

**MATH 122B – First Semester Calculus**  
**Sections 6 and 13**  
**Fall 2015**

MTWRF

**Instructor Contact Information**

Instructor: Kerima Ratnayaka

Office: ENR2-Environment and Natural Resources Phase 2 building (The new bldg west of 6<sup>th</sup> street garage)-Room N213

Office Hours: Mondays 10-11:30am/Wednesdays 2-3:30pm/Fridays 1-2pm or by appointments. The Friday office hour in Math East 145

Email: [kerimar@math.arizona.edu](mailto:kerimar@math.arizona.edu) (I do have other university emails BUT THIS IS THE EMAIL YOU NEED TO USE FOR THIS CLASS)

Phone: 621-0649

Website: <http://math.arizona.edu/~kerimar>

Calculus Website: <http://math.arizona.edu/~calc>

- **CLASS ANNOUNCEMENTS AND HW DUE DATES WILL BE POSTED ON WEBASSIGN –see the due dates for the written HW problems from the text and webassign assignments under webassign announcements**

**Assignment from Math 122A**

A required written homework assignment will be collected in class on Thursday, September 17. No credit will be given for this assignment if it is late. The assignment is worth 20 points and is available at <http://math.arizona.edu/~calc/m122.html>.

**Written HW due dates for Exam 1(tentative dates)**

Section	Text book Problems	Due date(beg. Of class)
1.8	30, 56, 59, 62	9/18
2.1	4, 12, 16, 20, 28, 29-39	9/21
2.2	14, 18, 20, 43, 45, 51-58	9/22
2.3	20, 22, 28, 45, 48, 52-60	9/23
2.4	2, 4, 20, 28, 34-43	9/25
2.5	6, 12, 27, 30, 33-41	9/28
2.6	8, 16, 17-26	9/30
3.1	2, 38, 50, 62, 68, 70, 76, 83-92	10/1
3.2	18, 34, 38, 40, 49-55	10/2

### Webassign due dates for exam 1(tentative dates)

Section	Due date(11:59PM)
2.1	9/21
2.2	9/22
2.3	9/23
2.4	9/25
2.5	9/28
2.6	9/30
3.1	10/1
3.2	10/2

### Webassign settings

Five attempts are allowed for free response answers.

- Two or three attempts are allowed for multiple-choice or select all that apply type answers.
- One attempt is allowed for true/false answers

### **General Information**

Course Description: Math 122B is an introduction to first-semester calculus for engineering, science and math students, from rates of change to integration, with an emphasis on understanding, problem solving, and modeling. Topics covered include key concepts of derivative and definite integral, techniques of differentiation, and applications, using algebraic and transcendental functions.

Prerequisite: Math 122A.

### COURSE MATERIALS

- 🐾 Text – ***Calculus Single Variable, Sixth Edition* by Hughes-Hallett et al. published by Wiley. The computer grading program**
- 🐾 WebAssign -Online HW's
- 🐾 Graphing calculator - **The TI-83 or TI-84 models are recommended. Calculators that perform symbolic manipulations, such as the TI-89, NSpire CAS, or HP50g, cannot be used**

🐾 **Class notes-Must purchase from UA book store.**

### **Communication with Students**

It is the student's responsibility to check for announcements and messages regularly. My preferred mode of communication is email listed under instructor contact information. The subject line MUST have your First and Last name and your class section number. Emails will be responded within 24 hours. I do check email on the weekends but again do not expect a prompt response on the weekend.

## Attendance/Administrative Drops

Daily attendance is expected from every student. Students who miss the first class meeting may be administratively dropped unless they have made other arrangements. Students may be administratively dropped for more than 3 unexcused absences or missing more than 5 HW assignments.

Please note the following:

- All holidays or special events observed by organized religions will be honored for those students who show affiliation with that particular religion,
- Absences pre-approved by the UA Dean of Students (or Dean's designee) will be honored.

