SYLLABUS

DATE OF LAST REVIEW: 02/2013

CIP CODE: 48.0501

SEMESTER: Departmental Syllabus

COURSE TITLE: CAD/CAM II

COURSE NUMBER: MACH0206

CREDIT HOURS: 4

INSTRUCTOR: Departmental Syllabus

OFFICE LOCATION: Departmental Syllabus

OFFICE HOURS: Departmental Syllabus

TELEPHONE: Departmental Syllabus

PREREQUISITES: MACH0204 CAD/CAM I
MACH0205 CAD/CAM II

REQUIRED TEXT AND MATERIALS: Please check with the KCKCC bookstore, http://www.kckcc.bookstore.com, for the required texts for your particular class.

COURSE DESCRIPTION:
The learner will be introduced to work coordinates and also work groups that are required to create a 3 dimensional drawing to produce multi axis machining operations. 3, 4 5 axis machining practices will be implemented. Several software’s will be introduced and taught (Master Cam, Gibbs, and Feature Cam) Students will make a choice of which or all will be mastered.

METHOD OF INSTRUCTION: A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE:

I. General applications
   A. Introduction
   B. Rotary positioning
C. Machining with coordinate systems.
D. Solids

II. Coordinate systems
A. What are coordinate systems
B. Multiple coordinate systems
C. Creating coordinate systems
D. Minimum plane rotation

III. Part set-up
A. Rotary set-up
B. Four axis set-ups
C. Five axis set-ups
D. Clearance planes

IV. Rotary tables and tombstones
A. Work fixture offsets
B. Axial alignment
C. Multiple part organs

V. Solids
A. Modeling
B. Machining solids
C. Solid modeling

EXPECTED LEARNER OUTCOMES:
A. The student will be able to recognize requirements for system to operate.
B. The student will be able to identify system prompts.
C. The student will be able to identify multi coordinate systems.
D. The student will be able to identify rotary machining methods.
E. The student will be able to identify four axis methods.
F. The student will be able to identify five axis methods.
G. The student will be able to identify and create plane rotations.
H. The student will be able to work fixture offsets.
I. The student will be able to identify axial offsets.
J. The student will be able to create multiple work fixture organ offsets.
K. The student will be able to set-up rotary devices
L. The student will be able to create clearance planes for rotary devices.
M. The student will be able to identify tombstones.
N. The student will be able to recognize solids.
O. The student will be able to identify solid modeling.
P. The student will be able create solid modeling machining methods.
Q. The student will be able to create programs for machining solids.

COURSE COMPETENCIES:
Upon completion of this course:

The student will be able to recognize requirements for system to operate.
1. The student will be able to determine if computer meets requirements to run software.
2. The student will be able identify systems requirements.
The student will be able to identify system prompts.
3. The student will be able to react to system messages.
4. The student will be able to take corrective actions to satisfy alarms.

The student will be able to identify multi coordinate systems.
5. The student will be able to identify multiple coordinate systems.
6. The student will be able to create a coordinate system.
7. The student will be able to create multiple coordinate systems.
8. The student will be able to recognize minimum rotational planes.

The student will be able to identify rotary machining methods.
9. The student will be able to identify rotary fixtures.
10. The student will be able to setup rotary systems.
11. The student will be able to identify axis nomenclature. A Axis.

The student will be able to identify four axis methods.
12. The student will be able to set software to accept four axis machining.
13. The student will be able to create four axis machining programs.

The student will be able to identify five axis methods.
14. The student will be able to set software to accept five axis machining.
15. The student will be able to create five axis machining programs.

The student will be able to identify and create plane rotations.
16. The student will be able to identify rotary setups within the software.
17. The student will be able to set-up part documentation for rotary machining.

The student will be able to work fixture offsets.
18. The student will be able to identify work fixture offsets.
19. The student will be able to create offsets for machining process.

The student will be able to identify axial offsets.
20. The student will be able to recognize when axial offsets are required.
21. The student will be able to create axial offsets.

The student will be able to create multiple work fixture organ offsets.
22. The student will be able to set-up software to accept multiple part offsets.
23. The student will be able to create several parts with multiple offsets.

The student will be able to set-up rotary devices
24. The student will be able to identify rotary fixtures.
25. The student will be able to create parts that require rotary machining process.

The student will be able to create clearance planes for rotary devices.
26. The student will be able to identify with why required clearance planes are necessary with rotary attachments.
27. The student will be able to create necessary clearance planes for rotary attachments.

_The student will be able to identify tombstones._

28. The student will be able to identify with why required clearance planes are necessary for tombstones.

29. The student will be able to create necessary clearance planes for tombstone attachments.

_The student will be able to recognize solids._

30. The student will be able to identify a solid program.

31. The student will be able to create solids.

_The student will be able to identify modeling._

32. The student will be able to identify a solid model vs. a solid surface.

33. The student will be able to create a solid model.

_The student will be able create solid modeling machining methods._

34. The student will be able to create several machine drawings with tooling and sequence of operations.

_The student will be able to create programs for machining solids._

35. The student will be able to create solid programs.

36. The student will be able to create full programs required for solid machining.

**ASSESSMENT OF LEARNER OUTCOMES:**
Student progress is evaluated by means that include, but are not limited to, exams, written assignments, and class participation.

**SPECIAL NOTES:**
This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student’s progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time.

Kansas City Kansas Community College is committed to an appreciation of diversity with respect for the differences among the diverse groups comprising our students, faculty, and staff that is free of bigotry and discrimination. Kansas City Kansas Community College is committed to providing a multicultural education and environment that reflects and respects diversity and that seeks to increase understanding.

Kansas City Kansas Community College offers equal educational opportunity to all students as well as serving as an equal opportunity employer for all personnel. Various laws, including Title IX of the Educational Amendments of 1972, require the college’s policy on non-discrimination
be administered without regard to race, color, age, sex, religion, national origin, physical handicap, or veteran status and that such policy be made known.

Kansas City Kansas Community College complies with the Americans with Disabilities Act. If you need accommodations due to a documented disability, please contact the director of the Academic Resource Center, in Rm. 3354 or call at: 288-7670.