UNIVERSITY OF GUAM
COLLEGE OF NATURAL AND APPLIED SCIENCES
DETAILED COURSE SYLLABUS[1]

1. **BASIC INFORMATION:**
   (1) Semester/year:_____Spring 2016
   (2) Course:_____MA*203 – Calculus I
   (3) Class Meeting:_____M – TH: 1400-1515
   (4) Instructor:___Dr. Taijeron
   (5) Office:_____WA-9
   (6) Phone:_____735-2825 (leave message)
   (7) Email:_____htaijeron@gmail.com
   (8) Office Hours: ***Subject to change with advance notice*****
   　　　　　　MW: 1515-1600, 1720-1805
   　　　　　　TTH: 1720-1805
   　　　　　　Fri: 1450-1620
   　　　All other times by appointment upon request

2. **CATALOG COURSE DESCRIPTION:**
   This is the first semester of a standard calculus course. Topics include limits, continuity; the definition of derivatives; derivatives of algebraic and transcendental functions; product, quotient, and chain rules; applications; and Reimann Sums. Prerequisite: Grade of C or better in MA*161b or MA*165 or placement or equivalent.

3. **COURSE CONTENT:**
   The course covers:
   - A review of functions, graphs and mathematical models;
   - Limits and derivatives of functions;
   - Differentiation Rules:
   - Applications of Differentiation
   - An Introduction to Integrals

4. **RATIONALE FOR OFFERING COURSE:**
   This course introduces students to the fundamental ideas of calculus: limits, derivatives and the definite integral. Though not highly stressed, the mathematical foundations of these ideas are provided, so that students receive an introduction to mathematical precision and rigor. Calculus is then used to investigate ideas from physics, such as velocity, acceleration, centers of mass, from geometry, such as areas and volumes, from finance, such as capital formation, and other disciplines. Students thus receive an introduction to mathematical modeling and applied mathematics, that is, how mathematics is used to study the physical world.

5. **SKILLS AND BACKGROUND REQUIRED OR EXPECTED:**
   Students should know algebra, some geometry, and some trigonometry. Students should have been exposed to mathematical modeling (word problems). Courses in college algebra and trigonometry or precalculus suffice, which usually means MA*161a and MA*161b, or MA*165.

6. **CONCEPTUAL STRUCTURE OF THE COURSE:**
   The conceptual structure of the course is summarized below from the source:
   http://encyclopedia2.thefreedictionary.com/Differential+and+Integral+Calculus:

   "Calculus is the field of mathematics that analyzes aspects of change in processes or systems that can be modeled by functions. Through its two primary tools—the derivative and the integral—it allows precise calculation of rates of change and of the total amount of change in such a system. The derivative and the integral grew out of the idea of a limit, the logical extension of the concept of a function over smaller and smaller intervals. The relationship between differential calculus and integral calculus, known as the fundamental theorem of calculus, was discovered in the late 17th century independently by Isaac Newton and Gottfried Wilhelm Leibniz. Calculus was one of the major scientific breakthroughs of the modern era." MA203 is basically "differential calculus", while MA204 is basically "integral calculus", ie, these courses basically covers:

   - Functions and Variables;
   - Limits and Continuity;
   - Derivatives;
   - Integrals.

7. **FORMAT AND ACTIVITIES IN THE COURSE:**
   Class will be conducted as follows:
   a. **Lecture/discussion/dialogue method sessions where instructor will**:
      - Present and/or review concepts in the sections of each chapter being covered;
      - Present examples that students will encounter in section being covered and show how to solve problems via examples;
      - Students can ask questions for clarification(s) about the concept being covered or clarification(s) on the examples being presented;
      - Quiz may be administered in these sessions.
   b. **Workshop Sessions:**
      - Review on materials covered in previous week;
      - Students will work in groups to solve problems being covered in sections covered;
      - Instructor will assist students solving these problems;
      - Students will turn in assignments at end of period or a day/time that instructor may set at end of workshop sessions.
   c. **Practice Problems** will be assigned during lecture or workshop sessions that will be done outside of class and due at the beginning of the next class meeting.

8. **TEXTBOOK AND READINGS:**
   TEXTBOOK: Single Variable Calculus: Early Transcendentals, 7th edition by James Stewart.

9. **ADDITIONAL MATERIALS OR EQUIPMENT:**
   READINGS: Additional reading materials will be emailed to students.

10. ASSIGNMENTS AND EXAMS:
The primary assessment tools for the evaluation of learning outcomes and for grades are assignments (workshop assignments and practice problems assignments), quizzes, and exams. Workshop assignments and practice problem assignments will be emailed to students indicating their due dates. Exams will be announced approximately a week or two before the exam is administered (students will be emailed and informed of the scheduled exams within a week or two before they are administered).

11.   EVALUATION AND GRADES:

a.   **Grading Policy**
Your final grade for the course will be based on the following:
Assignments (Workshop assignments, Practice Problems, quizzes) ------ 30%
In-Class Exams (2 – 3 exams) ---40%
Final Exam -- 30%
                                                                              Total: 100%

b.   **Numerical Grade[1] $\rightarrow$ Letter Grade:**
$90 - 100 \rightarrow$ A;
$80 - 89 \rightarrow$ B;
$70 - 79 \rightarrow$ C;
$60 - 69 \rightarrow$ D;
$\leq 59 \rightarrow$ F.

[1]All numerical grades are given in % and the % will be rounded off to the nearest integer (hopefully positive!).

c.   **ACADEMIC DISHONESTY:** Plagiarism and cheating are serious offenses and may be punished by failure on the exam, paper or project, failure in the course and/or expulsion from the University and a letter placed in your permanent file. For more information refer to the academic dishonesty policy in the University handbook. Instructor will inform you what "stuff" you are allowed to use such as calculators, textbooks, notes, etc., but most especially "WHAT YOU ARE NOT ALLOWED TO USE for each exam!" Definitely, no student is allowed to use computers, cell phones, etc.

12.   COURSE POLICIES:
a.   Attendance … MUST ATTEND CLASSES!!!
b.   Assignments: Workshop Problems and Practice Problems
The three most important ways to learn mathematics are to DO PROBLEMS, DO PROBLEMS, AND DO PROBLEMS. Reading the text and listening to lectures, even with complete understanding, cannot substitute for solving problems on your own. Work all of the assigned workshop problems and practice problems. Make sure that the assignments that you submit can be read, otherwise, the grader will inform

you that the assignment "cannot be read", and you will get a "zero" for that assignment.

c. Make-up policy
There will be **NO MAKE-UP** workshop assignments, **NO MAKE-UP** quizzes, **NO MAKE-UP** homework assignments, **NO MAKE-UP** in-class exams, and **NO MAKE-UP** final exam. **I DON'T BELIEVE IN MAKE-UP ANYTHING!** If you cannot make it to class to turn in assignments or you cannot attend a workshop session, **you will need to let me know and inform me why.** Similarly, if you cannot be present to take an exam, you will also need to see me to **let me know the reason why you cannot.**

d. Students responsibility
You are expected to be on time for each class (barring unforeseen circumstances). Please keep tardiness and absences to a minimum. If you are absent, it is your responsibility to pick up anything handed out or passed back during your absence, and in a timely manner. Please see me before or after class--or during office hours--to obtain these items, though--not during the day's lesson.

e. It is your responsibility to keep hold of any supplemental material distributed in class. It is also your responsibility to hold on to homework, quizzes and tests passed back to you. Do not assume I always have additional copies of previous handouts, quizzes or tests (or accompanying answer keys) available.

