**KISHWAUKEE COLLEGE SYLLABUS**

**AUTOMATED ENGINEERING TECH (MT)**

**SPRING 2014**

Course Title: Machine Shop Mathematics I

Prerequisite: None

Number of Credits: Three (3) hours Lecture/Discussion a Week

Course Number: MT-151

Course Ref. Number: 5002 (22283)

Classroom Number: A - 1411

Day & Time: Friday 10:00 am to 12:45pm

Start & End Date: JAN 17, 2014-MAY 16, 2014

Mid Term Date: March 8th , 2014 , 10:00 am , A1411

Final Exam Date: May 10, 2014 10:00 am, room A1411

Instructors Name: Robert Lawrence

Office Location: A - 1423

Office Hours: M,T,W,TH 11:45 to 12:45

Work Phone: 815-825-2086 ext 3240

E-mail: Robert.lawrence@kishwaukeecollege.edu

**Course Description:** Designed to meet the needs of the vocational-technical student majoring in manufacturing technology. Topics include powers and roots, ratios and proportions, practical measurements, formulas, geometric constructions, and graphs as each applies to the machine shop and the tool and die maker. Emphasizes practical problem solving. Three (3) hours lecture/discussion a week.

This course is also included in the Certificate #252 (Certified Production Technician)

This course is also part of the MSSC (Manufacturing Skills Standard Certification) requirements for participation in the certification process.

**Expected Learner Outcomes:** At the end of the semester, the student will be able to complete with at least 70% accuracy of the topics covered. The topics include:

1. Common Fractions, Decimal Fractions, and Percentages.
2. Linear Measurement: Customary (English) and Metric.
3. Fundamentals of Algebra.
4. Fundamentals of Plane Geometry.
5. Geometric Figures: Areas and Volumes.

**Required Texts:** Mathematics for Machine Technology, Smith & Peterson - 6E, Delmar Publishers.

**Required Student Materials:** Texas Instruments, TI-30X IIS calculator, Protractor, pencils, and graph paper

**Additional Student References:** Machinist’s Ready Reference, C. Weingartner.

**Breakdown of Course Requirements:**

1. Homework: 480 12@40 pts. Each
2. Quizzes: 150 2@75 pts. Each
3. Mid Term: 100
4. Final: 100
5. Participation \_25

855 Total Points

**Final Grade Determination:** Grade reports will not be mailed out. Please check KishSOS, My Student Info, under Academic Profile, Grades, for grade reports.

855 - 770 = A

769 - 684 = B

683 - 599 = C

598 - 513 = D

512 - below = F

**Attendance Policy:** Due to the structure of this class, students will be expected to be on time for every class. Five (5) points for each absence in excess of two (2) will be deducted from the final grade total unless arrangements are made between the instructor and the student prior to the next class meeting.

**Make-up Policy for Tests and Other Course Requirements:**

1. Homework should be turned in on time. Work turned in on time will receive full credit.
2. Illness or absence due to family trips, medical leave, etc. will be dealt with separately. Makeup assignments/tests not completed due to illness will be accepted for full credit when turned in within a reasonable time frame (the following class meeting), which will be determined on an individual basis.

CLASS WITHDRAWAL

A “W” cannot be given as a final grade. The student is responsible for officially withdrawing from the class according to procedures described in the college catalog. Any student that does not officially withdraw from the class will receive a letter grade. The last date for withdrawal for this course can be found at “My Class Schedule” on KishSOS. Kishwaukee College reserves the right to administratively withdraw at midterm those students who are not actively pursuing course objectives or who are in violation of standards of behavior as outlined in the Student Code of Conduct and Discipline. For a copy of the student conduct policy, contact the Vice President of Student Services Office or refer to the Kishwaukee College catalog.

INCOMPLETE GRADE

All course requirements must be completed by the end date for the course. In the event that extremely difficult circumstances merit granting a student more time to finish course requirements, an “Incomplete” (I) grade may be given.  Taking an Incomplete is possible only at the instructor's discretion.  To receive an Incomplete, a contract between the student and the instructor must be completed and approved regarding the completion of all remaining work within a strictly defined period of time.  If the conditions of the contract are not met, an “I” grade may revert to an “F”.

CLASS CANCELLATIONS

Class cancellations due to inclement weather will be posted on the College Website: www.kishwaukeecollege.edu. or announced by the local radio stations. Students may also call the College at (815) 825-2086. Class cancellations due to instructor absence will be posted on the classroom door and posted at [www.kishwaukeecollege.edu/class\_cancellations](http://www.kishwaukeecollege.edu/class_cancellations). Room changes will be announced in advance whenever possible and posted on the classroom door.

ACADEMIC DISHONESTY

In order to evaluate student work, faculty must be able to trust that the work is original with a student and not the work of someone else. Cheating, falsifying information, forgery, plagiarism, and other dishonest actions will not be tolerated. Sanctions for academic dishonesty are at the discretion of the instructor and subject to appeal as provided in the Student Code of Conduct and Discipline. A complete explanation of the policy and procedures surrounding academic dishonesty are outlined in the Kishwaukee College Catalog.

COPYRIGHT

As a Kishwaukee College Student, you may have copyrighted materials or software made available to you by the college for course use. Please understand that copyright law may prohibit copying these materials. Violation of copyright laws can lead to prosecution for a criminal offense. You are required to abide by the specific copyright and licensing agreements that apply to each particular piece of software.

