MATH M725B: BRIDGE TO MATH M25B

Originator
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College
Moorpark College

Discipline (CB01A)
MATH - Mathematics

Course Number (CB01B)
M725B

Course Title (CB02)
Bridge to MATH M25B

Banner/Short Title
Bridge to MATH M25B

Credit Type
Credit

Start Term
Fall 2023

Catalog Course Description
Reviews the prerequisite materials necessary to be successful in MATH M25B. Includes differentiation of algebraic and transcendental functions, integration, u-substitution, and the chain rule for differentiation.

Taxonomy of Programs (TOP) Code (CB03)
1701.00 - Mathematics, General

Course Credit Status (CB04)
T (Support Course - Credit - Degree Applicable)

Course Transfer Status (CB05) (select one only)
C (Not transferable)

Course Basic Skills Status (CB08)
N - The Course is Not a Basic Skills Course

SAM Priority Code (CB09)
E - Non-Occupational

Course Cooperative Work Experience Education Status (CB10)
N - Is Not Part of a Cooperative Work Experience Education Program

Course Classification Status (CB11)
Y - Credit Course

Educational Assistance Class Instruction (Approved Special Class) (CB13)
N - The Course is Not an Approved Special Class

Course Prior to Transfer Level (CB21)
Y - Not Applicable

Course Noncredit Category (CB22)
Y - Credit Course

Funding Agency Category (CB23)
Y - Not Applicable (Funding Not Used)

Course Program Status (CB24)
2 - Not Program Applicable

General Education Status (CB25)
Y - Not Applicable

Support Course Status (CB26)
S - Course is a support course

Field trips
Will not be required

Grading method
(P) Pass/No Pass Grading

Does this course require an instructional materials fee?
No

Repeatable for Credit
No

Is this course part of a family?
No

Units and Hours

Carnegie Unit Override
No

In-Class

Lecture
Minimum Contact/In-Class Lecture Hours
8.75
Maximum Contact/In-Class Lecture Hours
8.75

Activity

Laboratory

Total in-Class

Total in-Class
Total Minimum Contact/In-Class Hours
8.75
Total Maximum Contact/In-Class Hours
8.75

Outside-of-Class

Internship/Cooperative Work Experience

Paid

Unpaid

Total Outside-of-Class

Total Outside-of-Class
Minimum Outside-of-Class Hours
17.5
Maximum Outside-of-Class Hours
17.5

Total Student Learning

Total Student Learning
Total Minimum Student Learning Hours
26.25
Total Maximum Student Learning Hours
26.25

Minimum Units (CB07)
.5
Maximum Units (CB06)
.5

Student Learning Outcomes (CSLOs)	
	Upon satisfactory completion of the course, students will be able to:
1	gain an understanding of mathematical topics in preparation for a second semester Calculus course by studying various first semester Calculus topics through participating in the review session with the provided materials.

Course Objectives	
	Upon satisfactory completion of the course, students will be able to:
1	differentiate algebraic functions using the chain rule.
2	differentiate trigonometric functions using the chain rule.
3	differentiate exponential functions using the chain rule.
4	differentiate logarithmic functions using the chain rule.
5	differentiate hyperbolic trigonometric functions using the chain rule.
6	differentiate inverse trigonometric functions using the chain rule.
7	integrate algebraic functions using u-substitution.
8	integrate trigonometric functions using u-substitution.
9	integrate exponential functions using u-substitution.
10	integrate logarithmic functions using u-substitution.
11	integrate hyperbolic trigonometric functions using u-substitution.

Course Content

Lecture/Course Content
50% A. Differentiation Using the Chain Rule
   1. Differentiate algebraic functions
   2. Differentiate trigonometric functions
   3. Differentiate exponential functions

 4. Differentiate logarithmic functions
 5. Differentiate hyperbolic trigonometric functions
 6. Differentiate inverse trigonometric functions

50% B. Integration Using U-Substitution
 1.Integrate algebraic functions
 2. Integrate trigonometric functions
 3. Integrate exponential functions
 4. Integrate logarithmic functions
 5. Integrate hyperbolic trigonometric functions

Laboratory or Activity Content

N/A

Methods of Evaluation

Which of these methods will students use to demonstrate proficiency in the subject matter of this course? (Check all that apply):

Written expression
Problem solving exercises
Skills demonstrations

Methods of Evaluation may include, but are not limited to, the following typical classroom assessment techniques/required assignments (check as many as are deemed appropriate):

Other (specify)
Classroom Discussion

Other

Since this is a non-graded module, students receive credit for attendance to the full hours of the course.

Instructional Methodology

Specify the methods of instruction that may be employed in this course

Class activities
Class discussions
Demonstrations
Distance Education
Instructor-guided interpretation and analysis
Instructor-guided use of technology
Lecture
Problem-solving examples
Other (specify)

Specify other method of instruction

All instructors will use best practices to provide an inclusive learning environment that respects all forms of racial, ethnic, age, and gender diversity, and provides for the individual needs of students of all learning styles.

Describe specific examples of the methods the instructor will use:

use of whiteboard or document camera to demonstrate basic methods of integration, such as the chain rule and substitution.

guided classroom practice, facilitated by instructor, with the assistance of Course Embedded Tutor, such as practice sets on basic differentiation of functions.

discussion of topics, including student question and response, such as identifying local maximum and minimum points on a function and identifying intervals where function is increasing and decreasing.

Representative Course Assignments

Writing Assignments

 1. Assignments requiring complete solutions using both written English and symbolic mathematical language.
 2. Problems selected from the bridge packet where answers require a written explanation of the solution, such as differentiating a trigonometric function.