f. It is your responsibility to keep an accurate record of your graded work.

g. Once we begin class I expect you to be here for the full class period. Leaving after the first 10 minutes or arriving right at the end of class is not only of no benefit, it's unduly disruptive. If you are ill, PLEASE stay home and take care of the more important business of getting yourself well. If you are exhausted, PLEASE go home and get in the needed rest, for sleeping in class isn't going to help you learn the day's lesson. PLEASE give me, your fellow classmates, and the learning environment itself the same consideration and respect you yourself would wish and expect.

h. orkshop Sessions
FOR A SUCCESSFUL WORKSHOP:
- BE PREPARED. Come to the workshop having read all of the appropriate material from your text. This will increase the number of workshop problems you're able to solve.
- DO AS MANY PROBLEMS AS POSSIBLE. Strive to increase the number of problems you're able to solve in one session. You will not make progress if you do not push yourself.
- YOUR ONGOING COMMITMENT IS NEEDED. It is highly recommended that you continue to work on any unsolved workshop problems outside the workshop.

i. Graphing calculator required.

j. NO LAPTOPS, NO CELL PHONES, …, NO DEVICE THAT CAN BE USED TO ACCESS THE INTERNET!!!   I want to see your work not someone else's work. This rule will be strictly enforced during quizzes and exams!!!

k. **All quizzes and exams are closed book, closed notes, closed neighbor,..., CLOSED EVEYTHING UNLESS I OTHERWISE SAY SO!!!** There will be 2-3 announced in-class exams and a final exam. Recall: NO MAKE UP QUIZ AND NO MAKE UP EXAM EVER-EVER-EVER!!!

l.   It is your responsibility to keep, read and know the contents of this syllabus most especially the detailed syllabus that will be emailed to students.

m.   **Finally, it is your responsibility to email your instructor at htaijeron@gmail.com. You will need to do this so that instructor can forward you e-copies of notes, assignments, additional materials, etc.**

13.   SPECIAL NEEDS:

14.

"If you are a student with a disability who will require an accommodation(s) to participate in this course, please contact me or the Institutional Compliance Officer privately to discuss your specific needs. You will need to provide me with documentation concerning your need for accommodation(s) from the EEO/ADA and TITLE IX Office. If you have not registered with the EEO/ADA and Title IX Office, you should do so immediately at 735-2244, (TTY) 735-2243 to coordinate your accommodation request."

15.   CALENDAR OR SCHEDULE:

Notes on concepts to be covered will be emailed to students each time a new concept is to be presented in class.   This will include assignments for students to do on the concept being covered.

16.   DROP DATES:

University policy sets the drop dates. You can withdraw from classes "voluntarily" until mid October (i.e., without notifying instructor) and as late as the end of the semester with instructor's signature on a withdrawal form. See the semester schedule of courses.

17.   STUDENT WORK LOAD:

  Read all sections covered every day, work all workshop and practice problems assigned
        on a daily/weekly basis, work on all review problems assigned for scheduled exam.

18.   SUPPLEMENTARY MATERIALS/ADDITIONAL RESOURCES:

Supplementary materials will be emailed to students.

19.   CONTACT INFORMATION FOR CLASSMATES:
Exchange contact info with at least one classmate. Contact your classmate(s) if you miss
class or if you want to form a study group.

20.   *Tobacco-free/Smoke-free/Vaping-free campus:*
UOG is a tobacco-free/smoke-free, vaping/e-cigarette free campus. Thank you for not using tobacco products or e-cigarettes on campus, for helping to fight cancer, and for helping make UOG a healthy learning and living environment.

21.   STUDENT LEARNING OBJECTIVES AND MA203 CURRICULAR MAPPING:
Ever wondered why we require certain courses for general education, or for a given major, or as a prerequisite for another course? Read on below to see what the MA203 student learning outcomes are (what you should expect to learn in this course), how they tie into the Math Program Learning Outcomes, and how they tie into the bigger picture – the University's Institutional Learning Outcomes.

MA203 Course Student Learning Outcomes (SLOs)

Course SLOs:	Program Learning Outcomes (PLOs)	University Learning Outcomes (ILOs)	Method of Assessment
SLO-1: Demonstrate understanding of limits, continuity, and derivatives of functions.	MA PR-1 MA PR-3 MA PR-4	ILO-1 ILO-2 ILO-3	Questions on homework, workshops, quizzes and tests.
SLO-2: Use the product, quotient and chain rules for direct and implicit differentiation.	MA PR-1 MA PR-3 MA PR-4	ILO-1 ILO-2	Questions on homework, workshops, quizzes and tests.
SLO-3: Find derivatives of polynomial, rational, exponential, logarithmic, trigonometric and hyperbolic functions.	MA PR-1 MA PR-3 MA PR-4	ILO-1 ILO-2	Questions on homework, workshops, quizzes and tests.
SLO-4: Use differential calculus in curve sketching and problem solving.	MA PR-1 MA PR-3 MA PR-4 MA PR-6	ILO-1 ILO-2	Questions on homework, workshops, quizzes and tests.
SLO-5: Find definite and indefinite integrals of a limited number of elementary functions.	MA PR-1 MA PR-3 MA PR-4	ILO-1 ILO-2	Questions on homework, workshops, quizzes and tests.
SLO-6: Apply basic optimization techniques to selected problems arising in various fields such as physical modeling , economics and population dynamics.	MA PR-1 MA PR-3 MA PR-4 MA PR-6	ILO-1 ILO-2 ILO-3 ILO-5 ILO-6	Questions on homework, workshops, quizzes and tests.

(Note: Student Learning Outcomes for MA203 are undergoing revisions.)

Math Program Learning Outcomes:

MA PR-1: *demonstrate critical thinking*, *problem solving skills* and ability to use mathematical methods by *identifying, evaluating, classifying, analyzing, synthesizing* data and abstract ideas in various contexts and situations.

MA PR-2: *exhibit a sound conceptual understanding* of the nature of mathematics, and *demonstrate advanced mathematical skills* in mathematical analysis, modern algebra and other mathematical discipline(s).

MA PR-3: *argue and reason* using mathematics, *read, create* and *write down* logically correct mathematical proofs, *use exact mathematical language* and *communicate mathematics efficiently* orally, in writing and using information technology tools.

MA PR-4: *apply abstract thinking, mathematical methods, models* and *current practices* in the sciences, including state-of-the-art mathematical software, to solve problems in theoretical mathematics or in a diverse area of mathematical applications.

MA PR-5: *show maturity in mathematical knowledge and thinking* that prepares and encourages students to pursue graduate studies in mathematics or in related fields.

MA PR-6: *demonstrate an appreciation of* and *enthusiasm for* inquiry, learning and creativity in mathematical sciences, a sense of exploration that enables them to *pursue lifelong learning* and *up-to-*

date professional expertise in their careers through various areas of jobs, including governmental, business or industrial jobs in mathematics, related sciences, education or technology.

Institutional Expected Student Learning Outcomes:
UOG Expected Student Learning Outcomes December 2008

Some of the expected fundamental knowledge, skills, and values that the University of Guam student will have demonstrated upon completion of any degree are:

ILO1: Mastery of critical thinking & problem solving
ILO2: Mastery of quantitative analysis
ILO3: Effective oral and written communication
ILO4: Understanding & appreciation of culturally diverse people, ideas & values in a democratic context
ILO5: Responsible use of knowledge, natural resources, and technology
ILO6: An appreciation of the arts & sciences
ILO7: An interest in personal development & lifelong learning

22.   [1]**BASED ON DR. BARBARA GROSS DAVIS, UC BERKELEY MODEL "CREATING A SYLLABUS".** From the hard copy book *Tools for Teaching* by Barbara Gross Davis; Jossey-Bass Publishers: San Francisco, 1993. Linking to this book chapter from other websites is permissible. However, the contents of this chapter may not be copied, printed, or distributed in hard copy form without permission. For a more detailed explanation on each numbered section of the syllabus, please visit: http://teaching.berkeley.edu/bgd/syllabus.html.