It is the student's responsibility to notify the instructor in advance of an absence related to religious observation or an activity for which a Dean's excuse has been granted, and to arrange for how any missed work will be handled.

## Expected Classroom Behavior

Students should turn off all electronic devices during class unless the device is deemed necessary for the class by the instructor. This includes, but is not limited to cell phones, mp3 players, and laptops. If you have a disability-related accommodation that involves the use of a computer during class, please discuss this with your instructor in advance. No talking during class. HW problems will not be discussed in class. Grades will not be discussed in class

## Homework

- **Late assignments will not be accepted for any reason.** WebAssign assignments are due at the time stated in the system, which is generally 11:55 p.m.(Arizona time). Written Homework is due at the beginning of the class period.

## Specific Homework Procedures

- Homework is due at the beginning of the class period.
- ***YOU MUST HAVE YOUR NAME ON QUIZZES AND HW'S. ELSE YOU MAY LOOSE POINTS***
- **Selected homework will be graded and returned at a regular basis.**
- Do your homework on regular 8.5 x 11" notebook paper. You may write on both sides of the paper. **DO NOT HAND IN ANY ASSIGNMENT WITHOUT REMOVING THE FRINGED EDGE.**
- Your name, section number and textbook section number should be written at the top of every page.
- Multiple pages should be **stapled** together. No creative folding techniques, please.
- Each problem should be **neatly** written, with all the intermediate steps included and the problem number clearly marked. Written explanations should be included wherever appropriate. Include units on answers. Graphs should be labeled with the window clearly marked.
- You will not be given credit for problems that are not legible. If your handwriting is illegible, you will be given a warning, after which I will no longer accept your assignments. Avoid excessive scratch-outs.
- Late homework will not be accepted.
- **Most homework questions are to be handled during my office hours and in the tutoring room.** When time allows, I will discuss solutions to homework problems or to problems similar to those on the homework. This usually involves one or two problems. Class time is devoted to the explanation of the current topic and to the solution of problems involved with this topic.

## Why Write in a Math Course?

Whatever your chosen profession, the ability to communicate effectively with others is essential. Writing helps to clarify your thought processes, which in turn helps you to present your work in a clear and organized manner. All of this aids in developing a deeper understanding of the concepts. In addition to a better understanding of the material, writing clear well-articulated answers provides a permanent record of your thoughts on solving a problem. This is valuable when you look back at problems while studying for an exam. Finally, writing explanations of your solutions will help you and your instructor to identify specific points or concepts where understanding is unclear.

### Guidelines for Writing Your Homework

- **Write as if the reader does not already know what you want to say.** Assume that the reader is a classmate who does not understand the problem or how to do it. This assumption will encourage complete and clear answers. The reader can only see what you wrote, not what you meant to say. Remember the reader is not a mind reader.
- **Focus on the process, not the final solution.** Describe your thinking. Focus your explanation on why you are doing a particular step, not on what mechanical process you used.
- **Write complete sentences.**
- **Use an easy to read format.** Organize your work in a logical manner. Do not crowd your work. Write legibly.
- **Avoid vague words like "it".** Most problems contain many quantities. "It" does not tell which quantity you are referring to. The meaning may be clear to you, but not necessarily to the reader.
- **Define any symbol you use that was not introduced in the problem.**
- **Always use complete and proper mathematical notation.** Avoid the misuse of symbols, especially the equal sign. The equal sign states that the expressions on both sides of the equation represent the same thing. The equal sign does **not** mean, "the next step is", "means", "the answer is" or the expressions on either side of the equal signs are "somehow" related. Remember, all answers must be accompanied with the proper notation. Also, always use units on your answers and label graphs completely and clearly, including scales and labels on axes.
- **If you used a graphing calculator in your solution, explain your process.**
- **When doing a mechanical problem, you do not need to tell me that you just divided (or any other obvious mathematical process).** I can see mechanical steps. You do not need to explain this.
- **On all handed in assignments all work must be shown or no credit will be given. Unless otherwise specified all answers must be exact. When the problem is an application write the exact answer and then a decimal approximation. Be sure to include units.**

### Important

- Webassign HW assignments (50 points), and other HW assignments (50 points). Other HW assignments comprises of Written HW and pop quizzes. The total HW points is 100.

