates) 2.9 (Linear Approximation & Differentials)
7/Oct 17	3.1 (Minimum and Maximum Values) 3.2 (Mean Value Theorem) 3.3 (How Derivatives Affect the Shape of a Graph), **Quiz 3**
8/Oct 24	3.3 (How Derivatives Affect the Shape of a Graph) 3.4 (Limits at Infinity, Horizontal Asymptotes)
9/Oct 31	3.5 (Summary of Curve Sketching) 3.7 (Optimization) 3.8 (Newton's Method), **Quiz 4**
10/Nov 7	3.9 (Antiderivatives) 4.1 (Area & Distance)
11/Nov 14	4.2 (The Definite Integral) 4.3 (Fundamental Theorem of Calculus) AMATYC Conference

12/Nov 21	4.4 (Indefinite Integrals, Net Change) **Quiz 5 (on Tuesday)** **Thanksgiving Recess Wednesday-Friday**
13/Nov 28	4.5 (Substitution) 5.1 (Area Between Curves) 5.2 (Volume)
14/Dec 5	5.2 (Volume) 5.3 (Volume by Shells) 5.4 (Work), **Quiz 6**
15/Dec 12	5.4 (Work) 5.5 (Average Value) Semester Review
Finals/Dec 19	Final Exam Week **MATH 166 Tuesday, Dec 20 from 7:45-9:45 a.m.**