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SEP 25 2015

OFFICE OF THE SENATE COUNCIL

1. General Information

1a. Submitted by the College of: ENGINEERING

Date Submitted: 8/25/2015

1b. Department/Division: Mining Engineering

1c. Contact Person

Name: Jhon Silva

Email: jjsilv3@uky.edu

Phone: 8592571173

Responsible Faculty ID (if different from Contact)

Name:

Email:

Phone:

1d. Requested Effective Date: Semester following approval

1e. Should this course be a UK Core Course? No

2. Designation and Description of Proposed Course

2a. Will this course also be offered through Distance Learning?: No

2b. Prefix and Number: MNG 351

2c. Full Title: Underground Mine Design

2d. Transcript Title: Underground Mine Design

2e. Cross-listing:

2f. Meeting Patterns

LECTURE: 2

LABORATORY: 2

2g. Grading System: Letter (A, B, C, etc.)

2h. Number of credit hours: 3

2i. Is this course repeatable for additional credit? No

If Yes: Maximum number of credit hours:

If Yes: Will this course allow multiple registrations during the same semester?

2j. Course Description for Bulletin: Principles of underground excavations designs related to metallic, coal and industrial mineral deposits including underground mine layouts, stability of the underground excavations, material handling and drainage control. Underground mine planning and scheduling, equipment selection, and cost estimation.

2k. Prerequisites, if any: MNG 211, MNG 291, MNG 331, Engineering Standing; or consent of instructor

2l. Supplementary Teaching Component:

3. Will this course taught off campus? No

If YES, enter the off campus address:

4. Frequency of Course Offering: Fall,

Will the course be offered every year?: Yes

If No, explain:

5. Are facilities and personnel necessary for the proposed new course available?: Yes

If No, explain:

6. What enrollment (per section per semester) may reasonably be expected?: 30

7. Anticipated Student Demand

Will this course serve students primarily within the degree program?: Yes

Will it be of interest to a significant number of students outside the degree pgm?: No

If Yes, explain:

8. Check the category most applicable to this course: Traditional – Offered in Corresponding Departments at Universities Elsewhere,

If No, explain:

9. Course Relationship to Program(s).

a. Is this course part of a proposed new program?: No

If YES, name the proposed new program:

b. Will this course be a new requirement for ANY program?: No

If YES, list affected programs:

10. Information to be Placed on Syllabus.

a. Is the course 400G or 500?: No

b. The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if applicable, from **10.a** above) are attached: Yes

Distance Learning Form

Instructor Name:

Instructor Email:

Internet/Web-based: No

Interactive Video: No

Hybrid: No

1.How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations?

2.How do you ensure that the experience for a DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc.

3.How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc.

4.Will offering this course via DL result in at least 25% or at least 50% (based on total credit hours required for completion) of a degree program being offered via any form of DL, as defined above?

If yes, which percentage, and which program(s)?

5.How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting?

6.How do course requirements ensure that students make appropriate use of learning resources?

7.Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program.

8.How are students informed of procedures for resolving technical complaints? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Information Technology Customer Service Center (http://www.uky.edu/UKIT/)?

9.Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)? NO

If no, explain how student enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology.

10.Does the syllabus contain all the required components? NO

11.I, the instructor of record, have read and understood all of the university-level statements regarding DL.

Instructor Name:

SIGNATURE|HONAKER|Rick Honaker|MNG 351 NEW Dept Review|20140829

SIGNATURE|BJSTOK0|Barbara J Brandenburg|MNG 351 NEW College Review|20140909

SIGNATURE|HONAKER|Rick Honaker|MNG 351 ZCOURSE_NEW Approval Returned to Dept|20140915

SIGNATURE|BJSTOK0|Barbara J Brandenburg|MNG 351 NEW College Review|20150828

SIGNATURE|JMETT2|Joanie Ett-Mims|MNG 351 NEW Undergrad Council Review|20150925

Syllabus Mining 351 – Underground Mine Design
Department – Mining Engineering
XXX Semester 201X

3 Credit Hours
Office Hours: By e-mail appointment
Meeting Time: xx:xx-xx:xx xx
Meeting Location: MMRB 112

Instructor: Jhon Silva
Office: Room 234H MMRB
Phone: 257-1173
E-mail: jhon.silva@uky.edu

Course Description:
Underground Mine design introduces students to the principles of underground excavations designs related to metallic, coal and industrial mineral deposits including underground mine layouts, stability of the underground excavations, material handling and drainage control. Other topics include also underground mine planning and scheduling, equipment selection, and cost estimation.

