

## Course Syllabus

### Math 203 — Applied Calculus (3 Credits/CRN# 60129)

INSTRUCTOR: Navtej (Johnny) Singh

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OFFICE: Manaopono 107

OFFICE HOURS: M W F 9:30am – 10:30am, T TR 3:00pm – 4:30pm, & by appointment

TELEPHONE: (808) 236 – 9278 <Use this during office hours for help on long questions>

EFFECTIVE DATE: Fall 2009

MAIN WEBSITE: [www.coursecompass.com](http://www.coursecompass.com)

### Windward Community College Mission Statement

*Windward Community College is committed to excellence in the liberal arts and career development; we support and challenge individuals to develop skills, fulfill their potential, enrich their lives, and become contributing, culturally aware members of our community.*

### Catalog Description

Basic mathematical concepts, topics in differentiation and introductory integration of algebraic, exponential and logarithmic functions. Related applications to management, finance, economics and social science will be considered. Prerequisite for this course is grade of "C" or better in MATH 135 or equivalent, satisfactory math placement test score or consent of instructor.

### Learning Resources and Materials

Everything you need for this course is online at the course compass website. You must get an access code for this course to access all materials. You can get this one of two ways: Buy it directly when registering or buy the textbook which comes with the access code. Textbook for this online course is "Calculus for Business, Economics, Life Sciences & Social Sciences" 11th edition by Raymond Barnett, Michael Ziegler and Karl Byleen". Purchase of this textbook is not required since the material is available online. If you are going to purchase a hard copy of this textbook, please make sure that your textbook comes with a valid access code. Buying just an access code cost about \$70 and is cheaper than buy the textbook. You do not have to buy a graphing calculator for this course. A free graphing calculator can be downloaded for your computer from <http://www.graphcalc.com> instead. If you already have a graphing calculator or are planning to buy one, I recommend TI 83.

### Disabilities Accommodation

If you have a physical sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Disability Specialist Counselor to discuss reasonable accommodations that will help you succeed in this class. Ann Lemke can be reached at (808) 235-7448, [lemke@hawaii.edu](mailto:lemke@hawaii.edu), or you may stop by Hale 'Akoakoa 213 for more information.

## Student Learning Outcomes

- Understand and use the intuitive definition of limits and apply them in limit calculations and in determining continuity.
- Demonstrate proficiency in determining derivatives and apply different interpretations of the derivative.
- Utilize precise mathematical language and symbols to effectively communicate mathematics in written and/or oral form.
- Use calculus techniques to analyze and solve applied problems.
- Use derivatives to analyze graphs and sketch graphs.
- Demonstrate proficiency in determining antiderivatives and integrals.
- Utilize integration in applied problems.
- Utilize techniques of differentiation with functions of several variables.

## Assessment, Tasks, and Grading

### Point distribution

Consultations	(Four visits @ 5 points each)	20 points
Online-Homework	(14 assignments @ 10 points each)	140 points
Online-Quizzes	(14 quizzes @ 10 points each)	140 points
<u>Exams</u>	(Three exams @ 100 points each)	<u>300 points</u>
<u>Total</u>		<u>700 points</u>

**Grades:** Letter grades will be assigned based on the following scale:  
 A  $\Rightarrow$  90%  $\uparrow$ ; B  $\Rightarrow$  80%  $\uparrow$ ; C  $\Rightarrow$  70%  $\uparrow$ ; D  $\Rightarrow$  60%  $\uparrow$ ; F  $\Rightarrow$  below 60%;

**Exams** There will be three scheduled exams for this course, worth 100 points each. Graphing calculators are not permitted on the exams, but can use scientific calculators instead. There is no comprehensive final for this class. Best way to prepare for the exams is to study examples presented in the class and homework problems. Details of each exam are listed below. Your first exam will cover Homework assignments 1 – 4. It will be available in The Learning Center (TLC) located in the Alaka'i building room 106 at Windward Community College from September 21<sup>st</sup> to 25<sup>th</sup>. You can go to this TLC anytime during normal business hours to take the exam. There may also be some extended hours offered by the center, for which you may contact Jerry Levinson via e-mail: [levinson@hawaii.edu](mailto:levinson@hawaii.edu) or call him at (808) 235 – 7498. If this location is inconvenient or you reside on one of the neighboring islands, please get in touch with me to make other arrangements prior to your exam. You are allowed to bring one 8 ½ by 11 sheet with notes only on one side for the first exam. Your second exam will be take-home. It will cover homework assignments 5 – 11. It will be available on November 11<sup>th</sup> and is due by November 22<sup>nd</sup>. The final exam is the third exam. It will cover homework assignments 12 – 14. However, due to the nature of the subject, you need to know the previous information in order to understand the next topic. This exam will be available online on December 14<sup>th</sup> and must be completed by December 17<sup>th</sup>.