UNIVERSITY
OF GUAM

College of Natural and Applied Sciences

Unibetsedåt
GUAHAN

Mathematics and Computer Science

Course: MA203 Calculus I (5 credits)
Semester: Spring 2016
Meetings: MTWTh 1100 - 1215
Room: WB 1

Instructor: Dr. Leslie C. Aquino
Office: Warehouse B, Room 10
Telephone: 735-2832
Email: **AquinoL8112@triton.uog.edu**

Office hours: Monday and Wednesday   1330 – 1530
Tuesday and Thursday   1000 – 1100
or by appointment
(subject to change with advance notice)

Catalog Description:
This is the first semester of a standard calculus course. Topics include limits; continuity; the definition of derivatives; derivatives of algebraic and transcendental functions; product, quotient, and chain rules; applications; and Riemann sums.

Text: *Single Variable Calculus Early Transcendentals, 7th edition, by James Stewart*

Rationale for Course:
This course introduces students to the fundamental ideas of calculus: limits, derivatives and the definite integral. Though not highly stressed, the mathematical foundations of these ideas are provided, so that students receive an introduction to mathematical precision and rigor. Calculus is then used to investigate ideas from physics, such as velocity, acceleration, centers of mass; from geometry, such as areas and volumes; from finance, such as capital formation; and from other disciplines. Students thus receive an introduction to mathematical modeling and applied mathematics, that is, how mathematics is used to study the physical world.

Prerequisites:
Grade of C or better in MA161b or MA165, or placement or equivalent.

Skills and Background Required or Expected
Students should know algebra, some geometry, and some trigonometry. Students should have been exposed to mathematical modeling (a.k.a. applications, a.k.a. word problems). Courses in college algebra and trigonometry or precalculus suffice, which usually means MA161a and MA161b or MA165.

Calculator:
You are required to have a scientific calculator for this course, and a graphing calculator is strongly recommended. Students are expected to have a working scientific calculator for quizzes and tests, for those times when a calculator will be allowed. No electronic calculators on tablets, smartphones, or laptops permitted during testing periods. No calculator swapping is permitted during testing periods, and you are still expected to show all required work to receive full credit.

Attendance:

Your attendance in class is encouraged and is directly related to your grade (see Evaluation below). Please inform the instructor if you will be absent. We will run into occasions when we absolutely cannot make it to class. I am subject to those environmental and familial setbacks too. However, we must make it a point to attend all class sessions on time.

Moodle:

I will be using Moodle to post the syllabus and any additional course documents and handouts. I will also use this as a place where you can see which topics we are covering each week, and to post any announcements made in class (like quiz and test dates). **Be sure to create a Moodle account and use an email address that you check regularly so that you will receive notifications of any new posts for our class.** You will need an enrollment key to access the course within Moodle, which will be given out in class, or you can contact me via email to request the enrollment key.

Evaluation:

40%	Quizzes and Workshops	*(will drop two lowest scores)*
40%	Chapter Tests	*(typically one chapter per test)*
20%	Final Exam	*(cumulative)*

100%   Total percentage

Letter grades will be assigned as follows:

90 – 100%	A
80 – 89%	B
70 – 79%	C
60 – 69%	D
0 – 59%	F

Dates for quizzes and tests will be announced in class, and posted to Moodle. Tests are given at the end of each chapter, and you should expect at least one quiz and/or workshop during a chapter.

The Final Exam is scheduled for **Wednesday, May 18, 2016**, from 1000-1150, and is cumulative.

NO MAKE-UPS. Contact instructor <u>IMMEDIATELY</u> via telephone/email for extenuating circumstances.

Make-up policy:

There will be no make-up quizzes or tests unless you contact the instructor <u>IMMEDIATELY</u> for extenuating circumstances. For example, you have to go off-island, you will be hospitalized or under serious medical treatment, deployment, etc.

Workshop, Homework, and Quizzes:

Homework problems will be assigned for each class meeting but **will not** be collected and graded. **Quiz problems will be taken directly from the homework problems assigned.** Workshop problems **will** be collected and graded. You may need to do additional problems from the textbook to fully master a topic, even if those problems were not assigned. You should ask workshop and homework questions at all class meetings or during workshop and office hours. Keep in mind that quizzes and tests are based on workshop and homework problems.

Quantitative Reasoning (QR) Assessment:

As part of the University's efforts to prepare for accreditation, UOG will assess students on the core competencies of Critical Thinking, Information Literacy, Oral Communication, Quantitative Reasoning, and Written Communication. Our class will be participating in the Quantitative Reasoning (QR) Assessment this semester. This will consist of a 30-question online or paper test, which will take one class period. The assessment will be conducted near the end of the semester; the exact date will be announced in class. **Note: Students participating in the QR Assessment will receive 10 points of extra credit to be added to their lowest test score, to improve their overall test average.**

Student Responsibility:

You are expected to spend 1-1½ hours of outside study for each hour inside the classroom. Do not commit the two cardinal sins in a mathematics course: **falling behind and leaving unanswered questions unanswered**. Both will complicate your life and cause a lot of unnecessary stress.

Remember, **MA203 is a five-credit course**. We meet four times a week and we will cover a lot of topics this semester. In order to succeed, you will need to put in the appropriate amount of time outside of class. So, read the textbook before class, work as many practice problems as you can, write down questions you have as you read or work problems, and ask your questions in class. You will feel a sense of confidence and accomplishment for all problems you complete and attempt. And, since this is a gateway to upper-level math and science courses, practice is the best way to build your math intuition and ensure you have a solid foundation. **Your grade is a direct reflection of the amount of time you put into this class.**

The following are some important notes concerning student responsibilities:
- Please do not ask for a copy of my notes for a day on which you were absent. Employ the buddy system to get copies of any notes you might need. It's probably a good idea to start exchanging phone numbers (or e-mail addresses) with classmates *now* in the event of such a need *later*.
- If you are absent, it is your responsibility to pick up anything handed out or passed back during your absence, and in a timely manner. Please see me before or after class--or during office hours--to obtain these items, though--not during the day's lesson.
- It is your responsibility to keep hold of any supplemental material distributed in class. It is also your responsibility to return to your **folder** all quizzes and tests passed back to you.
- Check Moodle regularly (at least once a week) to see if there are any announcements you may have missed in class, or to keep track of the topics we are covering each week.
- It is your responsibility to keep an accurate record of your graded work. Again, do not assume I always have my to-the-moment grade sheets ready.
- If you are ill, **STAY HOME** and take care of the more important business of getting yourself well. If you are exhausted, PLEASE go home and get in the needed rest, for coming to class feeling sleepy isn't going to help you much with the day's lesson.
- Lastly, it is your responsibility to keep, read and know the contents of this syllabus.

Special Accommodations:

If you are a student with a disability who will require an accommodation(s) to participate in this course, please contact me privately to discuss your specific needs. You will need to provide me with documentation concerning your need for accommodation(s) from the EEO/ADA Office. If you have not registered with the EEO/ADA Office, you should do so immediately at 735-2244/2971/2243 (TTY) to coordinate your accommodation request.

