KISHWAUKEE COLLEGE SYLLABUS

AUTOMATED ENGINEERING TECH (MT)

FALL 2014

Course Title: Manufacturing Processes I

Prerequisite: None

Number of Credits: One (1) hour lecture/discussion and two (2) hours lab a week

Course Number: MT-215

Course Ref. Number: 3003 (24527)

Classroom Number: A-1428

Day & Time: Friday, 1:30 p.m.-4:30 p.m.

Start & End Date: 09/05/2014 – 12/19/2014

Final Exam Date: Friday 12/19/2014, 1:30 p.m. – 4:30 p.m.

Instructors Name: Mr. Patrick J. Holtz

Office Hours: By Appointment Only

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**Course Description:** Introduction to manufacturing technology curriculum to help students determine aptitudes, and career opportunities. Covers the setup and operation of basic machine tools such as the engine lathe, milling machine, drill press, and surface grinder. Introduces precision measuring techniques. One (1) hour lecture/discussion and two (2) hours lab a week.

**Expected Learner Outcomes:** From a given part print:

* The student will interpret blue prints, including basic Geometric Dimensioning and Tolerance.
* The student will write a detailed process plan for completing a project. **(Ref. IOSS No. 1)**
* The student will set up and lay out bolt circles, layout work for subsequent machining operations. **(Ref. IOSS No. 2)**
* The student will learn to off-hand grind lathe tool bits for correct cutting geometry.
* The student will use the horizontal and vertical band saw to cut stock for projects.
* The student will use the vertical milling machine to mill to size and drill holes.
* The student will set-up and operate an engine lathe to turn, face, and thread. **(Ref. IOSS No. 5)**
* The student will set-up and operate a surface grinder to square parts and grind to dimensional accuracy and required surface finish. **(Ref. IOSS No. 7)**
* The student will identify and select correct cutting feeds and speeds for drills, reamers, milling cutters, horizontal and vertical saws, and engine lathe operations.
* The student will use drills, taps, reamers, and C-bores as required for projects.
* The student will inspect projects while in process and after completion using steel rules, micrometers, dial and Vernier calipers, height gages, threading inspection wires, and optical comparator. **(Ref. IOSS No. 25)**
* Skill standards met are: No. 1, No. 2, No. 4, No. 5, No. 6, No. 7, and No. 25.

**Required Student Materials:**

* MT-215 Workbook (Includes Assignment Sheets, Part Prints, Charts and Formulas)
* OSHA approved safety glasses (Bookstore, Kishwaukee College)
* Texas Instruments, TI-30X IIS Calculator
* 6 inch steal rule (Quick-Reading 10ths, Aircraft Quick-Reading 100ths, 32nds and 64ths)

**Required Texts:** Machine Tool Practices 9th, edition. Kibbe, Richard R., Prentice Hall, 2010

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

**Breakdown of Course Requirements:**

* Homework: 400 10@40 pts. Each
* Quizzes: 45 3@15 pts. Each
* Lab Exercises 80 4@20 pts. Each
* Lab Projects 30 3@10 pts. Each
* Mid-Term 100
* Final Exam 100

Total Points 755

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

755 – 680 = A

679 – 604 = B

603 – 528 = C

527 – 453 = D

452 – Below = F

**Lab Clean-up:** Each person is responsible for cleaning their work area; this includes removing chips from machines or work area, wiping up cutting oil on machines and sweeping floor around machine being used. Measuring instruments and tools must be kept clean; chip free and properly cared for. All tools and instruments must be returned to their proper locations after use.

**SAFETY:**

* Due to the nature of this course, it is understood that the student must be aware of his/her surroundings while in the shop at all times. No horseplay or unsafe behavior will be tolerated. Every effort will be made by the instructor to ensure that a safe environment is maintained. Every student is expected to do his/her part.
* Approved safety glasses must be worn at all times in the shop.
* Long sleeves should be rolled up and rings or jewelry removed while operating machinery. Loose clothing such as shirttails hanging out can catch in machinery and is discouraged.
* Shop coats or aprons may be worn.

**Attendance Policy:** Due to the structure of this class, students will be expected to be on time for every class. To earn course credit, **a student must attend at least 75 percent of all scheduled class meetings.** Any student who does not meet this minimal standard will automatically receive a grade of “F” in the course. Any University-related activity necessitating an absence from class shall not count as an absence when determining whether a student has attended the required 75 percent of class meetings.

