COURSE SYLLABUS

Term: Spring 2017 (2016-2)

Course: MATH 231 A

Instructor Information:	
Instructor Name	Carrie Hutton
Office Number:	302
Phone Number:	219-473-4284
Email:	chutton@ccsj.edu
Hours Available:	- M/W 8:00 am – 10:00 am, 3:15 pm – 4:15 pm - T/R 3:15 pm – 4:15 pm - Please note that meetings and appointments can effect these hours. - Additional office hours are available by appointment
Instructor Background: B.S. Actuarial Science, Indiana University; M.S. Mathematics and Statistics, Purdue University; M.S.E. Engineering, Purdue University	

Course Information:	
Course Time:	**Monday Tuesday Wednesday Thursday, 1:45 – 2:45 pm**
Classroom:	TBD
Prerequisites:	MATH 230 with a grade of 'C' or better, or an equivalent Accuplacer score
Required Books and Materials:	Stewart, J. Calculus; Ed 8 Cengage ISBN: 9781285740621 **It is strongly recommended that you have a Texas Instrument 84 (TI-84) for this class.

Learning Outcomes/ Competencies:
Through appropriate assessments students will demonstrate that they are able to:

1. **Remember** the necessary steps and procedures for computing differential equations, parametric equations, infinite sequences and series, and vectors.

2. **Understand** what each computation means on a conceptual level. Students will also understand the historical context within which calculus was developed.

3. **Apply** their understanding of the concepts and use appropriate computations to solve problems in physics, economics, business, and biology.

4. **Analyze** problems in physics, economics, business, and biology to determine appropriate methods for solving them.

5. **Evaluate** proposed solutions with respect to commonly accepted practices used in physics, economics, business, and biology.

6. **Create** and demonstrate appropriate solutions to discovery projects applying calculus
   methods in their chosen field of study.

Course Description: This is the standard second-semester college Calculus course. Topics include differential equations, parametric equations, infinite sequences and series, vectors and geometry of space, and vector functions. Students will study the applications of the afore mentioned topics in geometry, science, and business.

Learning Strategies:
Group discussions, lecture, projects, and lots of practice. The objective is to promote your understanding of mathematics concepts and to enable you to apply them in a meaningful way. You are encouraged to rely on logical thinking, rather than on memorization. It is VERY important that you READ the sections of the textbook, STUDY the examples and WORK problems. **Active participation in class** and utilization of services such as the CCSJ Student Success Center will help ensure your success.

It is also suggested that you utilize Khan Academy for additional help on homework outside of the classroom.

Experiential Learning Opportunities:
Applications of the Course Objectives

Assessments:		
Exams	Three chapter exams (7-8, 9-10, 11)	40% of grade
Cumulative Final Exam	Chapter 1 – Chapter 7	25% of grade
Quizzes	Weekly	20% of grade
Textbook Homework	Assigned per schedule	15% of grade

Responsibilities	
Attending Class	You cannot succeed in this class if you do not attend. We believe that intellectual growth and success in higher education occur through interaction in the classroom and laboratories. However, we do not want to penalize students for participating in college-sponsored events. When you miss class because of a college event, you must give notice of your absence in advance, and you are responsible for all missed work. Being absent doesn't excuse you from doing class work; you have **more** responsibilities to keep up and meet the objectives of this course. *Eighty percent of success is showing up.* -Woody Allen Attendance is important and is expected. You are responsible for all material covered in class, including announcements of assignments and quizzes. If you miss class, you must contact the instructor by email (chutton@ccsj.edu) within 24 hours. The instructor is more than willing to meet you halfway on this, but remember that there are TWO halves. You are allowed to miss 4 classes, without penalty. After that, every class that you are absent from will result in a one (1) percentage point loss from your final grade. You should 'save' your four absences for emergencies. If you are more than 10 minutes late to class, that will count as an absence. BE PRESENT, BE ON TIME.
Turning In Your Work	You cannot succeed in this class if you do not turn in all your work on the day it is due.
Using Electronic Devices	Electronic devices are out of place in the classroom. Please keep them silent and put away during class. Additionally, NO ELECTRONIC DEVICES OF ANY KIND ARE TO BE USED ON QUIZZES OR EXAMS.
Participating in Class	**Tests and Quizzes:** • Three chapter tests will be given during the term and one comprehensive final exam during exam week. • You will be allowed to use one piece of paper (8 ½ x 11), one side only, of notes on your chapter tests. • You will be allowed to use one piece of paper (8 ½ x 11), both sides, of notes on your final exam. • You will be allowed to use a calculator on all exams (you really, REALLY, **REALLY** should have a graphing calculator). • You will NOT be allowed to use any electronic devices on an exam or quiz (i.e. phone, tablet, etc.). • Thoughtful completion of your homework should be done to practice and prepare for your exams and quizzes.

