MNGE 460  
SENIOR DESIGN  
Spring Semester 2017  

Instructor: Dr. Joseph C. Hirschi  
Office: ENGR E10  
Phone: 618-453-7923  
Email: jhirschi@siu.edu  
Office Hours: Monday and Wednesday 8:00-11:00am  
Tuesday and Thursday 8:00-9:30am  

Lecture Schedule: Monday and Wednesday at 11:00-11:50am in ENGR A29  
Lab Schedule: Tuesday, Thursday, and/or Friday at 11:00-11:50am in ENGR D33/35  

Course Objectives:  
1. Provide capstone academic experience where the student’s full undergraduate education can be applied in completion of a typical mining engineering project. Each project will include components that require applying knowledge gained in other mining engineering courses (e.g., materials handling, rock mechanics, ventilation, mineral processing).  
2. Provide an opportunity for students to gain experience using one or more commercially available mine planning software.  
3. Simulate a professional engineering office environment where students will be able to:  
   a. Develop and improve leadership and teamwork skills.  
   b. Learn the importance of deadlines and develop or improve time management skills required to meet deadlines.  
   c. Strengthen written and oral communication skills.  
4. Facilitate professional networking through workshops, guest lectures, and field trips.  

Text: None required. Students should become familiar with and utilize applicable software user manuals. SME Mining Engineering Handbook is recommended.  

Grading:  
1. Midterm Presentations ➔  3 @ 5% per presentation = 15% of grade.  
2. Midterm Reports ➔  3 @ 7.5% per report = 22.5% of grade.  
3. Final Project Presentation ➔  22.5% of grade.  
5. Leadership/Teamwork Performance Assessment from Instructor ➔  15% of grade.  
6. Peer evaluations from class members make up half of presentation scores.  
7. Extra Credit available at Instructor’s discretion for related Saluki Miner activities.  
8. Grading scale is shown in the following table. A grading curve will not be used.  

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>≥90%</td>
</tr>
<tr>
<td>B</td>
<td>80-89%</td>
</tr>
<tr>
<td>C</td>
<td>70-79%</td>
</tr>
<tr>
<td>D</td>
<td>60-69%</td>
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<tr>
<td>F</td>
<td>&lt;60%</td>
</tr>
</tbody>
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Course Outline:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
<th>Graded Work</th>
</tr>
</thead>
</table>
| 1    | 1/18 Lecture – Introductions, Syllabus, and Pre-requisites  
      Informal Lab – Inventory Mine Design Software Packages |  |
| 2    | 1/23 – “Interviews” to Determine Team Assignments  
      1/25 Lecture – Checkpoint Requirements/Deadlines  
      Informal Lab – Project Data Files |  |
| 3    | 1/30 Lecture – Feasibility Studies  
      1/31 Lab – Vulcan Webinar 11:00am-3:00pm  
      2/1 Lecture – Net Present Value, Other Investment Criteria |  |
| 4    | 2/6-9 Lab – MineSight Webinars 11:00am-1:00pm daily | Feasibility Study Presentations in A29 at 11am Reports Due 3/3 by Noon |
| 5    | 2/13–15 Lab – Carlson Webinars 11:00am-1:00pm daily | Regulatory Permits/Plans Presentations in A29 at 11am Reports Due 3/31 by Noon |
| 6    | No Lectures or Labs – Attend SME Annual Meeting |  |
| 7    | 2/27 – Coal Team 1st Midterm Presentation  
      2/28 – Copper Team 1st Midterm Presentation  
      3/1 – Gold Team 1st Midterm Presentation  
      3/2 – Quarry Team 1st Midterm Presentation |  |
| 8    | Lectures – Mine Permitting  
      Labs – Mine Layouts and Mine Permits |  |
| 9    | Spring Break – No Lectures or Labs |  |
| 10   | Lectures – Regulatory Requirements: Roof Control and Slope Stability Plans, Ventilation Plans and Air Permits  
      Labs – Mine Layouts and Mine Permits |  |
| 11   | 3/27 – Copper Team 2nd Midterm Presentation  
      3/28 – Gold Team 2nd Midterm Presentation  
      3/29 – Quarry Team 2nd Midterm Presentation  
      3/30 – Coal Team 2nd Midterm Presentation |  |
| 12   | Lectures – Production Scheduling, Mine Design  
      Labs – Mine Layouts and Production Schedules |  |
| 13   | Lectures – Equipment Selection, Manpower Scheduling  
      Labs – Mine Layouts and Production Schedules |  |
| 14   | 4/17 – Gold Team 3rd Midterm Presentation  
      4/18 – Quarry Team 3rd Midterm Presentation  
      4/19 – Coal Team 3rd Midterm Presentation  
      4/20 – Copper Team 3rd Midterm Presentation  
      4/20 – All Teams 15-minute Presentation at Joint SIU/IMI/SME St. Louis Chapter Meeting | Production Schedule Presentations in A29 at 11am Reports Due 4/21 by Noon |
| 15   | Lectures – Reclamation/Closure Plans  
      Lab – Final Presentations/Reports |  |
| 16   | 5/1 – Quarry Team Final Presentation  
      5/2 – Coal Team Final Presentation  
      5/3 – Copper Team Final Presentation  
      5/4 – Gold Team Final Presentation | Complete Mine Plan Presentations in A29 at 11am Reports Due 5/12 by Noon |
| Finals | Labs – Final Project Reports | Complete Mine Plan Reports Due 5/12 by Noon |