**Quizzes** There are 14 online quizzes worth 10 points each. Each quiz covers the material learned on the corresponding homework. You must complete at least 70% of the homework before the system will allow you to take the quiz on that particular homework. To improve your score, each quiz may be taken twice.

**Homework** All homework assignments are available online. I encourage you to work together on homework by utilizing the online tools such as message board to communicate with each other. You must complete 70% of the homework assignment in order to move onto the next homework assignment. To receive help on the homework, students are welcome to come by my office during the office hours or make an appointment for consultation.

**Make-up Work:** There are no opportunities to make-up for any missed exams, quizzes, or other graded assignments. If you must be absent on an exam day, notify the instructor at least one hour prior to the exam. E-mail is the preferred method of communication.

**Consultation:** There are four required consultations for this class worth 5 points per attendance.

*1<sup>st</sup> Consultation:* It must be within first week of classes so that we can go over any questions you may have regarding the syllabus, quizzes, homework assignments, exams, or getting setup to use the online system.

*2<sup>nd</sup> Consultation:* This must be done a week after the first exam has been completed. This is help you understand any weak areas or ways to improve on future exams. We can also go over any general questions regarding the class and the assignments.

*3<sup>rd</sup> Consultation:* Since the third exam covers more material, I would like to make sure you are prepared for the third exam. This is why I would like to meet with you a week prior to the third exam.

*4<sup>th</sup> Consultation:* This meeting will take place a week before the final. This can be used as an opportunity to ask questions about the final exam or to discuss grades.

### Getting Started: Online Instruction, Help, & Tips

- Go to [www.coursecompass.com](http://www.coursecompass.com) and click on Register under students.
- Enter the Course ID **singh35179** when required.
- Follow the online instructions to complete the registration process.
- For video tutorial use this link: <http://tours.pearsoncmg.com/smscc/index.html>
- Note that you may need to turn off pop-up blocker so that some plug-ins can be installed.
- For technical problems call Tech Support at 800-677-6337, Monday – Friday 9am – 6pm EST.
- Additional help can be found on the Announcements page by clicking on Student Help or viewing the tip sheets.
- You can also talk to live tutor via toll free 888-777-0463, Sunday to Thursday 5pm – 12am EST.

## Additional Information

**Important Info:** Please check your WCC e-mail account frequently for important announcements. Note this syllabus is subject to change in extenuating circumstances. All assignments are due by midnight of the deadline date. All due dates for quizzes, homework assignments, and exams are listed on the schedule below. For important academic information refer to WCC website [www.windward.hawaii.edu](http://www.windward.hawaii.edu) or go to [www.hawaii.edu](http://www.hawaii.edu) for system wide information. Plagiarism, or copying and use of another's work without proper acknowledgment, is not permitted and may result in failing grade for the course.

**Additional info:** Students from Kapiolani Community College or UH Manoa can also meet with me on the UH Manoa campus on certain days. Please contact me to make an appointment for that. You may get additional help by utilizing the free walking tutoring service by going to the math lab located in at windward community college or at your native campus.

**N Grade:** "The 'N' grade indicates that the student has worked conscientiously, attended regularly, finished all work, fulfilled course responsibilities, and has made measurable progress. However, either the student has not achieved the minimal student learning objectives and is not yet prepared to succeed at the next level, or the student has made consistent progress in the class but is unable to complete the class due to extenuating circumstances, such as major health, personal or family emergencies." If you would like to request for N grade in this class, you must provide a formal letter of request to me no later than the time of final examination addressing how you have met the criteria for N grade. Then I will make a decision on whether or not you qualify for the N grade.