	• You will have a quiz each week on the previous week's classes and homework content. You are NOT able to use any notes on the quizzes. • There are no makeup quizzes, but your two lowest quiz scores will be dropped. If you are absent, that will be one of your two dropped scores. **Written homework assignments:** • Homework is critical to your success in this course. The written homework is meant to serve as practice for the exams. • Your written homework should be neat and organized. Problems should be copied from the book and all necessary work should be shown. **Answers without work will not be given credit.** • It is expected that you will spend 8-12 hours outside of class each week practicing math. You must practice to succeed. • NO LATE HOMEWORK will be accepted, for any reason, period. You are welcome to turn it in early, but never late.
Doing Your Own Work	If you turn in work that is not your own, you are subject to judicial review, and these procedures can be found in the College Catalog and the Student Planner. The maximum penalty for any form of academic dishonesty is dismissal from the College. Using standard citation guidelines, such as MLA or APA format, to document sources avoids plagiarism. The Library has reference copies of each of these manuals, and there are brief checklists in your Student Handbook and Planner. **PLEASE NOTE:** All papers may be electronically checked for plagiarism.
Withdrawing from Class	After the last day established for class changes has passed (see the College calendar), you may withdraw from a course by following the policy outlined in the CCSJ Course Catalog.

Resources	
Student Success Center:	The Student Success Center provides faculty tutors at all levels to help you master specific subjects and develop effective learning skills. It is open to all students at no charge. You can contact the Student Success Center at 219 473-4287 or stop by the Library.
Disability Services:	Disability Services strives to meet the needs of all students by providing academic services in accordance with Americans with Disabilities Act (ADA) guidelines. If you believe that you need a "reasonable

	accommodation" because of a disability, contact the Disability Services Coordinator at 219-473-4349.
CCSJ Alerts:	Calumet College of St. Joseph's emergency communications system will tell you about emergencies, weather-related closings, or other incidents via text, email, or voice messages. Please sign up for this important service annually on the College's website at: http://www.ccsj.edu/alerts/index.html. In addition, you can check other media for important information, such as school closings: **Internet:** http://www.ccsj.edu **Radio:** WAKE – 1500 AM, WGN – 720 AM, WIJE – 105.5 FM, WLS – 890 AM, WZVN – 107.1 FM, WBBM NEWS RADIO 78 **TV Channels:** 2, 5, 7, 9, 32

Emergency Procedures

MEDICAL EMERGENCY

EMERGENCY ACTION
1. Call 911 and report incident.   2. Do not move the patient unless safety dictates.   3. Have someone direct emergency personnel to patient.   4. If trained: Use pressure to stop bleeding.   5. Provide basic life support as needed.

FIRE

EMERGENCY ACTION
1. Pull alarm (located by EXIT doors).   2. Leave the building.   3. Call 911 from a safe distance, and give the following information: • Location of the fire within the building.   • A description of the fire and how it started (if known)

BUILDING EVACUATION

1. All building evacuations will occur when an alarm sounds and/or upon notification by security/safety personnel. **DO NOT ACTIVATE ALARM IN THE EVENT OF A BOMB THREAT.**
2. If necessary or if directed to do so by a designated emergency official, activate the building alarm.
3. When the building evacuation alarm is activated during an emergency, leave by the nearest marked exit and alert others to do the same.

4. Assist the disabled in exiting the building! Remember that the elevators are reserved for persons who are disabled. **DO NOT USE THE ELEVATORS IN CASE OF FIRE. DO NOT PANIC.**
5. Once outside, proceed to a clear area that is at least 500 feet away from the building. Keep streets, fire lanes, hydrant areas and walkways clear for emergency vehicles and personnel. The assembly point is the sidewalk in front of the college on New York Avenue.
6. **DO NOT RETURN** to the evacuated building unless told to do so by College official or emergency responders.

IF YOU HAVE A DISABILITY AND ARE UNABLE TO EVACUATE:
Stay calm, and take steps to protect yourself. If there is a working telephone, call 911 and tell the emergency dispatcher where you are **or** where you will be moving. If you must move,
1. Move to an exterior enclosed stairwell.
2. Request persons exiting by way of the stairway to notify the Fire Department of your location.
3. As soon as practical, move onto the stairway and await emergency personnel.
4. Prepare for emergencies by learning the locations of exit corridors and enclosed stairwells. Inform professors, and/or classmates of best methods of assistance during an emergency.

HAZARDOUS MATERIAL SPILL/RELEASE

EMERGENCY ACTION

1. Call 911 and report incident.
2. Secure the area.
3. Assist the injured.
4. Evacuate if necessary.

TORNADO

EMERGENCY ACTION

1. Avoid automobiles and open areas.
2. Move to a basement or corridor.
3. Stay away from windows.
4. Do not call 911 unless you require emergency assistance.

SHELTER IN PLACE

EMERGENCY ACTION

1. Stay inside a building.
2. Seek inside shelter if outside.
3. Seal off openings to your room if possible.
4. Remain in place until you are told that it is safe to leave.

BOMB THREATS

EMERGENCY ACTION

1. Call 911 and report incident.
2. If a suspicious object is observed (e.g. a bag or package left unattended):
• Don't touch it!

- Evacuate the area.

