MASTER SYLLABUS

WASHTENAW COMMUNITY COLLEGE

Course Discipline Code & No: MTH 182 **Title:** Business Calculus **Effective Term** Sp 2008

Division Code: MNS **Department Code:** MTH **Org #:**

Don't publish: ☐ College Catalog ☐ Time Schedule ☐ Web Page

Reason for Submission. Check all that apply.

- ☐ New course approval
- ☒ Three-year syllabus review/Assessment report
- ☒ Course change
- ☐ Reactivation of inactive course
- ☐ Inactivation (Submit this page only.)

Change information: Note all changes that are being made. Form applies only to changes noted.

- ☐ Consultation with all departments affected by this course is required.
- ☐ Course discipline code & number (was _____)*
  *Must submit inactivation form for previous course.
- ☒ Course title (was Mathematical Analysis II)
- ☒ Course description
- ☒ Course objectives (minor changes)
- ☐ Credit hours (credits were: _____)
- ☐ Total Contact Hours (total contact hours were: _____)
- ☐ Distribution of contact hours (contact hours were: lecture: _____ lab _____ clinical _____ other _____)
- ☐ Pre-requisite, co-requisite, or enrollment restrictions
- ☐ Change in Grading Method
- ☐ Outcomes/Assessment
- ☐ Objectives/Evaluation
- ☐ Other _____

Rationale for course or course change. Attach course assessment report for existing courses that are being changed.

Reactivation of inactive course, along with a name change, in order to run a spring 2008 section.

Approvals Department and divisional signatures indicate that all departments affected by the course have been consulted.

Department Review by Chairperson ☐ New resources needed ☐ All relevant departments consulted

Print: Lisa Manoukian (Faculty/Preparer) Signature: Lisa Manoukian Date: 1/8/08

Print: Kristin Chatas (Department Chair) Signature: Kristin Chatas Date: 1/8/08

Division Review by Dean

☐ Request for conditional approval

Recommendation ☒ Yes ☐ No — Dean's/Administrator's Signature — Date: JAN - 8 2008

Curriculum Committee Review

Recommendation _____

☐ Tabled ☒ Yes ☐ No — Curriculum Committee Chair's Signature — Date: 1/24/08

Vice President for Instruction Approval

Vice President's Signature — Date: 1/24/08

Approval ☒ Yes ☐ No ☐ Conditional

Do not write in shaded area.

Log File 1/11/08 sj Ecopy ☐ Banner 2/1 C&A Database 2/1 C&A Log File 2/1 sn Basic skills ☐ Contact fee ☐

for 2008-09

Please return completed form to the Office of Curriculum & Assessment and email an electronic copy to sjohn@wccnet.edu for posting on the website.

***Complete ALL sections which apply to the course, even if changes are not being made.**

Course:	**Course title:**
MTH 182	Business Calculus

Credit hours: 4

If variable credit, give range:

_____ to _____ credits

Contact hours per semester:

	Student	Instructor
Lecture:	60	60
Lab:		
Clinical:		
Practicum:		
Other:		
Totals:	60	60

Are lectures, labs, or clinicals offered as separate sections?

☐ Yes - lectures, labs, or clinicals are offered in separate sections

☒ No - lectures, labs, or clinicals are offered in the same section

Grading options:

☐ P/NP (limited to clinical & practica)

☐ S/U (for courses numbered below 100)

☒ Letter grades

Prerequisites. Select one:

☒ College-level Reading & Writing

☐ Reduced Reading/Writing Scores
(Add information at Level I prerequisite)

☐ No Basic Skills Prerequisite
(College-level Reading and Writing is not required.)

In addition to Basic Skills in Reading/Writing:

Level I (enforced in Banner)

	Course	Grade	Test	Min. Score	Concurrent Enrollment (Can be taken together)	Corequisites (Must be enrolled in this class also during the same semester)
	MTH 181	C			☐	
☐ and ☒ or	MTH 176	C			☐	
☐ and ☐ or					☐	
☐ and ☐ or					☐	

Level II (enforced by instructor on first day of class)

	Course	Grade	Test	Min. Score
☐ and ☐ or				
☐ and ☐ or				

Enrollment restrictions (In addition to prerequisites, if applicable.)

☐ and ☐ or Consent required

☐ and ☐ or Admission to program required
Program: _____

☐ and ☐ or Other (please specify):
_____

Please send syllabus for transfer evaluation to:

Conditionally approved courses are not sent for evaluation.
Insert course number and title you wish the course to transfer as.