For important dates, policies, and practices, please see the campus-wide Syllabus Attachment at: http://pvcaa.siu.edu/_common/documents/syllabus-attachments/syllabus-attachment-spring-2017.pdf.
Syllabus Attachment
Spring 2017

Office of the Provost: http://provost.siu.edu/

SAFETY AWARENESS FACTS AND EDUCATION
Title IX makes it clear that violence and harassment based on sex and gender is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, etc. If you or someone you know has been harassed or assaulted, you can find the appropriate resources here:
http://safe.siu.edu/

SALUKI CARES
The purpose of Saluki Cares is to develop, facilitate and coordinate a university-wide program of care and support for students in any type of distress—physical, emotional, financial, or personal. By working closely with faculty, staff, students and their families, SIU will continue to display a culture of care and demonstrate our commitment to the well-being of the student body. For more information, please visit the Saluki Cares website at: http://salukicare.siu.edu/

MORRIS LIBRARY HOURS: http://library.siu.edu/hours

IMPORTANT DATES *
Semester Class Begins: 01/17/2017
Last day to add full-term course (without Dean’s signature): 01/22/2017
Last day to withdraw from the University with a full refund: 01/27/2017
Last day to drop a full-term course for a credit/refund: 01/29/2017
Deadline to apply to graduate at the end of this term: 04/2/2017
Final examinations: 05/8–5/12/2017
Commencement: 05/13/2017

Note: For more detailed information on the above deadlines, please visit the Registrar’s Office website or contact the Office of the Registrar at 618-453-1492. For add/drop dates that apply to shorter-than-full-term courses, please look at the Schedule of Classes search results at http://registrar.siu.edu/schedule/index.php

SPRING SEMESTER HOLIDAYS
Martin Luther King Jr.’s Birthday Holiday 01/16/2017
Spring Break 3/13–3/17/2017

WITHDRAWAL POLICY—Undergraduate only
Students who officially register for a session must officially withdraw from that registration in a timely manner to avoid being charged as well as receiving a failing grade for those classes. An official withdrawal must be initiated by the student, or on behalf of the student through the academic unit, and be processed by the Registrar’s office. For the proper procedures to follow when dropping courses and when withdrawing from SIU visit: http://registrar.siu.edu/students/withdrawal.php

INCOMPLETE POLICY—Undergraduate only
An INC grade may be assigned when, for reasons beyond their control, students engaged in passing work are unable to complete all class assignments for the course. An INC grade must be changed to a completed grade within one full semester (undergraduate) and one full year (graduate students), from the close of the term in which the course was taken or graduated, whichever occurs first. Should the student fail to complete the remaining course requirements within the time period designated, the incomplete will be converted to a grade of F and such grade will be computed in the student’s grade point average. For more information visit: http://registrar.siu.edu/grades/incomplete.php

REPEAT POLICY
An undergraduate student may, for the purpose of raising a grade, enroll in a course for credit more than once. For students receiving a letter grade of A, B, C, D, or F, the course repetition must occur at Southern Illinois University Carbondale. Effective for courses taken Summer 2013 or later, only the most recent (last) grade will be calculated in the overall GPA and count toward hours earned. This policy will be applied to all transferable credit in that only the last grade will be used to calculate grade point average. Only those courses taken at the same institution are considered repeats under this policy. See full policy at http://registrar.siu.edu/students/repeatclasses.php

GRADUATE POLICIES
Graduate policies often vary from Undergraduate policies. To view the applicable policies for graduate students, please refer to the graduate catalog at http://graduate.siu.edu/about-us/grad-catalog/

DISABILITY POLICY
Disability Support Services provides the required academic and programmatic support services to students with permanent and temporary disabilities. DSS provides centralized coordination and referral services. To utilize DSS services, students must contact DSS to open cases. The process involves interviews, reviews of student-supplied documentation, and completion of Disability Accommodation Agreements. For more information visit: http://dsservices.siu.edu/

PLAGIARISM
Student Conduct Code: http://srx.siu.edu/student-conduct-code/

ADVISORSHIP: http://advising.siu.edu/
SIU ONLINE: https://online.siu.edu/
SALUKI SOLUTION FINDER: http://solutionfinder.siu.edu/
MORRIS LIBRARY HOURS: http://library.siu.edu/hours