TERRORISM AND ACTIVE SHOOTER SITUATIONS

EMERGENCY ACTION

1. Call 911 and report intruder.

RUN, HIDE OR FIGHT TIPS:

1. **Prepare** – frequent training drills to prepare the most effectively.
2. **Run and take others with you** – learn to stay in groups if possible.
3. **Leave the cellphone.**
4. **Can't run? Hide** – lock the door and lock or block the door to prevent the shooter from coming inside the room.
5. **Silence your cellphone** -- use landline phone line.
6. **Why the landline?** It allows emergency responders to know your physical location.
7. **Fight** – learn to "fight for your life" by utilizing everything you can use as a weapon.
8. **Forget about getting shot – fight**! You want to buy time to distract the shooter to allow time for emergency responders to arrive.
9. **Aim high** – attack the shooter in the upper half of the body: the face, hands, shoulder, neck.
10. **Fight as a group** – the more people come together, the better the chance to take down the shooter.
11. **Whatever you do, do something** – "react immediately" is the better option to reduce traumatic incidents.

I reserve the right to change this schedule to meet the needs of the class

DATE	TOPIC	HOMEWORK ASSIGNMENT(S)	DUE DATE(S)
1-9-17	7.3 Trigonometric Substitution	Textbook p. 577 #1-28, #41 – 48	January 24, 2017
1-10-17	7.3 Trigonometric Substitution 7.4 Strategy for Integration		
1-11-17	7.5 Strategy for Integration		
1-12-17	7.7 Approximate Integration		
1-16-17	No Class – Martin Luther King Jr. Day		
1-17-17	7.8 Improper Integrals	Quiz #1	
1-18-17	7.8 Improper Integrals		
1-19-17	Recitation		
1-23-17	Recitation	Quiz #2	
1-24-17	8.1 Arc Length	Textbook p.621 #1-20, 22, 23	February 6, 2017
1-25-17	8.1 Arc Length 8.2 Area of a Surface of Revolution		
1-26-17	8.2 Area of a Surface of Revolution		
1-30-17	8.3 Applications to Physics and Engineering	Quiz #3	
1-31-17	8.4 Applications to Economics and Biology		
2-1-17	8.5 Probability		
2-2-17	Recitation		
2-6-17	**Exam I (chapter 7 – Chapter 8)**		
2-7-17	9.1 Modeling with Differential Equations	Textbook p. 674, #1-24 all	February 23, 2017
2-8-17	9.1 Modeling with Differential Equations		
2-9-17	9.2 Direction Fields and Euler's Method		
2-13-17	9.2 Direction Fields and Euler's Method	Quiz #4	

	9.3 Separable Equations		
2-14-17	9.3 Separable Equations		
2-15-17	9.4 Models for Population Growth		
2-16-17	No Class – Instructor PD		
2-20-17	9.5 Linear Equations	Quiz #5	
2-21-17	9.6 Predator-Prey Systems		
2-22-17	Recitation		
2-23-17	10.1 Curves defined by Parametric Equations	Textbook p. 730, #1-7, 9-18, 21-26, 31-33, 37-41, 45-51	March 16, 2017
2-27-17	No Class – Spring Break		
2-28-17	No Class – Spring Break		
3-1-17	No Class – Spring Break		
3-2-17	No Class – Spring Break		
3-6-17	10.2 Calculus with Parametric Curves	Quiz #6	
3-7-17	10.2 Calculus with Parametric Curves 10.3 Polar Coordinates		
3-8-17	10.3 Polar Coordinates 10.4 Areas and Lengths in Polar Coordinates		
3-9-17	10.4 Areas and Lengths in Polar Coordinates		
3-13-17	10.5 Conic Sections	Quiz #7	
3-14-17	10.6 Conic Sections in Polar Coordinates		
3-15-17	Recitation		
3-16-17	**Exam II (Chapter 9 – Chapter 10)**		
3-20-17	11.1 Sequences	Textbook p. 825 #1-8, 11-31, 40-43, 47-54	April 11, 2017
3-21-17	11.2 Series		
3-22-17	11.3 The Integral Test and Estimates of Sums		

3-23-17	11.4 The Comparison Tests		
3-27-17	11.5 Alternating Series	Quiz #8	
3-28-17	11.6 Absolute Convergence and the Ratio and Root Tests		
3-29-17	11.7 Strategy for Testing Series		
3-30-17	11.8 Power Series		
4-3-17	11.9 Representations of Functions as Power Series	Quiz #9	
4-4-17	11.10 Taylor and Maclaurin Series		
4-5-17	11.11 Applications of Taylor Polynomials		
4-6-17	Recitation		
4-10-17	Recitation	Quiz #10	
4-11-17	**Exam III (Chapter 11)**		
4-12-17	12.1 Three Dimensional Coordinate Systems	Textbook p.836 #2-38 even, p.845 #2-32 even	Week Of 4-24-17 at the time of the final exam
4-13-17	12.1 Three Dimensional Coordinate Systems		
4-17-17	12.2 Vectors		
4-18-17	12.2 Vectors		
4-19-17	Review for Final Exam		
4-20-17	Review for Final Exam		
Week of 4-24-17	Final Exam week – we will follow the CCSJ final exam schedule – to be released at a later date		Congratulations! You have finished the semester!