Academic dishonesty:

All assignments and tests must be your own work. Cheating on quizzes or tests will be punished with a mark of 0. There will be no make-ups for missed tests or quizzes; see Make-up policy for extenuating circumstances. Answers you write on quizzes or tests must come only from in your head or the information supplied in the test papers; anything else is cheating. The term "**cheating**" includes, but is not limited to: (1) use of any unauthorized assistance in taking quizzes, tests, or examinations, e.g., looking at other students' answers, using crib notes (including electronic), getting information from another person via any kind of communication; (2) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; or (3) the acquisition, without permission, of tests or other academic material belonging to a member of the University faculty or staff. If you need to use an electronic translator, you must discuss this with me in advance.

Tobacco-free/Smoke-free/Vaping-free campus:

UOG is a tobacco-free/smoke-free, vaping/e-cigarette free campus. Thank you for not using tobacco products or e-cigarettes on campus, for helping to fight cancer, and for helping make UOG a healthy learning and living environment.

Welcome!
> AND FINALLY...Welcome to MA203! This class will move at a good pace through the textbook, but should be fun and interesting for those who come to class ready to listen, learn, and ask questions when they don't understand a particular concept or can't read my writing on the board.

MA203 – Tentative Schedule – Spring 2016

Weeks 1 – 3	Ch. 1: Functions and models
Weeks 4 – 7	Ch. 2: Limits and derivatives
Weeks 8 – 11	Ch. 3: Differentiation rules
(Week 10	*Spring Break)*
Weeks 12 – 14	Ch. 4: Applications of differentiation
Weeks 15 – 17	Ch. 5: Integrals

(This is a tentative schedule, and is subject to change, should a topic require more or less time in class.

MA203 – Student Learning Outcomes

Ever wondered why we require certain courses for general education, or for a given major, or as a prerequisite for another course? Read on below to see what the MA203 student learning outcomes are (what you should expect to learn in this course), how they tie into the Math Program Learning Outcomes, and how they tie into the bigger picture – the University's Institutional Learning Outcomes.

MA203 Course Student Learning Outcomes (SLOs)

Course SLOs:	Program Learning Outcomes (PLOs)	University Learning Outcomes (ILOs)	Method of Assessment
Demonstrate understanding of limits, continuity, and derivatives of functions.	MA PR-1 MA PR-3 MA PR-4	ILO-1 ILO-2 ILO-3	Questions on homework, workshops, quizzes and tests.
Use the product, quotient and chain rules for direct and implicit differentiation.	MA PR-1 MA PR-3 MA PR-4	ILO-1 ILO-2	Questions on homework, workshops, quizzes and tests.
Find derivatives of polynomial, rational, exponential, logarithmic, trigonometric and hyperbolic functions.	MA PR-1 MA PR-3 MA PR-4	ILO-1 ILO-2	Questions on homework, workshops, quizzes and tests.
Use differential calculus in curve sketching and problem solving.	MA PR-1 MA PR-3 MA PR-4 MA PR-6	ILO-1 ILO-2	Questions on homework, workshops, quizzes and tests.
Find definite and indefinite integrals of a limited number of elementary functions.	MA PR-1 MA PR-3 MA PR-4	ILO-1 ILO-2	Questions on homework, workshops, quizzes and tests.
Apply basic optimization techniques to selected problems arising in various fields such as physical modeling , economics and population dynamics.	MA PR-1 MA PR-3 MA PR-4 MA PR-6	ILO-1 ILO-2 ILO-3 ILO-5 ILO-6	Questions on homework, workshops, quizzes and tests.

(Note: Student Learning Outcomes for MA203 are undergoing revisions.)

Math Program Learning Outcomes:

MA PR-1: *demonstrate critical thinking*, *problem solving skills* and ability to use mathematical methods by *identifying, evaluating, classifying, analyzing, synthesizing* data and abstract ideas in various contexts and situations.

MA PR-2: *exhibit a sound conceptual understanding* of the nature of mathematics, and *demonstrate advanced mathematical skills* in mathematical analysis, modern algebra and other mathematical discipline(s).

MA PR-3: *argue and reason* using mathematics, *read, create* and *write down* logically correct mathematical proofs, *use exact mathematical language* and *communicate mathematics efficiently* orally, in writing and using information technology tools.

MA PR-4: *apply abstract thinking, mathematical methods, models* and *current practices* in the sciences, including state-of-the-art mathematical software, to solve problems in theoretical mathematics or in a diverse area of mathematical applications.

MA PR-5: *show maturity in mathematical knowledge and thinking* that prepares and encourages students to pursue graduate studies in mathematics or in related fields.

MA PR-6: *demonstrate an appreciation of* and *enthusiasm for* inquiry, learning and creativity in mathematical sciences, a sense of exploration that enables them to *pursue lifelong learning* and *up-to-date professional expertise* in their careers through various areas of jobs, including governmental, business or industrial jobs in mathematics, related sciences, education or technology.

(Note: Math Program Learning Outcomes are undergoing revisions.)

Institutional Expected Student Learning Outcomes:
UOG Expected Student Learning Outcomes December 2008

Some of the expected fundamental knowledge, skills, and values that the University of Guam student will have demonstrated upon completion of any degree are:

ILO1: Mastery of critical thinking & problem solving
ILO2: Mastery of quantitative analysis
ILO3: Effective oral and written communication
ILO4: Understanding & appreciation of culturally diverse people, ideas & values in a democratic context
ILO5: Responsible use of knowledge, natural resources, and technology
ILO6: An appreciation of the arts & sciences
ILO7: An interest in personal development & lifelong learning

MA203-02 CALCULUS I   SPRING 2016

2016 Spring Semester
Monday, Tuesday, Wednesday, Thursday 12:30PM - 01:45PM, at WARE-
HOUSE B, Room 3 (WB 3)

Instructor: Yoshifumi Takenouchi, Ph.D. (office: SC Bldg. Rm. 202)
E-mail: `jytakenovich2006@yahoo.co.jp`
Phone: 735-2828 (unless emergency use e-mail)

Office Hours:
MTThF 09:00AM -09:30AM, 10:50AM - 12:30PM, at SC 202
and by an appointment

Textbook: James Stewart, Single Variable CALCULUS —Early Transcen-
dentals, 7th ed., (2011) / 6th ed., (2008)

Catalog Course Description: This is the first semester of a standard cal-
culus course. Topics include limits; continuity; the definition of derivatives;
derivatives of algebraic and transcendental functions; product, quotient, and
chain rules; applications; and Riemann Sums.

Prerequisite: Grade of C or better in MA161b or MA165 or placement or
equivalent.

Rational for Offering Course: This course introduces students to the
fundamental ideas of calculus: limits, derivatives and the definite integral.
Though not highly stressed, the mathematical foundations of these ideas are
provided, so that students receive an introduction to mathematical precision
and rigor. Calculus is then used to investigate ideas from physics, such
as velocity, acceleration, centers of mass, from geometry, such as areas and
volumes, from finance, such as capital formation, and other disciplines. Stu-
dents thus receive an introduction to mathematical modeling and applied
mathematics, that is, how mathematics is used to study the physical world.

Learning Objectives for Students:
   • Demonstrate understanding of limits, continuity, and derivatives of
functions.
   • Use the product, quotient and chain rules for direct and implicit differ-
entiation.

• Find derivatives of polynomial, rational, exponential, logarithmic, trigonometric and hyperbolic functions.

• Use differential calculus in curve sketching and problems solving.

• Find definite and indefinite integrals of a limited number of elementary functions.

• Appreciate the Fundamental Theorem of Calculus.

