

MINE 261 Engineering CAD
The Department of Mining Engineering
College of Engineering and Mineral Resources
West Virginia University

Syllabus 2014

Course	MINE 261 Engineering CAD
Semester	Fall Semester
Course Format and Credit Hours	2 credit hr lecture and lab
Pre-requisite, Co-requisite and Deficiency	PR: ENGR 102. and student must have declared and approved major in Mining Engineering (MinE), dual major in MinE/CEE, MinE/GEOL, or major in 4+1 program MinE/WVUIT. <i>The course prefers student taking MINE 201 Mine Survey at the same time.</i> <i>If you have taken land surveying course, you must register MINE201 as “audit” for underground mine surveying lab to make up your deficiency at the same time.</i> <i>Consent for transfer students.</i> This course sections have multiple meeting times. Students must register for both Monday and Friday sections.
Instructor	Felicia Peng, 359f Mineral Resource Building, the Department of Mining Engineering, WVU. (304) 293-7680 (phone), Email: ffpeng@mix.wvu.edu
Schedule	Monday: 12:00 Noon – 12:50 P.M., and Friday: 9:00 A.M. – 10:50 A.M.
Class and Computer Lab Locations	ESB G03 for instruction. MRB 233 and 249 are for homework and other assignment. MRB 231 is mainly for teaching and capstone senior design classroom, and for printing large size spreadsheets and color maps for final reports.
Office Hours	Thursday, 9:00 A.M. to 12:00 P.M. Open door policy, or make an appointment.
Course Objectives	This course is to provide students with the skills and knowledge of 1) Fundamental of AutoCAD; 2) Carlson Civil Suite (SurvCADD-DTM) software tools; 3) creating spreadsheet templates for data analysis; 4) creating mine maps, contour surface maps; methodology of cut/fill volume calculations; 5) creating block library of unit operations. 6) Development of process plant flowsheet.
Expected Learning Outcome	Upon completion of this course, the students will have the abilities of using spreadsheet templates for surveying data analysis, drawing mine maps, surface contour maps and calculation of cut/fill volume; report writing, presentation slides creation, block library creation and process plant flowsheet configuration.
Required Text	1. Textbook Requirement: “Harnessing AutoCAD: 2013 and Beyond” , by Stelman, T. A., and Krishnan, G. V., Autodesk Press, Albany, NY. 2. Peng, F. F., Civil Suite (SurvCADD) integrated with AutoCAD manual, Surveying Data Analysis using spreadsheet templates Notes, Mining Engineering Department, WVU, Morgantown, WV, 2014.
References	Carlson Software Civil Suite Manual, Carlson Software, Maysville, KY. Get the HELP from Civil Suite software. Instruction manual and examples are posted at Carlson Software website: http://update.carlsonsw.com/manuals . Do not leave download manuals files in the