☒ E.M.U. as Math 119

☒ U of M as _____

☐ _____ as _____

☐ _____ as _____

☐ _____ as _____

☐ _____ as _____

Course	Course title
MTH 182	Business Calculus

Course description State the purpose and content of the course. Please limit to 500 characters.	This course teaches the elementarty methods of calculus applied to social science, and business. Topics covered include functions, differentiation of algebraic functions, optimization, constrained optimization, exponential functions and logarithmic functions and their derivatives, integration, the definite integral as accumulation, and an introduction to multivariate calculus. This course emphasizes applications and problem setup. A TI-83, or TI-84 graphing calculator is required.

Course outcomes List skills and knowledge students will have after taking the course. **Assessment method** Indicate how student achievement in each outcome will be assessed to determine student achievement for purposes of course improvement.	**Outcomes** (applicable in all sections)	**Assessment** Methods for determining course effectiveness
	1. Use derivatives to solve a variety of real world applications.	Common questions in an evaluation setting.
	2. Use integrals to solve a variety of real world applications.	Common questions in an evaluation setting.
	3. Set up and solve real world problems involving multiple variables, and solve using methods of calculus.	Common questions in an evaluation setting.

Course Objectives Indicate the objectives that support the course outcomes given above. **Course Evaluations** Indicate how instructors will determine the degree to which each objective is met for each student.	**Objectives** (applicable in all sections)	**Evaluation** Methods for determining level of student performance of objectives
	OUTCOME 1:	Demonstrate skills in an evaluation setting
	1.The student will learn methods of using limits, and apply them to finding derivatives.	
	2. The student will compute the precise derivative of an algebraic, exponential or logarithmic function.	Demonstrate skills in an evaluation setting
	3. The students will use derivatives to sketch curves.	Demonstrate skills in an evaluation setting
	4. The student will apply methods of differentiation to solve a variety of real world problems, including problems of optimization	Demonstrate skills in an evaluation setting
	5. The student will use exponential and logarithmic functions and their graphs to solve problems of production, growth, decay, and compound interest.	Demonstrate skills in an evaluation setting
	OUTCOME 2:	Demonstrate skills in an evaluation setting
	6. The student will find antiderivatives, and definite integrals.	
	7. The student will apply methods of integration to solve problems, including accumulation.	Demonstrate skills in an evaluation setting
	OUTCOME 3:	Demonstrate skills in an evaluation setting
	8. The student will compute precise partial derivatives of algebraic, exponential, and logarithmic functions.	

	9. The student will apply methods of partial differentiation to solve problems of constrained optimization.	Demonstrate skills in an evaluation setting

List all new resources needed for course, including library materials.

Student Materials:

List examples of types		Estimated costs
Texts Supplemental reading Supplies Uniforms Equipment Tools Software	Text: Brief Calculus TI-83 or TI-94 calculator	$ 100 - $150 $80 - $120

Equipment/Facilities: Check all that apply. (All classrooms have overhead projectors and permanent screens.)

Check level only if the specified equipment is needed for all sections of a course.

- ☐ Level I classroom
  Permanent screen & overhead projector
- ☐ Level II classroom
  Level I equipment plus TV/VCR
- ☒ Level III classroom
  Level II equipment plus data projector, computer, faculty workstation

- ☐ Off-Campus Sites
- ☐ Testing Center
- ☐ Computer workstations/lab
- ☐ ITV
- ☐ TV/VCR
- ☐ Data projector/computer
- ☐ Other _____

Assessment plan:

Learning outcomes to be assessed (list from Page 3)	Assessment tool	When assessment will take place (semester & year)	Course section(s)/other population	Number students to be assessed
1. Use derivatives to solve a variety of real world applications.	Common questions in an evaluation setting.	Fall 2008	All	All
2. Use integrals to solve a variety of real world applications.	Common questions in an evaluation setting.	Fall 2008	All	All
3. Set up and solve real world problems involving multiple variables, and solve using methods of calculus.	Common questions in an evaluation setting.	Fall 2008	All	All

Scoring and analysis of assessment:

1. Indicate how the above assessment(s) will be scored and evaluated (e.g. departmentally developed rubric, external evaluation, other). Attach the rubric/scoring guide.

   Common questions to be used in an evaluation setting (individual work on in-class assignment, quiz, or test.) Preliminary questions with planned scoring rubric attached.

2. Indicate the standard of success to be used for this assessment.

   70% of students score at least 3 on each common question.

3. Indicate who will score and analyze the data (data must be blind-scored).

   Lead full-time instructor to score and analyze data..

4. Explain the process for using assessment data to improve the course.

   Results to be shared at department meeting.