

**Fall 2017**  
**Math 3B – Calculus II (Class Code 40717)**

**Class Hours & Location:** TuTh 10:00am – 12:15pm, Rm 322

**Instructor:** Kelly Pernell    **Office:** Rm 353 BCC    **Email:** kpernell@peralta.edu

**Office Hours:** Mon, Wed, & Thu 1:30–3pm, & Tue 1:30 – 2pm

**Instructor Web Site for additional class info:**

<http://www.berkeleycitycollege.edu/wp/kpernell>

**Textbook and Required Materials**

The textbook used to present the course material is:

*Calculus, Early Transcendentals, 8<sup>th</sup> Edition*  
by James Stewart  
Brooks/Cole Publishing  
ISBN 978-1-285-74155-0

Chapters 6 – 11 will be covered.

You will need a non-graphing scientific calculator that can do trigonometric and logarithmic calculations. Access to a graphing calculator for homework is encouraged and sometimes suggested but not required. Consider adding a graphing calculator app to your mobile device or using free graphing calculator apps online.

**Course Schedule**

Each chapter is divided into sections. We will cover about two sections per class period. It is your responsibility to attend class regularly to stay on top of the course material.

There are three midterm exams and one comprehensive final exam for this class. (Exam 1 - Ch 7, Exam 2 - Ch 6 & 8, Exam 3 - Ch 11, Final Exam - Ch 6 – 11 with focus on Ch 9 & 10).

Please review the tentative calendar/schedule of topics provided at the end of the syllabus.

To be successful in this course, you should spend about 10 hours per week outside of class time, studying the material and completing exercises. Some may need *more* time to do well.

## Grading Policy

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

Your course grade is based on exams, homework, and participation. The percentage breakdown for each component is as follows:

<b>Midterm Exams</b>	60%
<b>Final Exam</b>	20%
<b>Homework</b>	15%
<b>Participation</b>	5%

At the end of the course I will drop your lowest midterm exam score.

## Exams

Midterm exams are worth 60% of your course grade. They will include material and examples presented in lecture, examples from the textbook, and the exercises you are assigned in homework and for practice.

The Final Exam is worth 20% of your course grade. It will be a comprehensive exam, covering all topics presented in the course. It will contain a slight focus on Chapters 9 & 10 because they are the last chapters covered in the class.

*The Final Exam will take place on the Tuesday of Final Exam week during class time 10am – 12:15pm.*

*Absolutely no make-up exams will be given.*

At the end of the course, I will drop your lowest midterm exam score.

Everyone must take the Final Exam.

Everyone is allowed to use a *non-graphing* scientific calculator during exams. Other electronic devices are NOT permitted.

***Please*** keep all of your exams and take the time to review your mistakes.

## Cheating Policy

Cheating is a very serious offense that I will not tolerate. If you are caught cheating on an exam, you will receive a grade of 0% for that exam and you will lose all Participation points. I will also drop your overall course grade by 10%. In other words, *no one caught or involved in cheating will earn an A in the course.*

Both, or all, parties involved in a cheating incident will be charged.

## Homework

Homework is worth 15% of your course grade. In order to receive full credit on homework, you must show your work to arrive at your answers (i.e. write out your steps). If a question does not require calculation, you must explain in words (describe) how you arrived at your answer.

You will lose points on a homework assignment if you fail to attempt/complete several problems, fail to show/write steps on problems, submit a

messy/unorganized assignment that is hard to grade, and/or turn in an assignment very late (more than a week past its due date).

Homework problems will be assigned for each chapter. They can be found on my BCC faculty page. As part of your homework, you are expected to read the textbook and attend class regularly. You will have a chance to work on homework during class. I often provide time for students to ask questions on homework during the class break and towards the end of class.

*Please* practice your mathematics writing skills. In order to succeed in future math courses, it is critical to know how to express yourself mathematically.

***Please save*** all homework assignments in a file, folder, or binder. Never throw away any work you do for this course.

## **Participation**

Participation is worth 5% of your course grade. Regular and consistent exposure to the material is very important for success in this course. Evidence of regular and consistent exposure comes from regularly attending class, coming to office hours, showing progress on Khan Academy (see resources below), turning in homework assignments on time, and passing exams.

Students who frequently miss class, submit homework assignments late, and/or miss exams will likely lose Participation points.

While attending class, please help to maintain a most excellent learning environment. I consider it my responsibility to welcome and positively respond to all questions, however simple they are. I ask the class to help me establish a safe environment for all to speak up when they need help. Please be respectful, courteous, and encouraging to others in the class. Please be mindful of the sounds and disruptions you make (e.g. talking, arriving late, using cell phones, etc. may create problems for some students' focus.)

Students who miss more than two consecutive weeks of class without contacting me to explain their absences may be dropped from the course. Those who perform poorly on an exam then fail to take the next one *will* be dropped.

## **Learning Resources**

The best way to learn the material is to regularly attend class and DO YOUR HOMEWORK.

Tutoring is available in BCC's Learning Resources Center. The LRC is located on the first floor in room 112.

Please come to my office hours if you have specific questions that can't be fully addressed in class.

If you need to refresh prerequisite skills in intermediate algebra, pre-calculus, or trigonometry, please join Khan Academy at <http://www.khanacademy.org>. It's free! Once you have an account, go to <http://www.khanacademy.org/coaches>, then type the code FZ7K8P to add me as a coach. I will then be able to see your progress online. I won't have time to actively provide feedback online, however, I

can work with you in office hours to determine the best way to fill in any math gaps you have.