	computers at MRB 231 and 233. The manual has very large files. Download to your own flash drive or a CD.												
Topics	<table border="1"> <tr> <td> Part I. Fundamental of AutoCAD: Introduction and starting creating simple drawing and plotting Control draft settings A system of layers Using more construct commands Annotating and modifying drawings Block and wblock references and process flowsheet Design Dimensioning drawings Creating geometric figures and advanced modified commands Hatching and boundaries </td> </tr> <tr> <td> Part II. Mine Surveying Data analysis and Applications: 1) Mine surveying data analysis using spreadsheet templates 2) Applications of SurvCADD/AutoCAD: a. Mine surveying mapping b. Mine surface contours/elevation topographic mappings c. Cut/fills volume calculation e. Underground mine mapping f. File Management 3) Organizing and management of files, mine mapping project report writing-up, and presentation slide creation (if time allowed) </td> </tr> <tr> <td> Part III. Applications in Process Flowsheet Development: a. Creation of external file (wblock) library of unit operations b. Process plant flowsheet configuration and report writing. </td> </tr> </table>	Part I. Fundamental of AutoCAD: Introduction and starting creating simple drawing and plotting Control draft settings A system of layers Using more construct commands Annotating and modifying drawings Block and wblock references and process flowsheet Design Dimensioning drawings Creating geometric figures and advanced modified commands Hatching and boundaries	Part II. Mine Surveying Data analysis and Applications: 1) Mine surveying data analysis using spreadsheet templates 2) Applications of SurvCADD/AutoCAD: a. Mine surveying mapping b. Mine surface contours/elevation topographic mappings c. Cut/fills volume calculation e. Underground mine mapping f. File Management 3) Organizing and management of files, mine mapping project report writing-up, and presentation slide creation (if time allowed)	Part III. Applications in Process Flowsheet Development: a. Creation of external file (wblock) library of unit operations b. Process plant flowsheet configuration and report writing.									
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Grading Assignment	<table border="1"> <tr> <td>Attendance, textbook, coal preparation plant field trip/report</td> <td>15%</td> </tr> <tr> <td>AutoCAD homework+class exercise (10%) and Exam#1 & #2 (10% each). Note: Exam#2 is combination of AutoCAD & surveydata analysis and Civil Suite Mapping.</td> <td>30%</td> </tr> <tr> <td>Survey data analysis +assignments, and mapping project report.</td> <td>30%</td> </tr> <tr> <td>Exam#3</td> <td>15%</td> </tr> <tr> <td>Process plant flowsheet development and drawing</td> <td>10%</td> </tr> <tr> <td>Total</td> <td>100%</td> </tr> </table> <p>Notes:</p> <ol style="list-style-type: none"> 1) Attendance is absolute necessary. 2) Plant filed trip is mandatory. It will be scheduled on Monday afternoon. Or, it will be coordinate with one of the Departmental mine field trips. 2) For late homework and assignments and any portions of the project report, the penalty is 20% off the grade each day. 3) To hand-in all the homework and assignments are "mandatory". D grade or F grade will be given to the student for this course, who misses to hand-in any one of the homework, assignments or any portion of the project reports. 	Attendance, textbook, coal preparation plant field trip/report	15%	AutoCAD homework+class exercise (10%) and Exam#1 & #2 (10% each). Note: Exam#2 is combination of AutoCAD & surveydata analysis and Civil Suite Mapping.	30%	Survey data analysis +assignments, and mapping project report.	30%	Exam#3	15%	Process plant flowsheet development and drawing	10%	Total	100%
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Grading Policy	<p>Make-up Exams and Final Exam Policies:</p> <ol style="list-style-type: none"> 1) Make-up exams will only be given to the students handing-in a doctor's note clearly stating his or her sickness, attending a professional society meeting, due to illness or decease in immediate family, family emergency, specified in the University regulations. 2) No make-up exam will be given to inexcusable absence. 3) If you receive 40 or less than 40 (out of 100) in your final exam, you will receive an F or D- grade for this course.
Attendance Policy	<p>Consistent with WVU guideline, students absent from regularly scheduled examinations because of authorized University activities will have the opportunity to take them at an alternate time. Make up exams for absences due to any other reason will be at the discretion of the instructor.</p>
Social Justice Statement	<p>"West Virginia University committed to social justice. I concur with that commitment and expect to maintain a positive learning environment based upon open communication, mutual respect, and nondiscrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious consideration."</p> <p>If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise me and make appropriate arrangement with Disability Service (293-6700)"</p>
Days of Special Concern	<p>WVU recognizes the diversity of its students and the needs of those who wish to be absent from class to participate in Days of Special Concern, which are listed in the Schedule of Courses. Students should notify their instructors by the end of the second week of classes or prior to the first Day of Special Concern, whichever is earlier, regarding Day of Special Concern observances that will affect their attendance. Further, students must abide by the attendance policy of their instructors as stated on their syllabi. Faculty will make reasonable accommodation for tests or field trips that a student misses as a result of observing a Day of Special Concern.</p>
Ethics	<p>Integrity, trustworthiness and responsibility are central to the development of mature individuals. Students are expected to adhere to and practice the Code of Conduct of WVU, and maintain the highest standards of academic and professional integrity. Work that is not of the student's own creation will receive no credit. Student's ignorance is no legitimate defense for academic dishonesty. Academic dishonesty includes lying, cheating, stealing, and using unauthorized materials on any assignment, quiz or exam. Students shall refrain from using language or acting in a manner that is disrespectful/inappropriate towards other students and members of the WVU community. Sexual assault and harassment is inexcusable and shall result in disciplinary action in accordance with WVU policy. Students may not interrupt their classmates or professor, make fun of them, or disrupt the learning environment.</p>
FE Exam and PE Registration	<p>As part of the academic and professional development of Mining and Mineral Processing Engineers, the Department of Mining Engineering encourages students to take the Fundamentals of Engineering (FE) exam, and to then follow this by becoming the registered Professional Engineering (PE).</p>