- **LATE HOMEWORK WILL NOT BE ACCEPTED. MAKEUP QUIZZES NOT PERMITTED(The only exception would be an official UA Deans excuse)**
- **The in class quizzes may be announced or unannounced.**

- Webassign HW Calculation Formula.

Total Score earned for webassign HW's \* 50

(Total possible points – 10 % of the total possible points)

[Note the maximum points you can earn is 50 points]

- Other HW Calculation Formula.

Total Score earned for other HW's \* 50

(Total possible points – 10 % of the total possible points)

[Note the maximum points you can earn is 50 points]

*Instructions for WebAssign:* To create an account for this class go to <http://webassign.net>, click on the Log-In button, and then click on the I Have a Class Key button. Class key information (PLEASE USE THE CORRECT CLASS KEY to enroll into the CORRECT SECTION) There is a 14-day grace period (from the first day of classes) before you must purchase/ submit your access code for this class. Each time you log-in, you will see a reminder.

PLEASE NOTE WE WILL NOT USE WEBASSIGN EMAILS IN THIS CLASS.

Section 6 (Class meet at 9:00AM)  
arizona 9184 2002

Section 13 (Class meets at 12:00pm)  
arizona 2064 1893

### **Assignment from Math 122A**

A required written homework assignment will be collected in class on Thursday, September 17. No credit will be given for this assignment if it is late. The assignment is worth 20 points and is available at <http://math.arizona.edu/~calc/m122.html>.

### **Midterm Exams**

The four in-class exams are tentatively scheduled for Monday, October 5; Monday, October 26; Thursday, November 12; and Friday, December 4. Each exam will be worth 100 points. All electronic devices must be turned off during all exams. In general, there will be no make-up exams in the course. However, in complex and unusual circumstances which are beyond your control, a make-up exam may be given on a case-by-case basis. This will require providing a detailed account of the situation and supporting documents. Approval in these cases is at the sole discretion of the instructor and/or the dean of students.

### **Final Exam**

The final exam is a 200 point common department exam scheduled for Tuesday, December 15 from 1:00-3:00 pm. The room for the final exam will be announced by your instructor, and will be posted on the Calculus website. Additional information and a study guide can be found at <http://math.arizona.edu/~calc>. The University's Exam regulations for final exam week will be strictly followed. <http://www.registrar.arizona.edu/schedule101/exams/examrules.htm>

Unless there are extenuating circumstances, a missed midterm examination or a missed final examination will result in a score of zero for that work. **Makeup tests are given only at the discretion of the instructor.**

### Calculation of Course Grades

Grades will be determined by a percentage of the 720 total possible points in the course. Grades will be no lower than those set forth in the scale below:

A: 100-90%    B: 89-80%    C: 79-70%    D: 69-60%    E: 59-0%

4 Midterm exams	400 points
HW	100 points
Final Exam	200 points
122A assignment(Due September 17 <sup>th</sup> )	20 points

Please note the following: A grade of C or better in Math 125 or 122B is a necessary prerequisite for Math 129 (Calculus II). Students who receive a D in Math 125 or 122B will receive credit for the course towards graduation requirements, and will be able to use their course for the general education math requirement, but will not be automatically qualified to register for Math 129.

A grade of "I" (Incomplete) will be given only at the instructor's discretion, according to University Policy as described at <http://www.registrar.arizona.edu/gradepolicy/incomplete.htm>.

Grade disputes needs to be notified to me in person within 7 academic days of receiving a grade.

If a student earns a higher percentage on the final examination than on one of the midterms, then the student's lowest midterm score will be replaced by the percent scored on the final examination if all of the midterm exams were taken. This will not replace a missed unexcused exam.

