COURSE TITLE: AutoCAD Level 2  
COURSE NUMBER: ETD 2340  

COURSE DESCRIPTION (with prerequisites):
To create advanced level technical drawings and prepare industrial type 3D models using AutoCAD software. Intermediate and advanced commands will be covered and drawings will be produced from all areas of engineering; mechanical, architectural, civil, and more including 3-dimensional modeling and renderings. Students will complete a series of review exercises and drawings. Recommended corequisite ETD 1320 or Instructor Permission. 3 semester credit hours

NAME(S) OF INSTRUCTORS:
Olabode Ogedengbe, Workforce Development Building, Room 123, phone 718-2390, OgedengeO@chipola.edu.

EFFECTIVE ACADEMIC YEAR:
2016-2017

REQUIRED TEXTBOOKS AND INSTRUCTIONAL MATERIALS:

GRADING POLICY:
The standing of a student in each course is expressed by one of the following letters and corresponding grading system:
A – 90 – 100
B – 80 – 89
C – 70 – 79
D – 60 – 69
F – 59 or less
The Chipola Catalog provides policies and procedures regarding the grading system. A student’s Grade Point Average is derived from the grading system/quality point scale.

ATTENDANCE AND WITHDRAWAL POLICIES:
Chipola College expects regular attendance of all students, and all instructors record attendance daily. Students who are absent from classes for any reason other than official college activities must satisfy the instructor concerned that the absence was due to illness or other clearly unavoidable reasons. Otherwise, the student may suffer grade loss at the discretion of the instructor. Chipola policy allows each instructor to specify in the Instructor First Day Handout whether or not an absence is excusable and what affect the absence or tardy may have on the grade.
A student is allowed to repeat a course a maximum of three (3) times. **On the third attempt a student (1) must bear the full cost of instruction (unless waived by Student Services), (2) cannot withdraw, and (3) must receive a grade.**

**MAKE-UP POLICY:**
Chipola allows each instructor to specify in the Instructor First Day Handout the makeup policy.

**ACADEMIC HONOR CODE POLICY:**
Students are expected to uphold the Academic Honor Code. Chipola College’s Honor Code is based on the premise that each student has the responsibility to (1) uphold the highest standards of academic honesty in his/her own work; (2) refuse to tolerate academic dishonesty in the college community; and (3) foster a high sense of honor and social responsibility on the part of students. Further information regarding the Academic Honor Code may be found in the Chipola Catalog, Student Governance section.

**STUDENTS WITH DISABILITIES POLICY:**
Chipola College is committed to making all programs and facilities accessible to anyone with a disability. Chipola’s goal is for students to obtain maximum benefit from their educational experience and to effectively transition into the college environment. Students with disabilities are requested to voluntarily contact the Office of Students with Disabilities to complete the intake process and determine their eligibility for reasonable accommodations.

**NOTICE OF EQUAL ACCESS/EQUAL OPPORTUNITY AND NONDISCRIMINATION:**
Chipola College does not discriminate against any persons, employees, students, applicants or others affiliated with the college with regard to race, color, religion, ethnicity, national origin, age, veteran’s status, disability, gender, genetic information, marital status, pregnancy or any other protected class under applicable federal and state laws, in any college program, activity or employment.

Karan Davis, Associate Vice President of Human Resources, Equity Officer and Title IX Coordinator, 3094 Indian Circle, Marianna, FL 32446, Building A, Room 183A, 850-718-2205, davisk@chipola.edu.

**LIBRARY AND ON-LINE REFERENCE MATERIALS:**
The library is a comprehensive learning resource center providing information in print, electronic, and multimedia format to support the educational objectives of the College. On-line catalogs, e-books and electronic databases can be accessed by using the LINCCWeb icon on the Chipola Library website at www.chipola.edu/library. If you have questions about database usage consult the “How to Use the Chipola Databases” on the Library website or call the Library at 850/718-2274 during regular hours. Library hours are posted each semester at the building entrance and on the Library website. See your Instructor First Day Handout for individual instructor recommendations and resources.
TECHNOLOGY RESOURCES:
The college’s learning management system is Canvas. Classes become available on Canvas on the first day of the semester. It is the student’s responsibility to log onto the Canvas system the first day of class to establish the first day of attendance and to check announcements. All official class communication must be through Canvas. For further information, contact your instructor or the Director of eLearning. The Canvas support hotline is available online in live chat and on the phone, toll-free, at 855-308-2812 for any issues in accessing or utilizing Canvas. The Technology Center, located in the library, is equipped with computer workstations. Lab hours are posted each semester at the building entrance and on the Library website.

