AP® Calculus AB

2014-2015

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Grading Scale:

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

Required Supplies:

Binder to keep all Notes

1 ream of white copy paper

Notebook paper

Pencils

Graphing Calculator---Important!

Grading Policy:

Test	50%
Quiz	25%
CW/HW	25%

Visit my site: http://schoolsites.leeschools.net/sfm/nereidar/SitePages/Home.aspx
Here you can find copies of class notes, keep up with work when you're absent and watch videos of class notes. There's also a list of links to helpful websites and a practice AP exam.

Course Overview:
The Advanced Placement Calculus AB course is comparable to a first semester university or college Calculus class. With that in mind, students are expected to demonstrate a higher level of accountability. This class should be treated as an actual college class. Calculus includes the study of limits, derivatives, and integrals, and applications of all of these ideas. At the conclusion of this course, it is my hope that all of my students have a deeper understanding of mathematics and an appreciation for its uses.

Classroom Policy:

Students are expected to follow the school wide rules, Cell phone policy, Tardy Policy, Attendance Policy and all other school policies and to observe the following:

- Students are responsible for any work missed due to any absences. Students are responsible for retrieving their make-up work. Any missed Test due to an absence will have to be made up the very next class or after school.
- **NO LATE WORK!** Any assignments not turned in on time will not be graded. If there are dire circumstances keeping any student from turning in work on time, then other arrangements must be made with the teacher.
- **ANY AND ALL WORK ASSIGNED TO STUDENTS MUST HAVE WORK SHOWN. ANY ASSIGNMENT COMPOSED OF BALD ANSWERS WILL RECEIVE A ZERO, NO EXCEPTIONS.**

Attendance:

It is vital that students attend every class session. Students will be responsible for any material they miss due to absences. Lessons can be found on the teacher's site. Missed Quizzes and Tests will be made up after school or during a student's free period, not during class.

Coursework :

The summer previous to starting AP Calculus AB, students were assigned homework from the textbook. This homework packet is designed to refresh students on topics covered in previous math courses. It is to be turned in the first day of class. Students will:

- Take notes on a daily basis, watch video lessons at home or out of class
- Work on practice problems on a daily basis, in class and at home
- Review notes and study materials outside of class
- Complete projects involving calculus
- Be prepared for frequent in class quizzes

Course Goals:

At the successful completion of this course, students will…

- Be able to work with functions represented in a variety of ways: graphical, numerical, analytical, or verbal.
- Be able to communicate mathematics both orally and in well-written sentences in order to explain solutions to problems.
- Understand the meaning of the derivative in terms of a rate of change and local linear approximation and be able to use derivatives to solve a variety of problems.
- Understand the meaning of the definite integral both as a limit of Riemann sums and as the net accumulation of change and be able to use integrals to solve a variety of problems.
- Understand the relationship between the derivative and the definite integral as expressed in the Fundamental Theorem of Calculus.
- Be able to use technology to help solve problems, experiment, interpret results and verify or support conclusions.
- Be able to model a written description of a physical situation with a function, a differential equation, or an integral.
- Develop an appreciation of calculus as a coherent body of knowledge and as a human accomplishment.

Technology:

The graphing calculator plays a vital role in the understanding of Calculus. This course incorporates a variety of calculator-based activities, where students will use graphing calculators to solve various types of problems. Therefore, students are **REQUIRED to use a graphing calculator** for this course; the instructor will be using a **TI-84 Plus**. Furthermore, **it is crucial that students be minimally competent in the four required calculator uses on the AP exam**:

- ✓ Plot the graph of a function within an arbitrary viewing window
- ✓ Find the zeros of functions
- ✓ Numerically calculate the derivative of a function
- ✓ Numerically calculate the value of a definite integral

Collaboration:
Students will be given opportunities to work in pairs or groups. Students will solve problems together and discuss their solutions with classmates.

Assessment:
At the end of the course, every AP student will be required to take the AP Calculus Exam. Throughout the year, students will be given 1-2 tests for every unit, a midterm exam and practice AP exams. Quizzes will be frequently administered prior to the unit tests and any other formative assessments deemed appropriate by the teacher. It is imperative that students attend every class, especially on test days. Projects may be assigned periodically and will count as a test grade.

Tips for Success:

- **TAKE GOOD NOTES** and review them as you work through your homework and prepare for assessments. Doing so will help you develop confidence, independence, organization, and other skills you will need to do well in AP Calculus, college and life.
- **DO YOUR WORK.** Calculus is not a spectator sport. Approach your assignments actively, and re-do problems that you have trouble with. Work with your classmates (this doesn't mean copy their work).
- **USE THE RESOURCES PROVIDED.** Use the internet! Extra practice and different perspectives of math topics found on-line may assist your understanding of the subject.

Textbooks:
Finney, Ross L., Franklin D. Demana, Bert K. Waits, and Daniel Kennedy. *Calculus: Graphical, Numerical, Algebraic*. Glenview, IL: Prentice Hall, 2003. Print.

Larson, Ron and Bruce Edwards. *Calculus of a Single Variable.* Boston, MA: Brooks Cole, 2013. Print.

Course Outline:

Semester 1	
Quarter 1	**Quarter 2**
Unit 1: Prerequisite for Calculus	**Unit 4:** Applications of Derivatives
Unit 2: Limits and Continuity	**Unit 5:** The Definite Integral (5.1-5.2)
Unit 3: Derivatives	**Midterm Review and Exam**
Semester 2	
Quarter 3	**Quarter 4**
Unit 5: The Definite Integral (5.3-5.5)	**Unit 8:** Review for AP Exam
Unit 6: Differential Equations and Mathematical Modeling	**Final Exam**
Unit 7: Applications of Definite Integrals	**AP Calculus Exam**