

PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

**MICROSTATION W/LAB
CID 1200**

Class Hours: 3.0

Credit Hours: 4.0

Laboratory Hours: 3.0

**Date Revised: Spring
99**

NOTE: This course is not designed for transfer credit.

Catalog Course Description:

A course using Microstation CAD software for design and drafting applications. The course covers basic commands, 3-D commands, file manipulations, symbology, dimensioning and surfacing. The student will be able to construct three-dimensional design models; transfer information to two-dimensional files and dimension and annotate; and section and cross-hatch the two-dimensional file to create fabrication drawings.

Entry Level Standards:

Students entering this course should have mastered the basic principles of good drafting including orthographic projections, sectional views, auxiliary views and dimensioning. Students should have already developed a grasp of trigonometric and geometric concepts.

Prerequisites/Corequisites:

Prerequisites: CID 1100 and CID 1110

Corequisite: MTH 1020 or 1021

Textbook(s) and Other Reference Materials Basic to the Course:

Harnessing MicroStation 95, Krishnan, G.V., Taylor, and Rhea, Delmar Press, 1997.
Instructor supplied materials

I. Week/Unit/Topic Basis:

This schedule is a guide and may vary slightly, depending on the progress of the class.

Week	Topic
1	Use of Graphic Primitives
2	Use of Graphic Primitives (continued)
3	Placing Groups of Elements
4	Placing Text, Data Fields, and Tags
5	Element Modification
6	Use of Levels

7	Measurement and Dimensioning
8	Creation and Use of Drawing Sheets
9	Creation and Use of Cells
10	Patterning
11	Creation and Use of Reference Files
12	Three Dimensional Modeling
13	Special Commands for Three Dimensional Modeling
14	Rendering
15	Use and Creation of B-Spline Curves
16	Final drawing

II. Course Objectives*:

- A. Use MicroStation drawing commands to make professional drawings. II, IV, V
- B. Understand the philosophy of three-dimensional modeling. II
- C. Understand how to surface three-dimensional models using MicroStation. II, V, VIII
- D. Understand the steps necessary to produce production drawings from a three dimensional model. I

*Roman numerals after course objectives reference goals of the CID program.

III. Instructional Processes*:

Students will:

1. Use the "graphic primitives" of MicroStation to produce any desired line, linestring circle, arc, etc. *Numerical Literacy Outcome, Technological Literacy Outcome*
2. Visualize an object and determine the best approach to creating a three dimensional model representing the object. *Technological Literacy Outcome*
3. Create the desired complex shapes (chained to single elements) to create the above mode. *Problem Solving and Decision Making Outcome, Active Learning Strategies*
4. Create cells of frequently used details and to use these cells to eliminate repetitive drawing. *Active Learning Strategies*
5. Compress a three dimensional model back to two dimension to create production drawing. *Numerical Literacy Outcome*
6. Create reference files and use reference files in producing production drawing. *Active Learning Strategies, Transitional Strategy*
7. Use dimensioning tools to completely and properly dimension final drawings. *Technological Literacy Outcome, Communication Outcome*

8. Use annotation tools to completely annotate final drawing. *Technological Literacy Outcome, Communication Outcome*
9. Use computer to produce report as assigned. Such reports will contain proper English, use complete sentences, and contain correct spelling. *Communication Outcome, Technological Literacy Outcome*

*Strategies and outcomes listed after instructional processes reference Pellissippi State's goals for strengthening general education knowledge and skills, connecting coursework to experiences beyond the classroom, and encouraging students to take active and responsible roles in the educational process.

IV. Expectations for Student Performance*:

Upon successful completion of this course, the student should be able to:

1. Set software and environment variable to create seed file. A
2. Use fundamental MicroStation commands to place, modify, manipulate, and delete elements. A
3. Use Accudraw and Smartline with fundamental commands. A
4. Knowledge of element selection, fence manipulation, and view attributes. A
5. Place text, data fields, and tags. A
6. Place dimensions. A
7. Create cells and cell libraries. A
8. Attach and manipulate reference files. A
9. Place set menu for patterns. A
10. Create a 3 dimensional design file. B
11. Understand the design cube and 3D precision inputs. B
12. Set display and active depths in the process of 3D drafting. B
13. Define, rotate, move, select and save auxiliary coordinate systems. B
14. Mastering 3D primitive commands. C
15. Create solid and surface 3D elements. C
16. Change the status of 3D elements from solid to surface and vice versa. C
17. Project and revolute 2D complex shapes to create 3D objects. C
18. Create composite solids by using union, intersection, and difference operations. C
19. Construct fillets and chamfers between surfaces. C
20. Utilize sheet views to create 2 dimensional front view from the models. D
21. Fold the front view to create all other necessary views. D

22. Attach an auxiliary view. D
23. Place hidden lines for all views. D
24. Reference a border and dimension within the sheet view or sheet file. D
25. Utilize the model to reference individual parts to create an assembly drawing. D

*Letters after performance expectations reference the course objectives listed above.

V. Evaluation:

A. Testing Procedures:

Evaluation in this course will be based on the quality of the final drawings produced and short quizzes given during the semester. Final grades will be calculated as follows:

Drawings: 70%

Quizzes: 30%

B. Laboratory Expectations:

This course is primarily a laboratory course. Lecture time will be spent explaining the Integraph system and how to effectively use the system. Approximately nine drawings will be assigned during the semester.

C. Field Work:

Outside reading of material in drawing laboratory will be assigned and its completion is a required part of the course.

D. Grading Scale:

90 - 100 A

81 - 90 B

71 - 80 C

60 - 70 D

Below 60 F

VI. Policies:

A. Attendance Policy:

Pellissippi State Technical Community College expects students to attend all scheduled instructional activities. As a minimum, students in all courses must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course (Pellissippi State Catalog). Individual instructors may have requirements that are more stringent.

Regular attendance is required and expected in this course. Students who miss the equivalent of 10% in either lecture or laboratory time may, at the discretion of the instructor, be dropped one letter grade.

B. Academic Dishonesty:

Cheating will not be tolerated, although student cooperation and information sharing is expected and welcomed during laboratory time.