The best way to get started with Khan Academy is to find a math subject you want to explore, then start the Mission work for that subject. For this class, I recommend doing the mission for AP Calculus BC. If you are struggling with prerequisite concepts, I recommend doing the missions for Trigonometry, Precalculus, and/or AP Calculus AB.

Though I encourage you to explore KHAN ACADEMY as a tutorial resource, it is OPTIONAL work for you to do (i.e, it's not part of your course grade). You are not required to join and complete tasks on Khan Academy. I simply offer it as a tool to monitor your tutoring progress and to provide more personal guidance when you need help. I will not offer Khan Academy work as a form of extra credit. I will only consider it as a form of evidence of your participation in this course, should you need it.

Your homework and exams are also the evidence outside of attending class of your efforts to succeed in the course.

### **Disability Statement**

Berkeley City College is committed to providing reasonable accommodations for all individuals with disabilities. This syllabus and the course materials are available in alternate formats upon request. If you have a disability that may have some impact on your work in this class and for which you may need accommodations, please see a staff member in Programs & Services for Students with Disabilities (PSSD) to request accommodations. For students that receive accommodation letters, please meet with me to discuss academic arrangements as early in the term as possible. PSSD can be found in Room 261 of the Main 2050 Center Street campus or by phone at (510) 981-2812 or 2813.

### **Former Foster Youth**

We are making a special effort to support foster youth at BCC. If you are a former foster youth you may qualify for scholarships and services to help you achieve your educational goals. You can contact Jennifer Ajinga directly (Room 349, Email: [jajinga@peralta.edu](mailto:jajinga@peralta.edu)) for more information.

### **Student Learning Outcomes**

Representation: Represent relevant information in various mathematical or algorithmic forms.

Calculation: Calculate accurately and comprehensively.

Interpretation: Interpret information presented in mathematical or algorithmic forms.

Application/Analysis: Draw appropriate conclusions based on the quantitative analysis of data, while recognizing the limits of this analysis.

Communication: Explain quantitative evidence and analysis.

## **Justification for the Course**

Satisfies the General Education and Analytical Thinking requirement for Associate Degrees. Provides foundation for more advanced study in mathematics and related fields, such as physics, engineering, and computer science. Satisfies the Quantitative Reasoning component required for transfer to UC, CSUC, and some independent four-year institutions. Acceptable for credit: CSU, UC.

## **Tentative Calendar of Topics**

### **Wk 1 – Aug 22, 24**

5.3 Fundamental Theorem of Calculus (Review)

5.5 The Substitution Rule (Review)

7.1 Integration by Parts

### **Wk 2 – Aug 29, 31**

7.2 Trigonometric Integrals

7.3 Trigonometric Substitution

### **Wk 3 – Sep 5, 7**

7.4 Integration of Rational Functions by Partial Fractions

7.5 Strategy for Integration

7.6 Integration Using Tables

### **Wk 4 – Sep 12, 14**

7.7 Approximate Integration

7.8 Improper Integrals

Review Chapter 7

### **Wk 5 – Sep 19, 21**

*EXAM 1 – Ch 7 - Tuesday, Sep 19th*

6.1 Areas Between Curves

6.2 Volumes

### **Wk 6 – Sep 26, 28**

6.3 Volumes by Cylindrical Shells

6.4 Work

6.5 Average Value of a Function

### **Wk 7 – Sep 3, 5**

8.1 Arc Length

8.2 Area of a Surface of Revolution

8.3 Applications to Physics and Engineering

### **Wk 8 – Oct 10, 12**

Review Chapters 6 & 8

*EXAM 2 – Ch 6 & 8, Thursday, Oct 12th*

**Wk 9 – Oct 17, 19**

- 11.1 Sequences
- 11.2 Series
- 11.3 The Integral Test and Estimates of Sums
- 11.4 The Comparison Tests

**Wk 10 – Oct 24**

- 11.5 Alternating Series
- 11.6 Absolute Convergences and the Ratio and Root Tests

**Wk 11 – Oct 31, Nov 2**

- 11.7 Strategy for Testing Series
- 11.8 Power Series
- 11.9 Representations of Functions as Power Series

**Wk 12 – Nov 7, 9**

- 11.10 Taylor and Maclaurin Series
- Review for Exam 3

**Wk 13 – Nov 14, 16**

*EXAM 3– Ch 11 – Tuesday, Nov 14th*

- 9.1 Modeling with Differential Equations
- 9.2 Direction Fields and Euler's Method

**Wk 14 – Nov 21**

- 9.3 Separable Equations
- 9.5 Linear Equations

**Wk 15 – Nov 28, 30**

- 10.1 Curves Defined by Parametric Equations
- 10.2 Calculus with Parametric Curves
- 10.3 Polar Coordinates
- 10.4 Areas and Lengths in Polar Coordinates

**Wk 16 – Dec 5, 7**

- 10.5 Conic Sections
- 10.6 Conic Sections and Polar Coordinates
- Review for Final Exam

**Wk 17 – Dec 12**

*Finals Week – No Classes Held*

*FINAL EXAM Tuesday, December 12th, 10am – 12:15pm, room 322*