Calculus II  MATH 2414.B01
Department of Mathematics & Statistics
Fall 2020

A. COURSE INFORMATION

Course number/section: MATH 2414.001
Class meeting time: MWF 09:00-09:50 AM
Class location: OCNR 133
Course Website: [https://bb9.tamucc.edu/](https://bb9.tamucc.edu/)

B. INSTRUCTOR INFORMATION

Instructor: Dr. Beate Zimmer
Office location: CI 310
Office hours: MW 11:00 AM – 11:50 AM
TR 9:15 AM – 10:05 AM
Telephone: (361) 825-2682
e-mail: beate.zimmer@tamucc.edu
Appointments: e-mail to make appointments outside the announced office hours

C. COURSE DESCRIPTION

Catalog Course Description
Integration, applications of integration, especially to differential equations, sequences, series, Taylor polynomials and series. Contains a laboratory component.

Extended Course Description
Class Hours: you also need to register for one section of the lab. Lecture and lab together count as a four-hour course. Applications to Differential Equations are no longer covered in this course. Instead we do applications to areas, volumes, curve length and surface area.

This course is the second of three courses in the calculus sequence. While calculus I was mainly about derivatives or rate of change, this course is about integrals or accumulation, as well as about series. Differentiation and Integration are the two main concepts of calculus. In calculus III these concepts will be generalized to functions in several variables and vector-valued functions.

D. PREREQUISITES FOR THE COURSE

Prerequisites
MATH 2413 (Calculus I).

Corequisites
Registration for a lab section.
E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required Textbook(s)
The required textbook for the course is Stewart, Calculus, Early Transcendentals, 9th Edition together with access to WebAssign. You can access the textbook as an e-book through the homework system by only buying a WebAssign access code instead of buying a book, but access to the e-book will end at the end of the semester.

Optional Textbook(s) or Other References
The solution manual for the textbook is available, but not needed at all, since the homework system offers help.

Supplies
A graphing calculator is required for this class. I will support the TI-89, but in general you can use any graphing calculator. All the class demonstrations will be done with a TI-89.
For the lab you will get a separate syllabus.
The homework is in WebAssign, accessed by logging into BlackBoard [https://bb9.tamucc.edu/](https://bb9.tamucc.edu/) Clicking the WebAssign button on the top left should take you directly into WebAssign. You will need the access code that comes with the book or you can buy an access code online. There is an initial grace period where you can use the system without an access code, so “I don’t have the textbook yet” is not a valid excuse not to do homework right away. Homework is due the day of the next lecture at 3 PM and there are no extensions - the drop grades take care of any emergencies.

An outline of the class notes and quiz solutions, exam solutions will be available on BlackBoard. You may print them, but don’t have to print them. Costs for required printouts should not exceed $10, or $30 if you print the notes before class for easier note taking.

This class is a blended class. The original plan is that the three exams are in class exams and the final exam is online. For an online exam you will need a computer with a webcam. The Respondus lockdown browser does not work with iPads or linux/unix systems. If exams are given online, you will be required to have access to a Windows or Mac OS X computer for taking the exams. You may have to pay extra proctoring costs for online exams. This can be up to $50 per exam.

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT

Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can
also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

By the end of this course, students should be able to:

1. Evaluate integrals by the Fundamental Theorem of calculus, substitution, integration by parts, trigonometric substitution, and by using trigonometric identities to simplify an integrand.

2. Use integrals to determine volumes by using washers (slicing) or by using cylindrical shells and determine surface areas or curve lengths.

3. Determine whether an integral is an improper integral and determine whether an improper integral converges.

4. Determine convergence/divergence of a sequence.

5. Determine convergence/divergence of an infinite series using the integral, comparison, root or ratio test.

6. Determine the interval of convergence of a power series.

7. Find the Taylor or MacLaurin series for elementary functions.

8. Graph a parametric curve and compute the length of a parametric curve.

G. INSTRUCTIONAL METHODS AND ACTIVITIES

Methods and activities for instruction include: Lectures, calculator demonstrations and group activities. This class is a blended class. The original plan is to meet in person on Mondays and have online classes Wednesday and Friday. It is likely that the final exam will have to be an online exam.