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

* Homework should be turned in on time. Work turned in on time will receive full credit.
* Illness or absence due to family trips, medical leave, etc. will be dealt with separately. Make-up 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.

**Learning Skills Center (A-1300):** 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, A-1306) 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.

**Withdrawal Policy:** A “W” will not 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 day for withdrawal for this course can be found at “MY CLASS SCHEDULE” on KishSOS. The last day to withdraw from this course is Tuesday, December 2, 2014. 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 announced on local radio stations or posted on the College Web site [www.kishwaudeecollege.edu](http://www.kishwaudeecollege.edu/). 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.

**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.

**Emergency Procedures/Safety:** Yellow and red *Emergency Information Flip Charts* 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.

**Graduation Requirements for Transfer Students:** All students intending to graduate with an A.A., A.S., A.E.S., or A.F.A. are required to submit a 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 the 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).

**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 Student Code of Conduct and Discipline. A complete explanation of the policy and procedures surrounding academic dishonesty are outline 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.

**Assistive Resources Center/Disability Services:** Any student having a documented disability or special learning need and wanting to request accommodations, should contact the Coordinator in A-1317 or at (815) 825-2086 Ext. 3960, (815) 825-9106 (TTY), or send an email to [awilson@kishwaukeecollege.edu](mailto: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.

**Student Email:** 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:** here 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>.

**Tentative Course Outline: Course outline is subject to change.**

Week 1, Sep. 5

Lecture: Introduction to syllabus and class outline

Lab: Handout Lab Assignments

Homework: Complete Homework for Section A – Unit 1, Safety

Week 2, Sep. 12

Lecture: Section A – Unit 2, Hardware

Lab: Work on Lab Assignments

Homework: Complete Homework for Section A – Unit 2, Hardware

Week 3, Sep. 19

Lecture: Section A – Unit 3, Drawings

Lab: Work on Lab Assignments

Homework: Complete Homework for Section A – Unit 3, Drawings

Complete Missing Line Problems

Week 4, Sep. 26

Lecture: Section A – Unit 3, Drawings

Lab: Work on Lab Assignments

Homework: Complete Orthographic and 3 View Drawings

Week 5, Oct. 3

Lecture: Section B – Unit 1 thru 5, Hand Tools

Lab: Work on Lab Assignments

Homework: Complete Homework for Section B – Unit 1 thru 5, Hand Tools

Week 6, Oct. 10

Lecture: Section B – Unit 6 thru 9, Hand Tools

Lab: Work on Lab Assignments

Homework: Complete Homework for Section B – Unit 6 thru 9, Hand tools

Week 7, Oct. 17

No Class: Fall Break

Week 8, Oct. 24

Lecture: Section C – Unit 1 thru 6, Measurement

Lab: Work on Lab Assignments

Homework: Complete Homework for Section C – Unit 1 thru 6, Measurement

Week 9, Oct. 31

Lecture: Section D – Unit 1 thru 5, Materials

Lab: Work on Lab Assignments

Homework: Complete Homework for Section D – Unit 1 thru 5, Materials

Week 10, Nov. 7

Lecture: Section I – Unit 2 thru 16, Lathe

Lab: Work on Lab Assignments

Homework: Complete Homework for Section I – Unit 2 thru 16, Lathe

Week 11, Nov. 14

Lecture: Section I – Unit 2 thru 16, Lathe

Lab: Work on Lab Assignments

Homework: Complete Homework for Section I – Unit 2 thru 16, Lathe

Week 12, Nov. 21

Lecture: Section J – Unit 1 thru 5, Vertical Mill

Lab: Work on Lab Assignments

Homework: Complete Homework for Section J – Unit 1 thru 5, Vertical Mill

Week 13, Nov. 28

No Class: Thanksgiving Recess

Week 14, Dec. 5

Lecture: Section L – Unit 1 thru 9, Grinding

Lab: Work on Lab Assignments

Homework: Complete Homework for Section L – Unit 1 thru 9, Grinding

Week 15, Dec. 12

Lecture: Section L – Unit 1 thru 9, Grinding

Lab: Work on Lab Assignments

Homework: Complete Homework for Section L – Unit 1 thru 9, Grinding

Week 16, Dec. 19

Lecture: Final

Lab: Work on Lab Assignments

Homework: Turn In Home Work

Quiz: For Lathe, Vertical Mill, and Grinder

All required projects must be submitted for grading on the next to last class.

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