Topics	
1-1. Linear Equations and Inequalities (Review)	4-4. The Chain Rule
1-2. Graphs and Lines (Review)	4-5. Implicit Differentiation
1-3. Linear Regression (omitted/optional)	4-6. Related Rates
2-1. Functions	4-7. Elasticity of Demand (omitted/optional)
2-2. Elementary Functions: Graphs and Transformations	5-1. First Derivative and Graphs
2-3. Quadratic Functions (omitted/optional)	5-2. Second Derivative and Graphs
2-4. Exponential Functions	5-3. L'Hopital's Rule
2-5. Logarithmic Functions	5-4. Curve-Sketching Techniques
3-1. Introduction to Limits	5-5. Absolute Maxima and Minima
3-2. Continuity	5-6. Optimization
3-3. Infinite Limits and Limits at Infinity	6-1. Antiderivatives and Indefinite Integrals
3-4. The Derivative	6-2. Integration by Substitution
3-5. Basic Differentiation Properties	6-3. Differential Equations (omitted/optional)
3-6. Differentials (omitted/optional)	6-4. The Definite Integral
3-7. Marginal Analysis in Business and Economics	6-5. The Fundamental Theorem of Calculus
4-1. The Constant $e$ and Continuous Compound Interest	7-1. Area between Curves
4-2. Derivatives of Exponential and Logarithmic Functions	7-2. Applications in Business and Economics
4-3. Derivatives of Products and Quotients	

<b>Math 203 Fall 2009 [Tentative] Schedule &amp; Assignments</b>				
<b>Week</b>	<b>Dates (M-F)</b>	<b>Homework / Sections</b>	<b>HW Due Dates</b>	<b>Quizzes</b>
			(Saturdays)	(Sundays)
1	08/24 - 08/28	HW #1 (Section 2-1 & 2-2)	29-Aug	QZ #1 Due by 30-Aug
2	08/31 - 09/04	HW #2 (Section 2-4 & 2-5)	5-Sep	QZ #2 Due by 6-Sep
3	09/07 - 09/11	HW #3 (Section 3-1 & 3-2)	12-Sep	QZ #3 Due by 13-Sep
4	09/14 - 09/18	HW #4 (Section 3-3 & 3-4)	19-Sep	QZ #4 Due by 20-Sep
5	09/21 - 09/25	Exam 1 (Written) Available on 21-Sep and Must Complete by 25-Sep		
6	09/28 - 10/02	HW #5 (Section 3-5 & 3-7)	3-Oct	QZ #5 Due by 4-Oct
7	10/05 - 10/09	HW #6 (Section 4-1 & 4-2)	10-Oct	QZ #6 Due by 11-Oct
8	10/12 - 10/16	HW #7 (Section 4-3 & 4-4)	17-Oct	QZ #7 Due by 18-Oct
9	10/19 - 10/23	HW #8 (Section 4-5 & 4-6)	24-Oct	QZ #8 Due by 25-Oct
10	10/26 - 10/30	HW #9 (Section 5-1 & 5-2)	31-Oct	QZ #9 Due by 1-Nov
11	11/02 - 11/06	HW #10 (Section 5-3 & 5-4)	7-Nov	QZ #10 Due by 8-Nov
12	11/09 - 11/13	HW #11 (Section 5-5 & 5-6)	14-Nov	QZ #11 Due by 15-Nov
13	11/16 - 11/20	Exam 2 (Take Home) Available on 11-Nov and Must Turn in by 22-Nov		
14	11/23 - 11/27	HW #12 (Sections 6-1 & 6-2)	28-Nov	QZ #12 Due by 29-Nov
15	11/30 - 12/04	HW #13 (Sections 6-4 & 6-5)	5-Dec	QZ #13 Due by 6-Dec
16	12/07 - 12/11	HW #14 (Sections 7-1 & 7-2)	12-Dec	QZ #14 Due by 13-Dec
17	12/14 - 12/18	Final Exam (Online) Available on 14-Dec and Must complete by 17-Dec		
State Holidays:		Labor Day is on Monday September 7, 2009		
		Veterans' Day is on Wednesday November 11, 2009		
		Thanksgiving Day is on Thursday November 26, 2009		