Tentative Schedule:
1st-5th week (Jan 20-Feb 15) Ch 1, 2 "Review of funcs, & Limits"
   1st Exam: Feb 16-17 (TW) or Feb 19 (Fri)
5th-9th week (Feb 18-Mar 17) Ch 3 "Differentiation"
   2nd Exam: Mar 18 (Fri)
11th-14th week (Mar 28-Apr 20) Ch 4 "Application"
   3rd Exam: Apr 21- 22 (ThF) or Apr 22 (Fri)
15th-17th week (Mar 25-May 12) Ch 5 "Integration"
   Cumulative Final Exam: May 16-18

Grades: The total number of points available is **500**. Grades will be no lower than those set forth in the following table. Student's work is usually graded on a partial credit basis. Student's written solutions must include all work needed in order to solve problems. Points will be deducted (or given none) for omitting any work even if the answer is correct.

Quizzes (almost every class)	**100**pt		A	90-100 %
1st Exam	**100**pt		B	80-90 %
2nd Exam	**100**pt		C	70-80 %
3rd Exam	**100**pt		D	60-70 %
Final Exam	**100**pt		F	0-60 %

Homework: Homework will be assigned sometimes. To be successful, a student must complete all assigned homework even if it is not collected and graded.

(Take-home) Quiz: There will be quizzes in most of classes. No make-up for quizzes. The main purpose of the pre-quizzes and quizzes is to let you prepare for "bigger" Exams and Cumulative Final Exam. So don't worry too much about your low score on a single quiz. However, **missing FIVE or more quizzes** will result in grade **F** as a course grade regardless of your total points. (Excused absence will be counted as missing half.)

Exams/Final Exam: There will be three exams and a cumulative final exam. All notes and the textbook are prohibited from use on exams and on the final exam. It is crucial to do well on Exams and Final Exam. **Missing any single exam or final exam** will result in grade **F**. Very special circumstances will be handled very specially by consultation with the instructor. Except for true emergencies, these special cases are arranged in advance with the instructor.

Attendance: Students are expected to attend every scheduled class. It is the student's responsibility to keep informed of any announcements, syllabus adjustments or policy changes made during scheduled classes. **Those who often come late for the class may not be able to take quiz that day.**

Calculators: A graphing calculator (e.g. TI-83) is required for this course. Students are expected to have a working calculator for quiz/test/exam **with exception.** No calculator swapping is permitted during testing periods. **LAPTOP IS NOT ALLOWED TO USE <u>IN CLASS</u>.** But, of course, I recommend you to use your laptop at home to visualize the dynamics of models and graphs of functions etc. we will study in our class meetings.

Disabilities: If you are a student with a disability who will require an accommodation(s) to participate in this course, please contact me or the Institutional Compliance Officer privately to discuss your specific needs. You will need to provide me with documentation concerning your need for accommodation(s) from the EEO/ADA & TITLE IX Office. If you have not registered with the EEO/ADA & TITLE IX Office, you should do so immediately at 735-2244, (TTY) 735-2243 to coordinate your accommodation request.

1. BASIC INFORMATION:

Semester/year:_____Spring 2016_____
Course:____MA*204 – Calculus II_____
Class Meeting:_____TTH: 1530-1720; F: 1400-1450_____
Instructor:__Dr. Taijeron_____
Office:_____WA-9_____
Phone:_____735-2825 (leave message)_____
Email:_____htaijeron@gmail.com_____
Office Hours: S**ubject to change with advance notice****
               MW: 1515-1600, 1720-1805
               TTH: 1720-1805
               Fri: 1450-1620
      All other times by appointment upon request

2. CATALOG COURSE DESCRIPTION:

This is the second semester of a standard calculus course. Topics include techniques and applications of integration, differential equations, power series, and Taylor series.
Prerequisite: Grade of C or better in MA*203.

3. COURSE CONTENT:

The course covers: transcendental functions, techniques and applications of integration, indeterminate forms, improper integrals, Taylor's formula, infinite series, Fourier series, topics from analytic geometry, plane curves and polar coordinates.

4. RATIONALE FOR OFFERING COURSE:

The basic content of the course is needed by any student who is planning to continue in mathematics. The ideas introduced in this course provide a foundation for all upper division mathematics courses. It is a continuation of MA203 that covers the fundamental ideas of calculus: limits, derivatives and the definite integral. Though not highly stressed, the mathematical foundations of these ideas are provided, so that students receive an introduction to mathematical precision and rigor. Calculus is then used to investigate ideas from physics, such as velocity, acceleration, centers of mass, from geometry, such as areas and volumes, from finance, such as capital formation, and other disciplines. Students thus receive an introduction to mathematical modeling and applied mathematics, that is, how mathematics is used to study the physical world.

5. SKILLS AND BACKGROUND REQUIRED OR EXPECTED:

MA*203 (Calculus I).

6. CONCEPTUAL STRUCTURE OF THE COURSE:

The conceptual structure of the course is summarized below from the source:
http://encyclopedia2.thefreedictionary.com/Differential+and+Integral+Calculus:
    "Calculus is the field of mathematics that analyzes aspects of change in processes or systems that can be modeled by underlinefunctions. Through its two primary tools—the derivative and the integral—it allows precise calculation of rates of change and of the total amount of change in such a system. The derivative and the integral grew out of the idea of a limit, the logical extension of the concept of a function over smaller and smaller intervals. The relationship between differential calculus and integral calculus,

known as the <u>fundamental theorem of calculus</u>, was discovered in the late 17th century independently by <u>Isaac Newton</u> and <u>Gottfried Wilhelm Leibniz</u>. Calculus was one of the major scientific breakthroughs of the modern era." MA203 is basically "differential calculus", while MA204 is basically "integral calculus", ie, these courses basically covers:

- Functions and Variables;
- Limits and Continuity;
- Derivatives;
- Integrals.

7. FORMAT AND ACTIVITIES IN THE COURSE:

Class will be conducted as follows:

a. **Lecture/discussion/dialogue method sessions where instructor will**:
- Present and/or review concepts in the sections of each chapter being covered;
- Present examples that students will encounter in section being covered and show how to solve problems via examples;
- Students can ask questions for clarification(s) about the concept being covered or clarification(s) on the examples being presented;
- Quiz may be administered in these sessions.

b. **Workshop Sessions:**
- Review on materials covered in previous week;
- Students will work in groups to solve problems being covered in sections covered;
- Instructor will assist students solving these problems;
- Students will turn in assignments at end of period or a day/time that instructor may set at end of workshop sessions.

c. **Practice Problems** will be assigned during lecture or workshop sessions that will be done outside of class and due at the beginning of the next class meeting.

8. TEXTBOOK AND READINGS:
TEXTBOOK: Single Variable Calculus: Early Transcendentals, 7th edition by James Stewart.

9. ADDITIONAL MATERIALS OR EQUIPMENT:
READINGS: Reading materials will be emailed to students.

10. ASSIGNMENTS AND EXAMS:
The primary assessment tools for the evaluation of learning outcomes and for grades are assignments (workshop assignments and practice problems assignments), quizzes, and exams. Workshop assignments and practice problem assignments will be emailed to students indicating their due dates. Exams will be announced approximately a week or two before the exam is administered (students will be emailed and informed of the scheduled exams within a week or two before they are administered).