H. MAJOR COURSE REQUIREMENTS AND GRADING

The methods of evaluation and the criteria for grade assignments are:

The lab part of the course is graded by the TA and counts for 20% of the course grade. The lab portion of the course has its own syllabus whose policies supplement this syllabus. Homework through WebAssign will be assigned every class and is due the day of the next lecture class at 3PM. At the start of each lecture I will answer homework questions for at most 10 minutes. Office hours are a great opportunity to ask more questions about homework. On-campus free tutoring in CASA is another way of getting help with the homework. Working with other students is fine, but be sure to turn in your own product in the end. Late homework receives no credit. The lowest three homework grades get dropped. No exam grades get dropped. The Final exam is comprehensive.

Calculator policies and partial credit:

For the hour-exams and the final exam calculators are permitted. All exams do have partial credit.
## ACTIVITY % of FINAL GRADE

<table>
<thead>
<tr>
<th>Activity</th>
<th>% of Grade</th>
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<tbody>
<tr>
<td>Three exams</td>
<td>55%</td>
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<tr>
<td>Homework</td>
<td>10%</td>
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<tr>
<td>Labs</td>
<td>20%</td>
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<tr>
<td>Final Exam</td>
<td>15%</td>
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</table>

Grading Scale: Grades will be no stricter than
A = 90.00 – 100%
B = 80.00 – 89.99%
C = 70.00 – 79.99%
D = 60.00 – 69.99%
F = below 60%

### I. COURSE CONTENT/SCHEDULE

<table>
<thead>
<tr>
<th>Date</th>
<th>Mode</th>
<th>Topic</th>
<th>Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 W 8/19</td>
<td>f2f</td>
<td>Antiderivatives, Fundamental Theorem of Calculus</td>
<td>4.9, 5.3</td>
</tr>
<tr>
<td>2 F 8/21</td>
<td>online</td>
<td>The Substitution Rule</td>
<td>5.5</td>
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<tr>
<td>3 M 8/24</td>
<td>f2f</td>
<td>The Substitution Rule</td>
<td>5.5</td>
</tr>
<tr>
<td>4 W 8/26</td>
<td>online</td>
<td>Areas between curves</td>
<td>6.1</td>
</tr>
<tr>
<td>5 F 8/28</td>
<td>online</td>
<td>Volumes</td>
<td>6.2</td>
</tr>
<tr>
<td>6 M 8/31</td>
<td>f2f</td>
<td>Volumes by Cylindrical Shells</td>
<td>6.3</td>
</tr>
<tr>
<td>7 W 9/2</td>
<td>online</td>
<td>Average Value of a Function</td>
<td>6.5</td>
</tr>
<tr>
<td>8 F 9/4</td>
<td>online</td>
<td>Integration by Parts</td>
<td>7.1</td>
</tr>
<tr>
<td>9 W 9/9</td>
<td>online</td>
<td>Integration by Parts</td>
<td>7.1</td>
</tr>
<tr>
<td>10 F 9/11</td>
<td>online</td>
<td>Trigonometric Integrals</td>
<td>7.2</td>
</tr>
<tr>
<td>11 M 9/14</td>
<td>f2f</td>
<td>Trigonometric Substitution</td>
<td>7.3</td>
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<tr>
<td>12 W 9/16</td>
<td>online</td>
<td>Trigonometric Substitution</td>
<td>7.3</td>
</tr>
<tr>
<td>13 F 9/18</td>
<td>online</td>
<td>Integration of Rational Functions by Partial Fractions</td>
<td>7.4</td>
</tr>
<tr>
<td>14 M 9/21</td>
<td>f2f</td>
<td>Exam # 1 covering sections 4.9 – 7.3</td>
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<tr>
<td>15 W 9/23</td>
<td>online</td>
<td>Integration of Rational Functions by Partial Fractions</td>
<td>7.4</td>
</tr>
<tr>
<td>16 F 9/25</td>
<td>online</td>
<td>Strategy for Integration</td>
<td>7.5</td>
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<tr>
<td>17 M 9/28</td>
<td>f2f</td>
<td>Strategy for Integration</td>
<td>7.5</td>
</tr>
<tr>
<td>18 W 9/30</td>
<td>online</td>
<td>Improper Integrals</td>
<td>7.8</td>
</tr>
<tr>
<td>19 F 10/2</td>
<td>online</td>
<td>Improper Integrals</td>
<td>7.8</td>
</tr>
<tr>
<td>20 M 10/5</td>
<td>f2f</td>
<td>Arc Length</td>
<td>8.1</td>
</tr>
<tr>
<td>21 W 10/7</td>
<td>online</td>
<td>Area of a Surface of Revolution</td>
<td>8.2</td>
</tr>
<tr>
<td>22 F 10/9</td>
<td>online</td>
<td>Sequences</td>
<td>11.1</td>
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<tr>
<td>DATE</td>
<td>MODE</td>
<td>TOPIC</td>
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<tr>
<td>23 M 10/12</td>
<td>f2f</td>
<td>Series</td>
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<tr>
<td>24 W 10/14</td>
<td>online</td>
<td>The Integral Test and Estimates of Sums</td>
<td>11.3</td>
</tr>
<tr>
<td>25 F 10/16</td>
<td>online</td>
<td>The Comparison tests</td>
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</tr>
<tr>
<td>26 M 10/19</td>
<td>f2f</td>
<td>Exam # 2 covering sections 7.1 – 11.3</td>
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<tr>
<td>27 M 10/21</td>
<td>online</td>
<td>Alternating Series</td>
<td>11.5</td>
</tr>
<tr>
<td>28 W 10/23</td>
<td>online</td>
<td>Absolute Convergence and the Ratio and Root Tests</td>
<td>11.6</td>
</tr>
<tr>
<td>29 F 10/26</td>
<td>f2f</td>
<td>Absolute Convergence and the Ratio and Root Tests</td>
<td>11.6</td>
</tr>
<tr>
<td>30 M 10/28</td>
<td>online</td>
<td>Strategies for Testing Series</td>
<td>11.7</td>
</tr>
<tr>
<td>31 W 10/30</td>
<td>online</td>
<td>Strategies for Testing Series</td>
<td>11.7</td>
</tr>
<tr>
<td>32 F 11/2</td>
<td>f2f</td>
<td>Power Series</td>
<td>11.8</td>
</tr>
<tr>
<td>33 M 11/4</td>
<td>online</td>
<td>Power Series</td>
<td>11.8</td>
</tr>
<tr>
<td>34 W 11/6</td>
<td>online</td>
<td>Representation of Functions as Power Series</td>
<td>11.9</td>
</tr>
<tr>
<td>35 F 11/9</td>
<td>f2f</td>
<td>Taylor and MacLaurin series</td>
<td>11.10</td>
</tr>
<tr>
<td>36 M 11/11</td>
<td>online</td>
<td>Taylor and MacLaurin series</td>
<td>11.10</td>
</tr>
<tr>
<td>37 W 11/13</td>
<td>online</td>
<td>Curves Defined by Parametric Equations</td>
<td>10.1</td>
</tr>
<tr>
<td>38 F 11/16</td>
<td>f2f</td>
<td>Exam # 3 covering sections 11.3 – 11.10</td>
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<tr>
<td>39 M 11/18</td>
<td>online</td>
<td>Curves Defined by Parametric Equations</td>
<td>10.1</td>
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<tr>
<td>40 M 11/20</td>
<td>online</td>
<td>Calculus with Parametric Curves</td>
<td>10.2</td>
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<tr>
<td>41 M 11/23</td>
<td>online</td>
<td>Review</td>
<td></td>
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The comprehensive Final Exam is on Monday, December 7, 8:00 AM – 10:30 AM. It is an online exam.

Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The exams shown are directly related to the Student Learning Outcomes described in Section F.

J. COURSE POLICIES

COVID-19
Face Coverings—Face coverings (cloth face covering, surgical mask, etc.) must be properly worn in all non-private spaces including classrooms, teaching laboratories, common spaces such as lobbies and hallways, public study spaces, libraries, academic resource and support offices, and outdoor spaces where 6 feet of physical distancing is difficult to reliably maintain. Extra masks will be made available if needed.

Attendance/Tardiness
Attendance will be taken each class. For most students attending class is a faster way of learning the material than trying to catch up on missed material solely from the book. Tardiness is often disruptive to the whole class and is not appreciated. If you are delayed and arrive late for class please do so quietly. Usually the topic/technique of the day is introduced in the first few minutes of class; missing that part usually means that you will be lost all class.
Late Work and Make-up Exams
Missed homework assignments can not be made up; the drop grade accommodates those. Make-up exams will not be given. If a student misses an exam and has a valid excuse, the final exam score will serve as the score for that exam. Only one exam can be replaced by the final, all other missed exams count as zero points.

Extra Credit
There is no extra credit in this class.

Cell Phone Use
Cell phones and such must be turned off before class. Each time your phone rings during class, your course grade goes down by 1%.

Laptop Use
You may use a laptop to take notes during lecture. Distracting other students by surfing the web is not acceptable behaviour.