### Withdrawals

If you withdraw from the course by September 26, the course will remain on your UAccess academic record with a status of dropped, but will not appear on your transcript. If you withdraw from the course between September 27 and November 8, you will receive a grade of W. The University allows withdrawals after November 8, but only with the Instructor's permission and Dean's signature. Late withdrawals will be dealt with on a case by case basis, and requests for late withdraw with a W without a valid reason may or may not be honored.

### Accessibility and Accommodations

It is the University's goal that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, please let your instructor know immediately so that you can discuss options. You are also welcome to contact Disability Resources (520-621-3268) to establish reasonable accommodations. Please be aware that the accessible table and chairs in the classroom should remain available for students who find that standard classroom seating is not usable.

### Academic Integrity

Students are responsible to inform themselves of University policies regarding the Code of Academic Integrity. Students found to be in violation of the Code are subject to penalties ranging from a loss of

credit for work involved to a grade of E in the course, and risk possible suspension or probation. The Code of Academic Integrity will be enforced in all areas of the course, including, but not limited to, homework, quizzes, and tests. For more information about the Code of Academic Integrity policies and procedures, including information about your rights and responsibilities as a student, see the following website: <http://deanofstudents.arizona.edu/academic-integrity/students/academic-integrity>

### **Student Code of Conduct**

Students at The University of Arizona are expected to conform to the standards of conduct established in the Student Code of Conduct. Prohibited conduct includes:

1. All forms of student academic dishonesty, including cheating, fabrication, facilitating academic dishonesty, and plagiarism.
2. Interfering with University or University-sponsored activities, including but not limited to classroom related activities, studying, teaching, research, intellectual or creative endeavor, administration, service or the provision of communication, computing or emergency services.
3. Endangering, threatening, or causing physical harm to any member of the University community or to oneself or causing reasonable apprehension of such harm.
4. Engaging in harassment or unlawful discriminatory activities on the basis of age, ethnicity, gender, handicapping condition, national origin, race, religion, sexual orientation, or veteran status, or violating University rules governing harassment or discrimination.

Students found to be in violation of the Student Code of Conduct are subject to disciplinary action. For more information about the Student Code of Conduct, including a complete list of prohibited conduct, see the following website: <http://deanofstudents.arizona.edu/accountability/students/student-accountability>

### **Other Relevant University Policies Relating to Conduct**

Please take note of the following University policies:

- Policy on Threatening Behavior by Students: <http://policy.web.arizona.edu/education-and-student-affairs/threatening-behavior-students>
- Nondiscrimination and Anti-Harassment Policy: <http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy>

**TUTORING:** All math department tutoring for courses through Math 122A and 122B will be done at Think Tank in Bear Down Gym. There are also Think Tank facilities at Park Center and the recreation center. For more information go to [www.studentaffairs.arizona.edu/thinktank](http://www.studentaffairs.arizona.edu/thinktank)

### **ENHANCED WEBASSIGN**

Our 6th edition text only comes with enhanced WA. That means the electronic text is part of WA. Students can opt to purchase only the WA account and not the paper textbook if they want. If they like to print out pages and it may be cheaper to purchase the bundle of textbook and WA from the bookstore. Note: When purchasing WA, the option of purchasing the version without the electronic book may appear in their choices, but as soon as they access an assignment it will tell them they must upgrade and pay the difference.