11. EVALUATION AND GRADES:
  a. **Grading Policy**
     Your final grade for the course will be based on the following:
         Assignments (Workshop assignments, Practice Problems, quizzes) ------ 30%
         In-Class Exams (2 – 3 exams) --40%
         Final Exam -- 30%
                                                    Total: 100%
  b. **Numerical Grade[1] → Letter Grade:**
         $90 – 100 \rightarrow$ A;
         $80 – 89 \rightarrow$ B;
         $70 – 79 \rightarrow$ C;
         $60 – 69 \rightarrow$ D;
         $\leq 59 \rightarrow$ F.
     [1]All numerical grades are given in % and the % will be rounded off to the nearest
     integer (hopefully positive!).
  c. **ACADEMIC DISHONESTY:** Plagiarism and cheating are serious offenses and
     may be punished by failure on the exam, paper or project, failure in the course and/or
     expulsion from the University and a letter placed in your permanent file. For more
     information refer to the academic dishonesty policy in the University handbook.
     Instructor will inform you what "stuff" you are allowed to use such as calculators,
     textbooks, notes, etc., but most especially "WHAT YOU ARE NOT ALLOWED TO
     USE for each exam!" Definitely, no student is allowed to use computers, cell phones,
     etc.

12. COURSE POLICIES:
  a. Attendance … MUST ATTEND CLASSES!!!
  b. Assignments: Workshop Problems and Practice Problems
     The three most important ways to learn mathematics are to DO PROBLEMS, DO
     PROBLEMS, AND DO PROBLEMS. Reading the text and listening to lectures,
     even with complete understanding, cannot substitute for solving problems on your
     own. Work all of the assigned workshop problems and practice problems. Make sure
     that the assignments that you submit can be read, otherwise, the grader will inform
     you that the assignment "cannot be read", and you will get a "zero" for that
     assignment.
  c. Make-up policy
     There will be **NO MAKE-UP** workshop assignments, **NO MAKE-UP** quizzes, **NO
     MAKE-UP** homework assignments, **NO MAKE-UP** in-class exams, and **NO
     MAKE-UP** final exam. **I DON'T BELIEVE IN MAKE-UP ANYTHING!** If you
     cannot make it to class to turn in assignments or you cannot attend a workshop
     session, **you will need to let me know and inform me why.** Similarly, if you cannot
     be present to take an exam, you will also need to see me to **let me know the reason
     why you cannot.**
  d. Students responsibility
     You are expected to be on time for each class (barring unforeseen circumstances).
     Please keep tardiness and absences to a minimum. If you are absent, it is your

responsibility to pick up anything handed out or passed back during your absence, and in a timely manner. Please see me before or after class--or during office hours--to obtain these items, though--not during the day's lesson.

e. It is your responsibility to keep hold of any supplemental material distributed in class. It is also your responsibility to hold on to homework, quizzes and tests passed back to you. Do not assume I always have additional copies of previous handouts, quizzes or tests (or accompanying answer keys) available.

f. It is your responsibility to keep an accurate record of your graded work.

g. Once we begin class I expect you to be here for the full class period. Leaving after the first 10 minutes or arriving right at the end of class is not only of no benefit, it's unduly disruptive. If you are ill, PLEASE stay home and take care of the more important business of getting yourself well. If you are exhausted, PLEASE go home and get in the needed rest, for sleeping in class isn't going to help you learn the day's lesson. PLEASE give me, your fellow classmates, and the learning environment itself the same consideration and respect you yourself would wish and expect.

h. Workshop Sessions
   FOR A SUCCESSFUL WORKSHOP:
   - BE PREPARED. Come to the workshop having read all of the appropriate material from your text. This will increase the number of workshop problems you're able to solve.
   - DO AS MANY PROBLEMS AS POSSIBLE. Strive to increase the number of problems you're able to solve in one session. You will not make progress if you do not push yourself.
   - YOUR ONGOING COMMITMENT IS NEEDED. It is highly recommended that you continue to work on any unsolved workshop problems outside the workshop.

i. Graphing calculator required.

j. NO LAPTOPS, NO CELL PHONES, …, NO DEVICE THAT CAN BE USED TO ACCESS THE INTERNET!!!   I want to see your work not someone else's work. This rule will be strictly enforced during quizzes and exams!!!

k. **All quizzes and exams are closed book, closed notes, closed neighbor,..., CLOSED EVEYTHING UNLESS I OTHERWISE SAY SO!!!** There will be 2-3 announced in-class exams and a final exam. Recall: NO MAKE UP QUIZ AND NO MAKE UP EXAM EVER-EVER-EVER!!!

l. It is your responsibility to keep, read and know the contents of this syllabus most especially the detailed syllabus that will be emailed to students.

m. **Finally, it is your responsibility to email your instructor at htaijeron@gmail.com. You will need to do this so that instructor can forward you e-copies of notes, assignments, additional materials, etc.**

13. SPECIAL NEEDS:

"If you are a student with a disability who will require a accommodation(s) to participate in this course, please contact me or the Institutional Compliance Officer privately to discuss your specific needs. You will need to provide me with documentation concerning your need for accommodation(s) from the EEO/ADA and TITLE IX Office. If you have not registered with the EEO/ADA and Title IX Office, you should do so immediately at 735-2244, (TTY) 735-2243 to coordinate your accommodation request."

14. CALENDAR OR SCHEDULE:

Notes on concepts to be covered will be emailed to students each time a new concept is to be presented in class.   This will include assignments for students to do on the concept being covered.

15. DROP DATES:
University policy sets the drop dates. You can withdraw from classes "voluntarily" until mid October (i.e., without notifying instructor) and as late as the end of the semester with instructor's signature on a withdrawal form. See the semester schedule of courses.

16. STUDENT WORK LOAD:
Read all sections covered every day, work all workshop and practice problems assigned on a daily/weekly basis, work on all review problems assigned for scheduled exam.

17. SUPPLEMENTARY MATERIALS/ADDITIONAL RESOURCES:
Supplementary materials will be emailed to students.

18. CONTACT INFORMATION FOR CLASSMATES:
Exchange contact info with at least one classmate. Contact your classmate(s) if you miss class or if you want to form a study group.

19. *Tobacco-free/Smoke-free/Vaping-free campus:*
UOG is a tobacco-free/smoke-free, vaping/e-cigarette free campus. Thank you for not using tobacco products or e-cigarettes on campus, for helping to fight cancer, and for helping make UOG a healthy learning and living environment.

20. STUDENT LEARNING OBJECTIVES AND MA204 CURRICULAR MAPPING:
Ever wondered why we require certain courses for general education, or for a given major, or as a prerequisite for another course? Read on below to see what the MA203 student learning outcomes are (what you should expect to learn in this course), how they tie into the Math Program Learning Outcomes, and how they tie into the bigger picture – the University's Institutional Learning Outcomes.

Course SLOs:	Program Learning Outcomes (PLOs)	University Learning Outcomes (ILOs)	Method of Assessment
SLO-1: **Apply** integrals to compute areas, volume and arc length.	MA PR-1 MA PR-3 MA PR-4	ILO-1 ILO-2 ILO-3	Questions on homework, workshops, quizzes and tests.
SLO-2: **Identify** and **perform** various techniques to evaluate integrals.	MA PR-1 MA PR-3 MA PR-4	ILO-1 ILO-2	Questions on homework, workshops, quizzes and tests.
SLO-3: **Solve** simple differential equations.	MA PR-1 MA PR-3 MA PR-4	ILO-1 ILO-2	Questions on homework, workshops, quizzes and tests.
SLO-4: **Describe** objects in both rectangular and polar coordinate systems.	MA PR-1 MA PR-3 MA PR-4 MA PR-6	ILO-1 ILO-2	Questions on homework, workshops, quizzes and tests.
SLO-5: **Construct** Taylor series for different classes of functions.	MA PR-1 MA PR-3 MA PR-4	ILO-1 ILO-2	Questions on homework, workshops, quizzes and tests.
SLO-6: **Apply** integrals to compute areas, volume and arc length.	MA PR-1 MA PR-3 MA PR-4 MA PR-6	ILO-1 ILO-2 ILO-3 ILO-5 ILO-6	Questions on homework, workshops, quizzes and tests.

