WASHTENAW COMMUNITY COLLEGE

MASTER SYLLABUS

Course Discipline Code & No: MTH 151 **Title:** Technical Algebra **Effective Term** W2007

Division Code: MNBS **Department Code:** MTH **Org #:** 12200

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 _____)
- ☒ 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.

The syllabus is being updated for the three-year syllabus review and reflects the change from the Core Curriculum system to the current curriculum and degree structure. The overall content and amount of material remains unchanged. The current update lists the objectives in a manner consistent with a traditional description of algebra and applications for technical occupations.

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: James C. Egan (Faculty/Preparer) Signature: James C Egan Date: 11/22/2006

Print: Kristin Chatas (Department Chair) Signature: Kristin Chatas Date: 11/27/2006

Division Review by Dean

☐ Request for conditional approval

Recommendation ☒ Yes ☐ No M. Howat (Dean's/Administrator's Signature) 11/28/06 (Date)

Curriculum Committee Review

Recommendation _____

☐ Tabled ☒ Yes ☐ No _____ (Curriculum Committee Chair's Signature) 1/18/07 (Date)

Vice President for Instruction Approval

Roger M. Farley. (Vice President's Signature) 1/19/07 (Date)

Approval ☒ Yes ☐ No ☐ Conditional

Do not write in shaded area.
Log File 11/29/06 Ecopy ☐ Banner 1/26 C&A Database 1/26 C&A Log File 1/26 Basic skills ☐ Contact fee ☐ 200701

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

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

Course:	Course title:

Credit hours: 4

If variable credit, give range:

_____ to _____ credits

Contact hours per semester:

	Student	Instructor
Lecture:	75	75
Lab:		
Clinical:		
Practicum:		
Other:		
Totals:		

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 067	C			☐	
☒ and ☐ or			Basic Skills Exam	75	☐	
☐ and ☒ or			COMPASS Pre-Alg	37	☐	
☐ 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 _____

☐ U of M as _____

☐ _____ as _____

☐ _____ as _____

☐ _____ as _____

☐ _____ as _____

MASTER SYLLABUS

Course	Course title
MTH 151	Technical Algebra

Course description State the purpose and content of the course. Please limit to 500 characters.	This course introduces algebraic, geometric, and trigonometric concepts in an applied setting and is primarily for trade and technical students. Topics, which emphasize applications, include: a review of the fundamentals of fractions, decimals and percents; terminology and applications of geometry; measurments and conversions; algebraic expressions, equations, and formulas; ratio and proportion; summary graphs and charts; and an introduction to right triangle trigonometry.

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. Apply principles of geometry to calculate length, area, and volume.	Common Questions in an evaluation setting.
	2. Make measurements with common measuring instruments and make conversions of units.	Common Questions in an evaluation setting.
	3. Use principles of algebra to solve basic algebraic equations, including proportions, and work with formulas.	Common Questions in an evaluation setting.
	4. Interpret and apply graphs and charts.	Common Questions in an evaluation setting.
	5. Apply basic principles of trigonometry to solve problems involving right triangles.	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 evaluations setting.
	1- Use the Pythagorean Theorem to find the length of the unknown side of a right triangle.	
	2- Identify common geometric figures.	
	3- Find the circumference or perimeter of basic geometric shapes.	
	4- Find the area of a geometric region using principles of area of rectangles, triangles, trapezoids, and/or circles or other common shapes.	
	5- Find the volume of a geometric region using principles of volume of prisms, pyramids, and/or spheres or other common shapes.	
	(Outcome 2)	Demonstrate skills in an evaluations setting.
	1- Use measuring instruments such as rulers and protractors to make measurements of lengths and angles.	
	2- Apply principles of scale to make measurement readings using devices such as meters and dials.	
	3- Make basic conversions of units, including	

	conversions within the metric system and between English and metric units.	
	(Outcome 3) 1- Solve basic equations using one step and basic equations requiring two or more steps. 2- Use principles of algebra to rewrite formulas in terms of an identified variable. 3- Express ratios in specified forms. 4- Solve basic problems of direct and indirect proportions. 5- Solve basic application problems involving formulas.	Demonstrate skills in an evaluations setting.
	(Outcome 4) 1- Identify variables and the appropriate forms of graphs and charts to display corresponding data. 2- Determine sector sizes for pie graphs. 3- Read and interpret pie graphs, including adapting readings as required (for example, converting percentages to dollar amounts). 4- Determine appropriate scales for constructing bar graphs. 5- Read and apply information from bar graphs. 6- Read and apply information from line graphs, including making approximate interpolations and extrapolations.	Demonstrate skills in an evaluations setting.
	(Outcome 5) 1- Calculate basic sine, cosine, and tangent ratios for right triangles. 2- Using a scientific calculator, calculate basic sine, cosine, and tangent values for degree measurements in a right triangle. 3- Using a scientific calculator, calculate degree measures of angles in a right triangle from given sine, cosine, and tangent values. 4- Apply trigonometry to solve basic and applied problems involving right triangles.	Demonstrate skills in an evaluations setting.

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

Student Materials:

List examples of types		Estimated costs
Texts Supplemental reading	Required: Text (Mathematics for Technical Occupations, Bila et al)	$ 60

Supplies Uniforms Equipment Tools Software	Required: Scientific calculator, 2-line display strongly recommended Optional: Measuring and drawing tools such as ruler, compass, protractor.	$20 $5

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	Course section(s)/other population	Number students to be assessed
all	Common questions	W07	Two sections	All course completers in the two sections
1. Apply principles of geometry to calculate length, area, and volume.	Example: See attachment			
2. Make measurements with common measuring instruments and make conversions of units.	Example: See attachment			
3. Use principles of algebra to solve basic algebraic equations, including proportions, and work with formulas.	Example: See attachment			
4. Interpret and apply graphs and charts	Example: See attachment			
5. Apply basic principles of trigonometry to solve problems involving right triangles.	Example: See attachment			

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.

   Members of the Mathematics Department will score the questions. A four point rubric will be applied to each question. (Rubric is attached.)

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

   70% of students will achieve an average of 3 or better on the assessment questions

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

   Members of the Mathematics Department will blind score and analyze the data.

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

   The data analysis will be shared with the Mathematics Department to provide a foundation for discussion of ways to improve the course.