GRADUATION REQUIREMENTS FOR TRANSFER DEGREE STUDENTS

All students intending to graduate with an A.A., A.S., A.E.S., or A.F.A. are required to submit a complete Degree Portfolio. The Degree Portfolio is a means for the institution to measure its effectiveness in preparing students for successful completion of a degree at a transferring institution. Save your college-level work throughout your academic career in order to facilitate the portfolio compilation. Also, submit a completed application for graduation from the college the semester that you plan on graduating prior to submitting the complete Degree Portfolio. Guidelines and the specific requirements (along with the rubrics used for assessment) for the Degree Portfolio can be found at [www.kishwaukeecollege.edu/portfolio](http://www.kishwaukeecollege.edu/portfolio).

ASSISTIVE RESOURCES CENTER/DISABILITY SERVICES

Any student with a documented disability or special learning need and wanting to request accommodations, should contact the Coordinator in A1317 or at (815) 825-2086 ext 3960, (815) 825-9106 (TTY), or send an email to awilson@kishwaukeecollege.edu. The student’s disability must impact their ability to participate in the educational environment and be documented by an appropriate professional prior to accommodations being approved.

LEARNING SKILLS CENTER (A1300)

Students must present their Kishwaukee College student ID when using any Learning Skills Center services. For more information on the Learning Skills Center go to <http://www.kishwaukeecollege.edu/go/lsc>. Tutoring is available to all Kishwaukee students free of charge. The Writing Center (Learning Skills Center, A1306) answers your writing-related questions regardless of the class or assignment. Students are expected to bring all material related to the assignment, including textbooks, paper prompts, etc.

Make-up tests, online tests, and placement tests are available through Testing Services, also located in the Learning Skills Center

EMERGENCY PROCEDURES/SAFETY

Yellow and red Emergency Information flipcharts are located in each classroom. These are quick reference sheets with telephone numbers to reach emergency assistance and a brief description of the correct actions to take in the event of a tornado, fire or other emergency on campus.

RELIGIOUS OBSERVANCES

Students faced with schedule conflicts related to a religious observance should make prior arrangements with the instructor a minimum of seven (7) school days in advance of the examination or other activity involved.

STUDENT E-MAIL

Your Kishwaukee College e-mail account will be the only way to receive official notices from the College. If you choose to forward your e-mail to another account, please be advised that all communication from and within the college will use your Kishwaukee student e-mail. When communicating with instructors or employees of the college, you are required to use your Kishwaukee e-mail address.

COMMUNITY RESOURCES

There are numerous community resources that are available to assist students in addressing a variety of personal needs. A listing and description of community resources can be found at <http://www.kishwaukeecollege.edu/go/communityresources>

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**Tentative Course Outline:**

SESSION 1 Units 1, 2, 3, 4. Introduction to Common Fractions and Mixed Numbers. Addition of Common Fractions and Mixed Numbers. Subtraction of Common Fractions and Mixed Numbers. Multiplication of Common Fractions and Mixed Numbers.

SESSION 2 Units 5, 6, 7, 8. Division of Common Fractions and Mixed Numbers. Combined Operations of Common Fractions and Mixed Numbers. Computing with a Calculator: Fractions and Mixed Numbers. Introduction to Decimal Fractions.

SESSION 3 Units 9, 10, 11, 12. Rounding Decimal Fractions and Equivalent Decimal and Common Fractions. Addition and Subtraction of Decimal Fractions. Multiplication of Decimal Fractions. Multiplication of Decimal Fractions. Division of Decimal Fractions.

SESSION 4 Quiz.

SESSION 5 Units 13, 14, 15, 16. Powers. Roots. Table of Decimal Equivalents and Combined Operations of Decimal Fractions. Computing with a Calculator: Decimals.

SESSION 6 Units 18, 19, 20, 22. Ratio and Proportion. Direct and Inverse Proportions. Introduction to Percents. Basic Calculations of Percentages, Percents, and Rates. Percent Practical Applications.

SESSION 7: Units 24, 25, 26, 27. Customary (English) Units of Measure. Metric Units of Linear Measure. Degree of Precision, Greatest Possible Error, Absolute Error, and Relative Error. Tolerance, Clearance, and Interference.

SESSION 8 Mid Term.

SESSION 9 Units 28, 29, 30, 31. Customary and Metric Steel Rules. Customary Vernier Calipers and Height Gages. Customary Micrometers. Customary and Metric Gage Blocks.

SESSION 10 Units 33, 34, 35. Symbolism and Algebraic Expressions. Signed Numbers. Algebraic Operations of Addition, Subtraction, and Multiplication.

SESSION 9 Units 36, 37, 38. Algebraic Operations of Division, Powers, and Roots. Introduction to Equations. Solution of Equations by the Subtraction, Addition, and Division Principles of Equality.

SESSION 10: Quiz.

SESSION 11 Unit 39, 40. Solution of Equations by the Multiplication, Root, and Power Principles of Equality. Solution of Equations Consisting of Combined Operations and Rearrangement of Formulas.

SESSION 12 Units 41. Applications of Formulas to Cutting Speed, Revolutions per Minute, and Cutting time.

SESSION 13 Units 42. Applications of Formulas to Spur Gears.

SESSION 14 REVIEW

SESSION 16 REVIEW

SESSION 17 FINAL EXAM

**Course outline is subject to change.**

“This workforce solution was funded by a grant awarded by the U.S. Department of Labor’s Employment and Training Administration. The solution was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timelines, usefulness, adequacy, continued availability, or ownership. This solution is copyrighted by the institution that created it. Internal use, by an organization and/or personal use by an individual for  non-commercial purposes, is permissible. All other uses require the prior authorization of the copyright holder.”