Critical Thinking Assignments
1. Describe and apply the algorithmic steps for obtaining the solution to a mathematical problem, such as differentiating an algebraic function.
2. Compare and contrast methods of solution to mathematical problems.
3. Apply analytic techniques for solving mathematical and application problems.

Reading Assignments
1. Reading prepared materials distributed to students, such as workbook and guided notes.
2. Reading word problems or application problems.

Skills Demonstrations
1. Demonstration of solutions to problems, such as use of first and second derivative to identify intervals where a function is increasing, decreasing, concave up and concave down, and points of inflection.
2. Demonstration of integration of various functions such as algebraic, trigonometric, exponential, logarithmic, and hyperbolic functions using u-substitution.

Problem-Solving and Other Assignments (if applicable)
1. Problem-solving exercises using the chain-rule.
2. Problem-solving exercises using the u-substitution.

Outside Assignments

Representative Outside Assignments
1. Assigned reading from bridge packet.
2. Problems selected from the bridge packet where answers require a written explanation of the solution, such as differentiating a logarithmic function.

Textbooks and Lab Manuals

Resource Type
Textbook

Classic Textbook
No

Description
Hass, Joel R., et al. *Thomas' Calculus: Early Transcendentals.* 15th ed., Pearson, 2023.

Resource Type
Textbook

Classic Textbook
No

Description
Larson, Ron, Bruce H. Edwards. *Calculus: Early Transcendental Functions.* 8th ed., Cengage, 2023.

Resource Type
Textbook

Classic Textbook
No

Description
Stewart, James. *Calculus: Early Transcendentals.* 9th ed., Cengage, 2021.

Resource Type
Textbook

Description

Strang, Gilbert, Edwin Herman. *Calculus Volume 1.* E-book, Open Stax, 2020, https://openstax.org/details/books/calculus-volume-1. Accessed 20 Oct 2022.

Library Resources

Assignments requiring library resources

Research using the Library's print and online resources.

Sufficient Library Resources exist

Yes

Example of Assignments Requiring Library Resources

Using the Library's print and online resources to provide support material for beginning calculus content and real world applications. May want to make use of the math textbooks on Reserve in Circulation.

Distance Education Addendum

Definitions

Distance Education Modalities

Hybrid (1%–50% online)
Hybrid (51%–99% online)
100% online

Faculty Certifications

Faculty assigned to teach Hybrid or Fully Online sections of this course will receive training in how to satisfy the Federal and state regulations governing regular effective/substantive contact for distance education. The training will include common elements in the district-supported learning management system (LMS), online teaching methods, regular effective/substantive contact, and best practices.

Yes

Faculty assigned to teach Hybrid or Fully Online sections of this course will meet with the EAC Alternate Media Specialist to ensure that the course content meets the required Federal and state accessibility standards for access by students with disabilities. Common areas for discussion include accessibility of PDF files, images, captioning of videos, Power Point presentations, math and scientific notation, and ensuring the use of style mark-up in Word documents.

Yes

Regular Effective/Substantive Contact

Hybrid (1%–50% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Use of student discussion boards to discuss concepts from the material, solutions to homework problems, general discussion of techniques in solving problems, study skills, or arranging study groups.
E-mail	Responding to student queries about material, grade information, course policies and procedures, scheduling and due dates, submitting homework assignments, or making general announcements to the class.
Face to Face (by student request; cannot be required)	Students requesting to speak to instructor in person for personal help on material, grade information, or discussion of policies and procedures.
Other DE (e.g., recorded lectures)	Posting of recorded lectures either by the instructor, recorded lessons available through campus resources, or use of public online resources available on the internet.
Synchronous Dialog (e.g., online chat)	Active live discussion with the instructor on material concepts, techniques for problem solving, feedback on solutions to problems, general chat on study skills, or answers to homework problems, quizzes or tests.

Hybrid (51%–99% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Use of student discussion boards to discuss concepts from the material, solutions to homework problems, general discussion of techniques in solving problems, study skills, or arranging study groups.
E-mail	Responding to student queries about material, grade information, course policies and procedures, scheduling and due dates, submitting homework assignments, or making general announcements to the class.
Face to Face (by student request; cannot be required)	Students requesting to speak to instructor in person for personal help on material, grade information, or discussion of policies and procedures.
Other DE (e.g., recorded lectures)	Posting of recorded lectures either by the instructor, recorded lessons available through campus resources, or use of public online resources available on the internet.
Synchronous Dialog (e.g., online chat)	Active live discussion with the instructor on material concepts, techniques for problem solving, feedback on solutions to problems, general chat on study skills, or answers to homework problems, quizzes or tests.

100% online Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Use of student discussion boards to discuss concepts from the material, solutions to homework problems, general discussion of techniques in solving problems, study skills, or arranging study groups.
E-mail	Responding to student queries about material, grade information, course policies and procedures, scheduling and due dates, submitting homework assignments, or making general announcements to the class.
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Examinations

Hybrid (1%–50% online) Modality
On campus
Online

Hybrid (51%–99% online) Modality
On campus
Online

Primary Minimum Qualification
MATHEMATICS

Review and Approval Dates

Department Chair
10/12/2022

Dean
10/17/2022

Technical Review
10/20/2022

Curriculum Committee
11/01/2022

DTRW-I
MM/DD/YYYY

Curriculum Committee
MM/DD/YYYY

Board
MM/DD/YYYY

CCCCO
MM/DD/YYYY

Control Number
CCC000597399

DOE/accreditation approval date
MM/DD/YYYY