PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS

CALCULUS II
MATH 1920

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

Laboratory Hours: 0.0 **Date Revised: Fall 2017**

Catalog Course Description

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

Prerequisite

MATH 1910.

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

Textbook:
Calculus: Early Transcendentals by Jon Rogawski and Colin Adams, Third Edition, W.H. Freeman and Company, 2015.

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: LaunchPad, MathCAD, MathSoft, Inc., Cambridge, Mass.

Personal Equipment:
A graphics calculator is required; the TI-83, Ti-83 Plus, or Ti-84 Plus is recommended. A symbolic manipulator such as the TI-89 or TI-92 is not permitted. LaunchPad software: instructor discretion

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
8	Trigonometric substitution, partial fractions
9	Improper integrals
10	Arc length, surface area, center of mass
11	Modeling with differential equations
12	Sequences, infinite series, convergence
13	Ratio and root tests, power series
14	Taylor series
15	Final Exam

Course Goals

NOTE: Roman numerals after course goals reference the General Education Goals of the Mathematics program.

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. Enhance effective use of calculus techniques to real world applications. VI.1-6

Expected Learning Outcomes

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

The student will

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

Evaluation

Testing Procedures

Students are evaluated primarily on the basis of tests, quizzes and homework. A minimum of 4 major tests is recommended.

Laboratory Expectations

As assigned by instructor

Field Work

As assigned by instructor

Other Evaluation Methods

As assigned by instructor

Grading Scale

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

Policies

Attendance Policy

The Pellissippi State Mathematics Department faculty expect registered students to attend all scheduled instructional activities. As a minimum, students must be present for at least 75 percent of their scheduled classes in order to receive credit for the course. Individual instructors' policies may be more specific and posted in the class syllabus.

Academic Dishonesty

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.

Please see the Pellissippi State Policies and Procedures Manual, Policy 04:02:00 Academic/Classroom Conduct and Disciplinary Sanctions for the complete policy.

Accommodations for Disabilities

Students that 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 Disability Services (DS) in order to receive accommodations in this course. Disability Services (http://www.pstcc.edu/sswd/) may be contacted via Disability Services email or by visiting Alexander 130.

Other Policies

Make Up Work: Instructor discretion about make-up tests and/or assignments.
Cell Phones: Cell phones are to be either turned off or put on vibration mode while in class. Instructor discretion as to penalty.