FREE TUTORING RESOURCES:
The Academic Center for Excellence (ACE) Lab, located in Building L, offers free tutoring from 8 a.m. to 5 p.m. and is equipped with computer workstations. ACE lab hours are posted each semester at the room entrance and on the website. Additionally, Chipola College has contracted Smarthinking, a Pearson Company, for online tutoring services, accessible especially from 5 p.m. to 8 a.m. and weekends. Smarthinking can be accessed through Canvas.

ELECTRONIC DEVICE USAGE STATEMENT:
Classrooms should be free of all unnecessary distractions from the task of learning. Therefore, as a general rule, students should silence and avoid use of all electronic devices (laptops, phones, tablets, etc.) not being used for coursework. Consult first-day handouts for any specific policies related to the use of electronic devices in the classroom, as they may vary depending upon the nature of the course or the guidelines of the instructor. Faculty reserve the right to regulate the use of electronic devices and their accessories in class.

DISCIPLINE SPECIFIC COMPETENCIES / LEARNING OUTCOMES:
Program Learning Outcome: Use technology to organize, acquire, and convey information on drawings and reports.

<table>
<thead>
<tr>
<th>COURSE-LEVEL STUDENT LEARNING OUTCOMES FOR ETD 2340</th>
<th>DISCIPLINE-SPECIFIC GENERAL EDUCATION COMPETENCIES</th>
<th>ASSESSMENT METHODS FOR COURSE LEVEL STUDENT LEARNING OUTCOMES</th>
<th>LEARNING ARTIFACTS FOR AA PROGRAM ASSESSMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>At the completion of the course, the student will be able to:</td>
<td>Demonstrate mastery of computer aided drafting (CAD) by constructing engineering, mechanical, and geometrical drawings.</td>
<td>Assessment methods used are:</td>
<td></td>
</tr>
<tr>
<td>• Draw using enhanced line commands,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Use layout space printing commands</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
• Understand the fundamentals of 3D wireframes, surfaces, and solid modeling,
• Create 3D Models with lighting, materials, and textures to create renderings
• Extract data and link to tables,
• Create blocks with dynamic attributes,
• Understand plot styles and their use.
• Export and import drawing and related files for use with AutoCAD
• Explain the use of Raster images and related files,
• Use Drawing Standards commands.

Demonstrate ability to sketch, letter, and generate line-work to describe various objects.
Demonstrate ability to read and produce drawings involving orthographic projection, sections, pictorial and auxiliary views.
Demonstrate a wide range of mathematical skills including plane trigonometry, strength of materials, technical, and other engineering problems, including theories learned in engineering mechanics.
Demonstrate ability to use standard surveying equipment to make measurements and calculations to run a traverse, establish levels, keep notes and produce required drawings.
Demonstrate ability to analyze physical and mechanical properties of soil and concrete.
Demonstrate ability to solve basic hydraulic problems using the theory of incompressible fluids.
Demonstrate on-site skills required to establish grades, locate property lines and utilities and produce plots and calculate cut and fill by average-end-area.

**Assessment Codes**

| T = Tests | Pre/Post = Pre- and Post-Tests | UT = Unit Tests | Q = Quizzes | F = Final Examination | CF = Cumulative Final | EX = Departmental Exam | SE = Nat’l or State Standardized Exam |
| RPT = Report/Presentation | SP = Skills Performance | SD = Skills Demonstration | W = Writing Assignments | E = Essays | DE = Documented Essays | RP = Research papers | J = Jury | R = Recital |
MEANS OF ACCOMPLISHING STUDENT LEARNING OUTCOMES:
Learning outcomes are determined by measuring the ability of each student to retain the learning objectives of the course. Performance-based methods, such as completion of assigned projects, general knowledge tests, oral and written presentations of assignments, group discussions, observation of mastery of critical skills and analysis of the final product will determine the final grade on this course.

ASSIGNMENT AND/OR COURSE OUTLINE
ETD 2340 – AutoCAD Level 2
TENTATIVE SCHEDULE

Introduction and Review - Course Objectives
Review and Introduce Advanced Drawing/Modify Commands
Draw/Modify Review  Layer Tools  Model Space Plotting
QuickCalc  Multiline

Req’d Drawings: Handouts

Intro to 3D and Creating 3D Wireframes
Workspace  3D Viewing  Elevation, Thickness  Precision 3D Input
Wireframes  Visual Styles  3D Orbit  Camera

Chapter 21 – Specifying 3D Coordinates
Due: ab21-01 on p624-626, ab21-03 on p 639, and ab21-04 on p644-647

Chapter 22 – Viewing 3D Drawings
Due: ab22-01 on p658-661
Req’d Drawings: Handouts