Food in Class
No food in class (except during the final, where non-noisy foods are OK).

Missed Exam
If you have to miss an exam, it is your responsibility to contact me no later than the day of the exam. Failure to contact me on or before the exam day results in a grade of zero points for the exam. This also applies to the final exam. For missed final exams due to an acceptable excuse the university rules about I (Incomplete) grades apply and the make-up is at the instructor’s convenience early in the next long semester. Only extreme emergencies or official university business are acceptable reasons to miss exams and documentation will be required. Car trouble, routine doctor’s appointments, family reunions or graduations of siblings etc. are not valid reasons to miss exams. If your reason to miss the exam is not a valid one, your exam score is 0 points. Be sure to check before missing an exam whether your reason is acceptable.

Participation
Participation is not part of the grade, but you learn more by interacting, than by watching passively.

K. COLLEGE AND UNIVERSITY POLICIES

- **Academic Integrity (University)**
  University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.
Classroom/Professional Behavior  Texas A&M University–Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

Statement of Civility  Texas A&M University–Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

Deadline for Dropping a Course with a Grade of W (University)  I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with your academic advisor, the Financial Aid Office, and me, before you decide to drop this course. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Please consult the Academic Calendar ([http://www.tamucc.edu/academics/calendar/](http://www.tamucc.edu/academics/calendar/)) for the last day to drop a course.

Grade Appeals Appeals (College of Science and Engineering)  As stated in University Procedure 13.02.99.C0.03, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is required to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C0.03, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at [http://academicaffairs.tamucc.edu/rules_procedures/assets/13.02.99.c0.03_student_grade_appeals.pdf](http://academicaffairs.tamucc.edu/rules_procedures/assets/13.02.99.c0.03_student_grade_appeals.pdf). For assistance and/or guidance in the grade appeal process, students may contact
the chair or director of the appropriate department or school, the Office of the
College of Science and Engineering Dean, or the Office of the Provost.

• Disability Services
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute
that provides comprehensive civil rights protection for persons with disabilities.
Among other things, this legislation requires that all students with disabilities be
guaranteed a learning environment that provides for reasonable accommodation of
their disabilities. If you believe you have a disability requiring an accommodation,
please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.
If you are a returning veteran and are experiencing cognitive and/or physical access
issues in the classroom or on campus, please contact the Disability Services office
for assistance at (361) 825-5816.

http://disabilityservices.tamucc.edu/

• Civil Rights Complaints
Texas A&M University-Corpus Christi is committed to fostering a culture of caring
and respect that is free from discrimination, relationship violence and sexual miscon-
duct, and ensuring that all affected students have access to services. For information
on reporting Civil Rights complaints, options and support resources (including preg-
nancy support accommodations) or university policies and procedures, please con-
tact the University Title IX Coordinator, Sam Ramirez (Samuel.ramirez@tamucc.edu)
or Deputy Title IX Coordinator, Rosie Ruiz (Rosie.Ruiz@tamucc.edu) x5826, or
visit website at Title IX/Sexual Assault/Pregnancy.

• Limits to Confidentiality
Essays, journals, and other materials submitted for this class are generally con-
sidered confidential pursuant to the University’s student record policies. However,
students should be aware that University employees, including instructors, are not
able to maintain confidentiality when it conflicts with their responsibility to report
alleged or suspected civil rights discrimination that is observed by or made known
to an employee in the course and scope of their employment. As the instructor, I
must report allegations of civil rights discrimination, including sexual assault, rela-
tionship violence, stalking, or sexual harassment to the Title IX Coordinator if you
share it with me.

These reports will trigger contact with you from the Civil Rights/Title IX Compli-
ance office who will inform you of your options and resources regarding the incident
that you have shared. If you would like to talk about these incidents in a confi-
dential setting, you are encouraged to make an appointment with counselors in the
University Counseling Center.

• Statement of Academic Continuity
In the event of unforeseen adverse event, such as a major hurricane and classes could
not be held on the campus of Texas A&M University–Corpus Christi this course
would continue through Blackboard and/or e-mail. In addition the syllabus and
class activities may be modified to allow continuation of the course. University Facilities (i.e. e-mail, web sites, and Blackboard) will be operational within two days of closing the physical campus. However, students need to make certain that the course instructor has a primary and secondary way of contacting each student.

L. OTHER INFORMATION

- Academic Advising
  The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

GENERAL DISCLAIMER

I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.