PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS

CALCULUS II
MATH 1920

Class Hours: 4.0 **Credit Hours: 4.0**

Laboratory Hours: 0 **Revised: Spring 2011**

Catalog Course Description:

Integral calculus with applications. Topics include methods of integration, sequences, series, and an introduction to polar coordinates and differential equations. Applications include real world problems in physics, engineering, economics, and biology.

Entry Level Standards:

A thorough knowledge of differential calculus including trigonometric functions.

Prerequisite:

MATH 1910

Textbook(s) and Other Reference Materials Basic to the Course:

Textbook:

Calculus: Early Transcendentals by Jon Rogawski,, First Edition, W.H. Freeman and Company, 2008.
References:

Stewart, James. *Calculus Concepts and Contexts*, Third Edition. Brooks/Cole, 2001.
Swokowski, Earl. *Calculus with Analytic Geometry*, Sixth Edition, PWS-Kent Publishing Co., 1994. Software: MathCAD, MathSoft, Inc., Cambridge, Mass.
Technology Requirement:
Calculator: A graphing calculator is required. The TI-84 or TI-84 Plus is recommended. Symbolic calculators are not permitted.

CalcPortal software: instructor discretion

I. Week/Unit/Topic Basis:

Week	Topic
1	Antiderivatives, approximating areas, definite integrals
2	The fundamental theorem of calculus, net change, substitution method
3	Substitution method
4	Transcendental functions
5	Area between curves, volume, density, average value

6	Volume, numerical integration
7	Integration by parts, trigonometric integrals, trigonometric substitution, partial fractions
8	Improper integrals
9	Arc length, surface area, center of mass
10	Modeling with differential equations
11	Sequences, infinite series, convergence
12	Ratio and root tests, power series, Taylor series
13	Parametric equations, arc length and speed
14	Polar coordinates, area and arc length
15	Final exam

II. Course Goals*:

The course will:

A. Build the skills to compute integrals of algebraic and transcendental functions. VI.1-6

B. Guide students toward the effective use of several techniques of integration. VI.1-6

C. Build the skills to compute to evaluate integrals with indeterminate forms. VI.1-6

D. Build the skills to understand the behavior of infinite series. VI.1-6

E Enhance the student's knowledge of solving problems using polar coordinates. VI.1-6

F. The course will enhance effective use of calculus techniques to real world applications. VI.1-6

*Roman numerals after course goals reference the General Education goals.

III. Expected Student Learning Outcomes*:

Student will be able to:

1. Integrate exponential, trigonometric, inverse trigonometric, natural and general logarithmic functions. A
2. Integrate by parts and by substitution. B
3. Integrate trigonometric integrals using identities. A, B
4. Integrate rational functions by partial fraction decomposition. B
5. Use a table of integrals to evaluate an integral. B
6. Integrate indeterminate forms and improper integral. B, C
7. Test for convergence and divergence of infinite series. D

8. Give power series representation of a function. D

9. Model with differential equations. F

10. Graph parametric and polar equations. E

* Capital letters after Expected Student Learning Outcomes reference the course goals listed above.

VI. Evaluation:

A. Testing Procedures: 100% of grade or instructor discretion if lab work and/or section projects are utilized.

Students are evaluated primarily on the basis of chapter tests and quizzes. A minimum of four major tests is recommended. See individual instructor's syllabus.

B. Laboratory Expectations: : 0% of grade or instructor discretion

None

C. Field Work:

None

D. Other Evaluation Methods:

See individual instructor's syllabus.

E. Grading Scale:

93 - 100	A
88 - 92	B+
83 - 87	B
78 - 82	C+
70 - 77	C
60 - 69	D
Below 60	F

V. Policies:

A. Attendance Policy:

Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of the Learning Division, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of the Learning Division.

B. Academic Misconduct:

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:
• Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or

completing academic assignments.
• Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
• Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one's own work.
• Taking an exam for another student.
• Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
• Any of the above occurring within the Web or distance learning environment.

C. Accommodations for Disabilities:

Students who need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Services for Students with Disabilities (SSWD) in order to receive accommodations in this course. Services for Students with Disabilities may be contacted by going to Goins 127, 132, 134, 135, 131 or by phone: 539-7153 or TTY 694-6429. More information is available at www.pstcc.edu/departments/swd/.

D. Cell phones:

Cell phones are to be either turned off or put on vibration mode while in class. Instructor discretion as to penalty.