Intro to 3D Surfaces and Solids
Surface Commands  Extrude  Sub-objecting Editing
Sweep, Revolve, Edges  Loft  Surface Blend  Primitives
Polysolid  Mesh  Presspull  Section/Slice
Shell  Boolean Operations

Chapter 23 – Creating 3D Surfaces
Due: ab23-01 on p698, ab23-03 on p703-704, ab23-04 on p705-706, ab23-05 on p708-709, ab23-06 on p711-712, ab23-08 on p716, ab23-10 on p722-724

Chapter 24 – Solids
Due: ab24-01 on p 737, ab24-04 on p746-747, ab24-05 on p749-750, ab24-06 on p763-765, ab24-07 on p769-770, ab24-14 on p788-789, ab24-16 on p800
Req’d Drawings: Handouts

3D Presentations, Animations, and Printing
Materials and Mapping  Lighting  Backgrounds  Motion Paths
Renderings  Flatshot/Solview

Bonus Chapter 2 – Rendering in 3D
Req’d Drawings: Handouts

Importing, Exporting, and Securing Files and Raster Images
Raster versus Vector  Import Commands  Export Commands  Underlays
Web Saves  Hyperlink  Publishing  eTransmit
OLE and Edit  DWF and DWFx  Publish  Plot Styles

Bonus Chapter 4 – Working with Other Applications
Due: abb4-01 on pBC131, abb4-02 on p132-133, abb4-03 on p140-142, abb4-04 on p149-150

Bonus Chapter 5 – Creating Electronic Output
Due: abb5-01 on pBC163, abb5-02.dwf on p170

Req’d Drawings: Handouts

Advanced Blocks and XREF’s, Drawing Standards
Attributes  Extraction of Data  Dynamic Blocks
External Reference Editing  Layer Translator  Creating and Implementing Standards

Req’d Drawings: Handouts

All Drawings and Homework due at last class

Final Exam

ETD 2340 – AutoCAD Level 2

Session Agenda: Classes will start at the times listed. Each session will include presentations, discussion, and lab time. It is imperative that you attend every class as notes should be taken.

Equipment Provided: The classroom computers have Windows 8 and AutoCAD. Each station is equipped with USB ports and a CD-RW drive is provided for use as a backup to store completed drawings and for use in grading by your instructor. It is strongly suggested that you have multiple methods for saving your work such as additional DVD’s, CD’s, USB flash/jump drives, or cloud storage with Autodesk.

GRADING PROCEDURES:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A - Excellent</td>
<td>90 – 100</td>
</tr>
<tr>
<td>B - Above average</td>
<td>80 – 89</td>
</tr>
<tr>
<td>C - Average</td>
<td>70 - 79</td>
</tr>
<tr>
<td>D - Below average</td>
<td>60 - 69</td>
</tr>
<tr>
<td>F - Failure</td>
<td>0 – 59</td>
</tr>
</tbody>
</table>

Drawings will be graded on a 20 point scale. Areas of attention should include correct solution to the problem, layers and technique used as well as quality of printed products, drawings, and videos. Numerical Grade (0-100) will be based on the AutoCAD drawing and rendering for the Hammer project.

Work is due two sessions after assignment or as per schedule. Work that is late will lose points. Grades are recorded in Canvas.

Attendance & Class Policies: It is imperative that you attend every class session to receive the most benefit for this course. Attendance is required except for designated lab sessions as scheduled by the instructor. An absence may be excused with appropriate written evidence.

No disruptions, disrespectful behavior, or violation of the student code will be tolerated. Chipola College and your instructor are committed to maintaining standards of academic honesty and integrity is a shared responsibility. All are expected to know and comply with Chipola’s Academic Honors Code which prohibits dishonesty in any form, including, but not limited to cheating, plagiarism, fabrication, and other forms of misconduct.
The instructor reserves the right to modify the schedule for the benefit of the class as he may evaluate. Any changes will be communicated to the class in advance.

**No food or open drinks are permitted in the classroom. No cell phone or pager use is allowed in the classroom and should be turned off during discussions and presentations.**

The instructor reserves the right to modify this schedule for the benefit of the class as he may evaluate. Any changes will be communicated to the class in advance of the change to give every student a chance to comment and make adjustments and via student Chipola College e-mail.

Every attempt must be made between the student and instructor to resolve any issues related to this class. In the very rare situation that an issue is not resolved in this fashion please contact the Dean of Workforce Development, Mr. Darwin Gilmore, 718-2270 or GILMORED@chipola.edu and provide all the documentation and explanation of your efforts to resolve the issue.

See your Instructor First Day Handout for individual instructor assignment schedule.