

**Course:** Calculus and Analytical Geometry 1 **Instructor:** Rob Jonas

**Office Hours:** M-Th 8:00am – 8:50am, or by appointment (HSA 49)

**Phone:** (253) 833–9111 ex 4939 (voice mail)

**Item:** 4891 **Section:** A **Room:** BI 0004 **Time:** 9:00am -10:30am M-Th

**Item:** 4895 **Section:** B **Room:** BI 0004 **Time:** 10:40am -12:10pm M-Th

**Item:** 4899 **Section:** C **Room:** BI 0004 **Time:** 12:20pm -1:50pm M-Th

Text website: [http://scidiv.bellevuecollege.edu/dh/Calculus\\_all/Calculus\\_all.html](http://scidiv.bellevuecollege.edu/dh/Calculus_all/Calculus_all.html)

**My web page:** <http://www.instruction.greenriver.edu/rjonas/>

**e-mail:** [rjonas@greenriver.edu](mailto:rjonas@greenriver.edu)

**Prerequisites:** Grade of 2.0 or better in MATH&142 or equivalent.

**Course Materials:**  *Contemporary Calculus I*, first edition, Dale Hoffman.

Graphing Calculator Required: Preferably a TI 83 or TI 84

**Course Description:** In a sentence, calculus is the cornerstone of the sciences. It represents arguably the single greatest accomplishment of the human mind, and from a practical point of view, serves as the ultimate tool for understanding the workings and forces of the natural world, both on earth and among the stars. In fact, this is what distinguishes calculus from the mathematics you have studied previously— it is less static and more dynamic, addressing change and motion using the notion of *limits*. The central topic of differential calculus is the *derivative*, and we shall see that this single mathematical object has many unexpected and powerful applications, including: rates of change, tangent lines, continuity, and optimization, to name a few.

**Course Features:** This course will feature cooperative group presentations in class, offering every student the opportunity to discuss and investigate mathematics. Communication of your thoughts, checking your ideas with others, and listening to other ideas can enhance your understanding of mathematics concepts and are cornerstones for this course. You are encouraged to work in groups outside of class and many students find it valuable to do so.

**Course Work:** Homework is graded in packets. Five problems, worth five points each, are selected at random for grading from each packet. There are five homework packets worth 25 points each, with the lowest score automatically dropped. Course work will include regular homework (five packets), group presentations (participation), three quizzes, and two exams, and a comprehensive final. **The lowest quiz and exam score can be replaced with a weighted score from your final if it makes your overall grade higher.** Because of this policy, **I do not accept any late homework and no make-up quizzes or exams will be given.** These components will be weighted roughly as follows:

Homework(4)	100 pts.
Quizzes(3)	75 pts.
Exam(2)	100 pts.
Final	100 pts.
<u>Part./Pres.</u>	<u>25 pts.</u>
Total	400 pts.

**Summer quarter and vacations:** Summer quarter is quite busy. Twelve weeks of curriculum is slotted into an eight week time-frame (with 1.5 hour classes). What this means is that attendance is critical. If you are planning a vacation during this class time, I suggest you rethink taking this class. Rarely are students happy with their results if they miss a week or more of class. Also, the final cannot be given early, so plan on being here for the entire eight weeks. If you are planning to leave the area after this class, do so after the scheduled date of the final.

**Attendance Policy:** Late arrival to class is unacceptable. If you are chronically late you will lose participation points. **Hopefully, your summer schedule will allow you to show up to class on time.** If you miss a group-presentation day, you will lose up to three points. In general, participation points are earned by coming to class on time, *participating* in class discussions and being prepared to assist your group in the presentation process which also includes individual presentations.

**Course Grades:**

Final grades are based on the following percentage to decimal conversions as well as points in between:

%	95	90	85	80	75	70	65-60	< 60
Dec.	4.0	3.5	3.0	2.5	2.0	1.5	1.0	0.0

**Learning Objectives:** By the end of the quarter, each student should have the ability to:

- understand and compute function limits;
- formulate the limit definition of continuity;
- formulate limit definition of the derivative;
- understand the relationship between the derivative, rates of change, and tangent lines;
- compute derivatives using techniques of differentiation;
- solve related rates and optimization problems using derivatives;
- sketch curves by identifying monotonicity, extrema, concavity, and inflection points;

**Campus-wide Learning Outcomes:** In a commitment to the continuous integrated improvement of teaching and learning, GRCC has identified core abilities that are considered fundamental to the ongoing success of its students. These abilities are collectively referred to as *learning outcomes*, and are outlined as follows:

*Critical Thinking:* recognize and use essential components of effective reasoning to evaluate information and to improve the quality of one's own thinking;

*Quantitative and/or Symbolic Reasoning:* access, evaluate, apply, and translate quantitative and/or symbolic information from a variety of sources, and in a variety of contexts; *Written Communication:* express one's thoughts, feelings, and ideas effectively and clearly and make connections that create meaning for oneself and one's peers;

*Responsibility:* accept responsibility for one's own learning and actions;

You will be assessed on these outcomes through class participation, homework, examinations, group projects and activities.

**Support:** Your classmates will be a key resource for you as questions arise, and I strongly encourage you to work together both inside and outside of class. The Math Learning Center (MLC) is an excellent place to work on your homework, either by yourself or with other math students, and offers many support services, such as tutors, text resources, computers with mathematical software, and math videos. The MLC is located in SMT355. And last but not least, my office hours are an ideal opportunity to resolve troublesome mathematical issues, and I am only too glad to be of assistance.

**Special Assistance:** If you require course adaptations or special accommodations because of a disability, if you have emergency medical information, or if you have special accommodations that need to be shared with me in the event that the building needs to be evacuated, please make me aware of this. Disability Support Services is located in LSC 277 and can be contacted at (253)833-9111 ex 2631.