**Math 122B**  
**September 16 – December 9, 2015**  
**(MTWRF)**

<u>Monday</u>	<u>Tuesday</u>	<u>Wednesday</u>	<u>Thursday</u>	<u>Friday</u>
<b>Sep 14</b>	<i>Sep 15</i>	<i>Sep 16</i> Introduction  2.1-How Do We Measure Speed?	<i>Sep 17</i> 2.1-continued 2.2-The Derivative at a Point <b>Assignment from Math 122A due</b>	<b>Sep 18</b> 2.2-continued
<b>Sep 21</b> 2.3-The Derivative Function	<b>Sep 22</b> 2.4-Interpretations of the Derivative	<b>Sep 23</b> 2.4-continued	<b>Sep 24</b> 2.5-The Second Derivative	<b>Sep 25</b> 2.5-continued
<b>Sep 28</b> 2.6-Differentiability	<b>Sep 29</b> 2.6-continued	<b>Sep 30</b> 3.1-Powers and Polynomials	<b>Oct 1</b> 3.2-The Exponential Function	<b>Oct 2</b> Review
<b>Oct 5</b> <b>EXAM 1</b>	<b>Oct 6</b> 3.3-The Product and Quotient Rules	<b>Oct 7</b> 3.3-continued	<b>Oct 8</b> 3.4-The Chain Rule	<b>Oct 9</b> 3.4- continued
<b>Oct 12</b> 3.5-The Trigonometric Functions	<b>Oct 13</b> 3.6-The Chain Rule and Inverse Functions	<b>Oct 14</b> 3.6- continued	<b>Oct 15</b> 3.7-Implicit Functions	<b>Oct 16</b> 3.7- continued
<b>Oct 19</b> 3.8-Hyperbolic Functions	<b>Oct 20</b> 3.9-Linear Approximations	<b>Oct 21</b> 3.10-Theorems About Differentiable Functions	<b>Oct 22</b> 4.1-Using First and Second Derivatives	<b>Oct 23</b> 4.1- continued
<b>Oct 26</b> <b>EXAM 2</b>	<b>Oct 27</b> <b>4.2-Optimization</b>	<b>Oct 28</b> <b>4.2- continued</b>	<b>Oct 29</b> 4.3-Optimization and Modeling	<b>Oct 30</b> 4.3-Continued

**Sep 26 - Last day to drop with deletion from record using UAccess**

**Oct 7 - Last day to file for GRO**

**Oct 9 - Honors Convocation 3:00-5:00**

**Nov 8 - Last day to withdraw with W using UAccess**

**Math 122B**  
**September 16 – December 9, 2015**  
**(MTWRF)**

<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>
<b>Nov 2</b> 4.4-Families of Functions and Modeling	<b>Nov 3</b> 4.4-Continued	<b>Nov 4</b> 4.6-Rates and Related Rates	<b>Nov 5</b> 4.6- continued	<b>Nov 6</b> 4.7-L'Hopital's Rule, Growth, and Dominance
<b>Nov 9</b> 4.7- continued	<b>Nov 10</b> Review	<b>Nov 11</b> Veteran's Day No Classes	<b>Nov 12</b> EXAM 3	<b>Nov 13</b> 5.1-How Do We Measured Distance Traveled
<b>Nov 16</b> 5.2-The Definite Integral	<b>Nov 17</b> 5.3-The Fundamental Theorem and Interpretations	<b>Nov 18</b> 5.3- continued 5.4-Theorems About Definite Integrals	<b>Nov 19</b> 5.4- continued	<b>Nov 20</b> 6.1-Antiderivatives Graphically and Numerically
<b>Nov 23</b> 6.1- continued 6.2-Constructing Antiderivatives Analytically	<b>Nov 24</b> 6.2- continued	<b>Nov 25</b> 6.3-Differential Equations and Motion	<b>Nov 26</b> Thanksgiving No Classes	<b>Nov 27</b> Thanksgiving No Classes
<b>Nov 30</b> 6.4-Second Fundamental Theorem of Calculus	<b>Dec 1</b> 6.4- continued	<b>Dec 2</b> 7.1-Integration by Substitution	<b>Dec 3</b> Review	<b>Dec 4</b> EXAM 4
<b>Dec 7</b> 7.1- continued	<b>Dec 8</b> Review	<b>Dec 9</b> Review	<b>Dec 10</b>	<b>Dec 11</b>
<b>Dec 14</b>	<b>Dec 15</b> FINAL EXAM 1:00-3:00 pm	<b>Dec 16</b>	<b>Dec 17</b>	<b>Dec 18</b>

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