(Note: Student Learning Outcomes for MA204 are undergoing revisions.)

<u>Math Program Learning Outcomes:</u>

MA PR-1: *demonstrate critical thinking*, *problem solving skills* and ability to use mathematical methods by *identifying, evaluating, classifying, analyzing, synthesizing* data and abstract ideas in various contexts and situations.

MA PR-2: *exhibit a sound conceptual understanding* of the nature of mathematics, and *demonstrate advanced mathematical skills* in mathematical analysis, modern algebra and other mathematical discipline(s).

MA PR-3: *argue and reason* using mathematics, *read, create* and *write down* logically correct mathematical proofs, *use exact mathematical language* and *communicate mathematics efficiently* orally, in writing and using information technology tools.

MA PR-4: *apply abstract thinking, mathematical methods, models* and *current practices* in the sciences, including state-of-the-art mathematical software, to solve problems in theoretical mathematics or in a diverse area of mathematical applications.

MA PR-5: *show maturity in mathematical knowledge and thinking* that prepares and encourages students to pursue graduate studies in mathematics or in related fields.

MA PR-6: *demonstrate an appreciation of* and *enthusiasm for* inquiry, learning and creativity in mathematical sciences, a sense of exploration that enables them to *pursue lifelong learning* and *up-to-date professional expertise* in their careers through various areas of jobs, including governmental, business or industrial jobs in mathematics, related sciences, education or technology.

<u>Institutional Expected Student Learning Outcomes:</u>
<u>UOG Expected Student Learning Outcomes</u> December 2008

Some of the expected fundamental knowledge, skills, and values that the University of Guam student will have demonstrated upon completion of any degree are:

ILO1: Mastery of critical thinking & problem solving
ILO2: Mastery of quantitative analysis
ILO3: Effective oral and written communication
ILO4: Understanding & appreciation of culturally diverse people, ideas & values in a democratic context
ILO5: Responsible use of knowledge, natural resources, and technology
ILO6: An appreciation of the arts & sciences
ILO7: An interest in personal development & lifelong learning

21. [1]BASED ON DR. BARBARA GROSS DAVIS, UC BERKELEY MODEL "CREATING A SYLLABUS".

From the hard copy book *Tools for Teaching* by Barbara Gross Davis; Jossey- Bass Publishers: San Francisco, 1993. Linking to this book chapter from other websites is permissible. However, the contents of this chapter may not be copied, printed, or distributed in hard copy form without permission. For a more detailed explanation on each numbered section of the syllabus, please visit: http://teaching.berkeley.edu/bgd/syllabus.html.

UNIVERSITY

OF GUAM

Unibetsedåt

GUAHAN

College of Natural and Applied Sciences

Mathematics and Computer Science

Course: MA205 Multivariable Calculus (3 credits)
Semester: Spring 2016
Meetings: TTh 1400 – 1520
Room: SC121

Instructor: Dr. Leslie C. Aquino
Office: Warehouse B, Room 10
Telephone: 735-2832
Email: **AquinoL8112@triton.uog.edu**

Office hours: Monday and Wednesday   1330 – 1530
Tuesday and Thursday   1000 – 1100
or by appointment
(subject to change with advance notice)

Catalog Description:

This course covers the calculus of functions of several variables, including partial differentiation and multiple integration.

Text: *Multivariable Calculus, 7th edition, by James Stewart*

Rationale for Course:

The basic content of the course is needed by any student who is planning to continue in mathematics. The ideas and techniques introduced in this course provide a foundation for all upper division mathematics courses, and are important in other disciplines, such as engineering, chemistry and computer science.

Course Content:

- Vectors: vectors in 2-, 3-, and n-dimensions; dot product and cross product; lines and planes; polar, cylindrical, and spherical coordinates
- Differentiation in several variables: limits and derivatives; the chain rule; directional derivatives and gradients
- Vector-valued functions: parametrized curves; arc-length; vector fields; gradient, divergence, curl, and the del operator
- Maxima and minima: differentials and Taylor's Theorem of several variables; extrema of functions; Lagrange multipliers; applications of extrema
- Multiple integration: double and triple integrals; change of variables; applications
- Line integrals: scalar and vector line integrals; Green's Theorem; conservative vector fields
- Surface integrals and vector analysis: parametrized surfaces; surface integrals; Stoke's and Gauss's Theorems (If time permits)

Prerequisites:

Grade of C or better in MA204.

Calculator:
You are required to have a scientific calculator for this course, and a graphing calculator is strongly recommended. Students are expected to have a working scientific calculator for quizzes and tests, for those times when a calculator will be allowed. No electronic calculators on tablets, smartphones, or laptops permitted during testing periods. No calculator swapping is permitted during testing periods, and you are still expected to show all required work to receive full credit.

Computer Algebra Systems and Apps
We will try to incorporate some use of computer algebra systems or math apps in this course, to help illustrate certain topics. I will do my best to use software generally available via the internet. These apps and software systems are optional, another tool to help you understand the material.

Attendance:
Your attendance in class is encouraged and is directly related to your grade (see Evaluation below). Please inform the instructor if you will be absent. We will run into occasions when we absolutely cannot make it to class. I am subject to those environmental and familial setbacks too. However, we must make it a point to attend all class sessions on time.

Moodle:
I will be using Moodle to post the syllabus and any additional course documents and handouts. I will also use this as a place where you can see which topics we are covering each week, and to post any announcements made in class (like quiz and test dates). **Be sure to create a Moodle account and use an email address that you check regularly so that you will receive notifications of any new posts for our class.** You will need an enrollment key to access the course within Moodle, which will be given out in class, or you can contact me via email to request the enrollment key.

Evaluation:
20%	Homework and Quizzes
60%	Tests *(three or four tests, typically one or two chapters per test)*
20%	Final Exam *(cumulative)*

100%   Total percentage

Letter grades will be assigned as follows:
90 – 100%	A
80 – 89%	B
70 – 79%	C
60 – 69%	D
0 – 59%	F

Dates for quizzes and tests will be announced in class, and posted to Moodle. Tests are given at the end of each chapter or topic, and there will be at least one quiz and/or homework set per chapter.

The Final Exam is scheduled for **Tuesday, May 17, 2016**, from 1400-1550, and is cumulative.

NO MAKE-UPS. Contact instructor <u>IMMEDIATELY</u> via telephone/email for extenuating circumstances.

Make-up policy:
There will be no make-up quizzes or tests unless you contact the instructor <u>IMMEDIATELY</u> for extenuating circumstances. For example, you have to go off-island, you will be hospitalized or under serious medical treatment, deployment, etc.

Homework and Quizzes:
Homework problems will be assigned for each chapter and will be collected and graded. **Quiz problems will be taken directly from the homework problems assigned.** You may need to do additional problems from the textbook to fully master a topic, even if those problems were not assigned. You should ask homework questions at all class meetings or during office hours. Keep in mind that quizzes and tests are based on homework problems, so practice, practice practice!

Student Responsibility:

You are expected to spend 1-1½ hours of outside study for each hour inside the classroom. Do not commit the two cardinal sins in a mathematics course: **falling behind and leaving unanswered questions unanswered**. Both will complicate your life and cause a lot of unnecessary stress.

