**Spring 2019**

**Math 3A – Calculus I (Class Code 20643***)*

**Class Hours & Location:** MW 8:00am – 10:15am, 2000 Center St, Room 3

**Instructor:** Claudia Abadia **Office:** Rm 355 BCC **Email:**cabadia@peralta.edu

**Office Hours:** Monday/Wednesday 10:30am –11:30am, Tuesday/Thursday8:30am-9:30am or by appointment

**Instructor Web Site for additional class info:** http://www.berkeleycitycollege.edu/wp/cabadia

**Textbook and Required Materials**

The textbook used to present the course material is:

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

Chapters 1 – 5 will be covered. Topics from Chapter 6 will be included as well.

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 1-2, Exam 2 - Ch 3, Exam 3 - Ch 4, Final Exam – Ch 1 – 5 with a focus on Ch 5).

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:

 **Midterm Exams** 60%

 **Final Exam** 25%

 **Homework** 15%

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 25% of your course grade. It will be a comprehensive exam, covering all topics presented in the course. It will contain a slight focus on Chapter 5 because it is the last chapter covered in the class.

*The Final Exam will take place on the Monday 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.

**Attendance Policy**

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*.*

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 AB. 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.. Berkeley City College announces a new service for foster youth. NextUp is a state funded program that provides various support services to eligible current and former foster youth. If you need help with your college tuition, books, supplies, job training and other assistance to help you earn your college degree, connect with Berkeley City College’s NextUp office.

Contact them at (510) 981-2831 for more information

**Student Learning Outcomes**

Representation: Represent relevant information in various mathematical or algorithmic forms. (conversion of words to mathematical symbols and graphs)

Calculation: Calculate accurately and comprehensively.

Interpretation: Interpret information presented in mathematical or algorithmic forms. (for example, interpretations of equations, graphs, diagrams, tables)

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

Communication: Explain quantitative evidence and analysis. (conversion of mathematical symbols and graphs to words)

**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.

**Important Dates**

* January 27th Last Day to Add w/o permission number
* February 1st Last Day to Add with a permission number
* February 3rd Last Day to Drop Without a “W”.
* February 8th Last Day to File for PASS/NO PASS
* February 15th-18th President’s Birthday-Holiday
* March 1st Last Day to File Petition for ADT
* March 15th Last Day to File Petition for the AA/AS
* March 21st Profession Day-No Instruction
* April 2nd-April 7th Spring Break
* April 26th Last Day to Withdraw and Receive a “W”.
* May 17th Malcom X Birthday-Holiday Observance
* May 20th -24th Final Examinations
* **May 20th Final Exam 8:00AM -10:00AM**

**Tentative Calendar of Topics**

**Wk 1 – Jan 23,**

Suggest Students Review Chapter 1

Section 1.1 - four ways to represent a function

Section 1.4 - exponential functions

Section 1.5 - inverse functions and logarithms

Appendix D trigonometry review

**Wk 2 – Jan 28,30**

Section 2.1 - the tangent and velocity problems

Section 2.2 - the limit of a function

**Wk 3 – Feb 4, 6**

Section 2.3 - calculating limits using the limit laws

Section 2.4 - the precise definition of a limit

**Wk 4 – Feb 11, 13**

Section 2.7 - derivatives and rates of change

Section 2.5 – continuity

Section 2.6 - limits at infinity; horizontal asymptotes

**Wk 5 – Feb 20**

Section 2.7 – derivatives and rates of change

Section 2.8 - the derivative as a function

**Wk 6 – Feb 25,27**

Review Chapter 2

Section 3.1 - derivatives of polynomials and exponential functions

Section 3.2 - the product and quotient rules

**Wk 7 – Mar 4, 6**

**Exam 1 – Mon Mar 5 – Chapter 1 & 2**

Section 3.3 - derivatives of trigonometric functions

Section 3.4 - the chain rule

**Wk 8 – Mar 11, 13**

Section 3.5 - implicit differentiation

Section 3.6 - derivatives of logarithmic functions

Section 3.8 - exponential growth and decay

Section 3.9 - related rates

**Wk 9 – Mar 18, 20**

Section 3.10 - linear approximations and differentials

Section 3.11 - hyperbolic functions

Review Chapter 3

**Wk 10 – Mar 25, 27**

**Exam 2 – Mon Mar 26 – Chapter 3**

Section 4.1 - maximum and minimum values

Section 4.2 - the mean value theorem

**Wk 11 – Apr 8,10**

Section 4.3 - how derivatives affect the shape of a graph

Section 4.5 - summary of curve sketching

Section 4.4 - indeterminate forms and L'Hospital's Rule

**Wk 12 – Apr 15, 17**

Section 4.7 - optimization problems

Section 4.8 - Newton's method

Section 4.9 - anti-derivatives

**Wk 13 – Apr 22, 24**

Section 5.1 - areas and distances

Section 5.2 - the definite integral

Review Chapter 4

**Wk 14 – Apr 29, May 1**

**Exam 3 - Mon Apr 30th – Chapter 4**

Section 5.3 - the fundamental theorem of calculus

Section 5.4 - indefinite integrals and the net change theorem

**Wk 15 – May 6, 8**

Section 5.4 - indefinite integrals and the net change theorem

Section 5.5 - the substitution rule

Section 6.1 - areas between curves

**Wk 16 – May 13, 15**

Review for Final Exam

**Wk 17 – May 20 - FINAL EXAM**

*Finals Week – No Classes Held*

Final Exam Monday, May 20, 8 am – 10:00am, 2000 Center St, Rm 3