Remember, **MA205 is a three-credit mathematics course**. Although we meet only twice a week, we will cover a lot of topics this semester. In order to succeed, you will need to put in the appropriate amount of time outside of class. So, read the textbook before class, work as many practice problems as you can, write down questions you have as you read or work problems, and ask your questions in class.   You will feel a sense of confidence and accomplishment for all problems you complete and attempt. And, since this is a gateway to upper-level math and science courses, practice is the best way to build your math intuition and ensure you have a solid foundation. **Your grade is a direct reflection of the amount of time you put into this class.**

The following are some important notes concerning student responsibilities:
- Please do not ask for a copy of my notes for a day on which you were absent. Employ the buddy system to get copies of any notes you might need. It's probably a good idea to start exchanging phone numbers (or e-mail addresses) with classmates *now* in the event of such a need *later*.
- If you are absent, it is your responsibility to pick up anything handed out or passed back during your absence, and in a timely manner. Please see me before or after class--or during office hours--to obtain these items, though--not during the day's lesson.
- It is your responsibility to keep hold of any supplemental material distributed in class. It is also your responsibility to return to your **folder** all quizzes and tests passed back to you.
- Check Moodle regularly (at least once a week) to see if there are any announcements you may have missed in class, or to keep track of the topics we are covering each week.
- It is your responsibility to keep an accurate record of your graded work. Again, do not assume I always have my to-the-moment grade sheets ready.
- If you are ill, **STAY HOME** and take care of the more important business of getting yourself well. If you are exhausted, PLEASE go home and get in the needed rest, for coming to class feeling sleepy isn't going to help you much with the day's lesson.
- Lastly, it is your responsibility to keep, read and know the contents of this syllabus.

Special Accommodations:

If you are a student with a disability who will require an accommodation(s) to participate in this course, please contact me privately to discuss your specific needs. You will need to provide me with documentation concerning your need for accommodation(s) from the EEO/ADA Office. If you have not registered with the EEO/ADA Office, you should do so immediately at 735-2244/2971/2243 (TTY) to coordinate your accommodation request.

Academic dishonesty:

All assignments and tests must be your own work. Cheating on quizzes or tests will be punished with a mark of 0. There will be no make-ups for missed tests or quizzes; see Make-up policy for extenuating circumstances. Answers you write on quizzes or tests must come only from in your head or the information supplied in the test papers; anything else is cheating. The term "**cheating**" includes, but is not limited to: (1) use of any unauthorized assistance in taking quizzes, tests, or examinations, e.g., looking at other students' answers, using crib notes (including electronic), getting information from another person via any kind of communication; (2) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; or (3) the acquisition, without permission, of tests or other academic material belonging to a member of the University faculty or staff. If you need to use an electronic translator, you must discuss this with me in advance.

Tobacco-free/Smoke-free/Vaping-free campus:

UOG is a tobacco-free/smoke-free, vaping/e-cigarette free campus. Thank you for not using tobacco products or e-cigarettes on campus, for helping to fight cancer, and for helping make UOG a healthy learning and living environment.

Welcome!

AND FINALLY...Welcome to MA205! This class will move at a good pace through the material, but should be fun and interesting for those who come to class ready to listen, learn, and ask questions when they don't understand a particular concept or can't read my writing on the board.

MA205 – Tentative Schedule – Spring 2016

Weeks 1 – 2	Ch. 12: Vectors and the geometry of space
Weeks 3 – 4	Ch. 13: Vector functions
Weeks 5 – 9	Ch. 14: Partial differentiation
(Week 10	*Spring Break)*
Weeks 11 – 14	Ch. 15: Multiple integrals
Weeks 14 – 17	Ch. 16: Vector calculus

(This is a tentative schedule, and is subject to change, should a topic require more or less time in class.

MA205 – Student Learning Outcomes

Ever wondered why we require certain courses for general education, or for a given major, or as a prerequisite for another course? Read on below to see what the MA205 student learning outcomes are (what you should expect to learn in this course), how they tie into the Math Program Learning Outcomes, and how they tie into the bigger picture – the University's Institutional Learning Outcomes.

MA205 Course Student Learning Outcomes (SLOs)

Course SLOs:	Program Learning Outcomes (PLOs)	University Learning Outcomes (ILOs)	Method of Assessment
Demonstrate knowledge of the theory and applications of functions of several variables and vector-valued functions	MA PR-1 MA PR-3 MA PR-4 MA PR-5 MA PR-6	ILO-1 ILO-2 ILO-3	Questions on homework, workshops, quizzes and tests.
Calculate and interpret partial derivatives, compute total and directional derivatives	MA PR-1 MA PR-3 MA PR-4	ILO-1 ILO-2 ILO-3	Questions on homework, workshops, quizzes and tests.
Use line integrals and surface integrals to gain insight of vector fields	MA PR-1 MA PR-3 MA PR-4	ILO-1 ILO-2 ILO-3 ILO-5	Questions on homework, workshops, quizzes and tests.
Describe and use divergence and curl in the context of general integral theorems	MA PR-1 MA PR-3 MA PR-4	ILO-1 ILO-2 ILO-3	Questions on homework, workshops, quizzes and tests.
Apply differential calculus, multiple integrals and vector integral calculus to solve optimization, extreme value and other application problems	MA PR-1 MA PR-3 MA PR-4 MA PR-5 MA PR-6	ILO-1 ILO-2 ILO-3 ILO-5 ILO-6	Questions on homework, workshops, quizzes and tests.

(Note: Student Learning Outcomes for MA205 are undergoing revisions.)

Math Program Learning Outcomes:

MA PR-1: *demonstrate critical thinking*, *problem solving skills* and ability to use mathematical methods by *identifying, evaluating, classifying, analyzing, synthesizing* data and abstract ideas in various contexts and situations.

MA PR-2: *exhibit a sound conceptual understanding* of the nature of mathematics, and *demonstrate advanced mathematical skills* in mathematical analysis, modern algebra and other mathematical discipline(s).

MA PR-3: *argue and reason* using mathematics, *read, create* and *write down* logically correct mathematical proofs, *use exact mathematical language* and *communicate mathematics efficiently* orally, in writing and using information technology tools.

MA PR-4: *apply abstract thinking, mathematical methods, models* and *current practices* in the sciences, including state-of-the-art mathematical software, to solve problems in theoretical mathematics or in a diverse area of mathematical applications.

MA PR-5: *show maturity in mathematical knowledge and thinking* that prepares and encourages students to pursue graduate studies in mathematics or in related fields.

MA PR-6: *demonstrate an appreciation of* and *enthusiasm for* inquiry, learning and creativity in mathematical sciences, a sense of exploration that enables them to *pursue lifelong learning* and *up-to-date professional expertise* in their careers through various areas of jobs, including governmental, business or industrial jobs in mathematics, related sciences, education or technology.

(Note: Math Program Learning Outcomes are undergoing revisions.)

Institutional Expected Student Learning Outcomes:
UOG Expected Student Learning Outcomes December 2008

Some of the expected fundamental knowledge, skills, and values that the University of Guam student will have demonstrated upon completion of any degree are:

ILO1: Mastery of critical thinking & problem solving
ILO2: Mastery of quantitative analysis
ILO3: Effective oral and written communication
ILO4: Understanding & appreciation of culturally diverse people, ideas & values in a democratic context
ILO5: Responsible use of knowledge, natural resources, and technology
ILO6: An appreciation of the arts & sciences
ILO7: An interest in personal development & lifelong learning