Prerequisites:
MNG 211, MNG 291, MNG 331, and engineering standing; or consent of instructor.

Student Outcomes: (Undergraduate students Tied to ABET a-k (footnote))

Course Learning Outcome	Student Outcome	Implementation Strategy
1. Use skills, techniques and modern engineering tools to select one appropriate underground mining method for a given mineral deposit	(a)[1], (k)[2]	Test, Quizzes, Assignments, Final project report
2. Use skills, techniques, and modern engineering tools to select materials hauling system in an underground operation	(c)[3], (k)	Test, Quizzes, Assignments, Final project report
3. Analyze the effects of an underground mine on the surrounding environment.	(a), (e)[4], (k)	Test, Quizzes, Assignments, Final project report
4. Demonstrate the ability to communicate effectively by developing a written report	(g)[5]	Final project report

Grading Policy:

Assignments	15%	12 assignments, 15 points each
Quizzes	10%	12 quizzes, 10 points each
Midterm Exam	30%	1 exam, 30 points
Final project Report	15%	9-12 page written report
Final Exam	35%	1 exam, 35 points

Grading Scale

[1] (a) – An ability to apply knowledge of mathematics, science, and engineering
[2] (k) – An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
[3] (c) – An ability to design a system, component, or process to meet desired needs
[4] (e) – An ability to identify, formulate, and solve engineering problems
[5] (g) – An ability to communicate effectively

90% - 100%	A
80% - 89.9%	B
70% - 79.9%	C
60% - 69.9%	D
< 60%	E

Mid-Term Grades:
Mid-term grades will be posted on myUK by the deadline established in the Academic Calendar (http://www.uky.edu/Registrar/AcademicCalendar.htm).

Course Topics: Lectures will be provided by the instructor.

1. Underground Mining Methods
2. Overview of main parameters in planning, design and mining method selection for underground mines
3. Underground excavation stability principles (Ground control)
4. Overview of drainage control in an underground mine operation
5. Underground mine and excess spoil disposal layout (Backfill systems). Optimization
6. Materials Handling (Hoist components, design and mechanisms)
7. Scheduling (Equipment selection)
8. Capital and Operating cost in an underground mine operation
9. Overview of underground mine closure

References:

- Hartman, H.L., (1992), SME Mining Engineering Handbook, 2nd Ed.
- William A. Hustrulid and Richard L. Bullock., (2001), Underground Mining Methods: Engineering Fundamentals and International Cases Studies.
- Richard E. Gertsch and Richard L. Bullock., (1998), Techniques in Underground Mining.
- Barry H.G. Brady, Brown E.T., (2006), Rock Mechanics for underground mining, 3rd Ed.
- E. Hoek., P.K. Kaiser., W.F. Bawden., (2000), Support of Underground Excavations in hard Rock.

Course Activities and Assignments:
MNG 351 meets four hours per week: two lecture hours and two laboratory hours. Students need to develop assignments utilizing computers and specialized software for engineering analysis and mine design. The assignments will be in the form of small projects and will be assigned approximately every other week. A final project will be provided.

COURSE POLICIES:

Course Assignments: No late assignments will be accepted with the exception of the occasions when submission is delayed due to an excused absence as defined by S.R. 5.2.4.2.

Exams: Tests can only be made up for excused absences or by pre-arrangement with the course instructor.

Verification of Absences: Official documentation is required to be presented for excused absences. In the case of a University-related trip, a letter from an appropriate official shall be presented no later than one week from the date of the absence.

Academic Integrity: Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following web site: http://www.uky.edu/ombud A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Part II of Student Rights and Responsibilities (available online http://www.uky.edu/StudentAffairs/Code/part2.html) states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about the question of plagiarism involving their own work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording or anything else from another source without appropriate acknowledgement of the fact, the students are guilty of plagiarism. Plagiarism includes reproducing someone else's work, whether it be a published article, chapter of a book, a paper from a friend or some file, or something similar to this. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be.

Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone. When a student's assignment involves research in outside sources of information, the student must carefully acknowledge exactly what, where and how he/she employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas which are so generally and freely circulated as to be a part of the public domain (Section 6.3.1).

Please note: Any assignment you turn in may be submitted to an electronic database to check for plagiarism.

Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Information regarding dates of major religious holidays may be obtained through the religious liaison, David T. Beach (dtbeac1@uky.edu , 859-257-2754), Suite 407 of the Multidisciplinary Science Building, 725 Rose Street, 0082.

Accommodations due to disability: If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (DRC). If a student is not registered with the DRC, the student may contact David T. Beach via email at dtbeac1@uky.edu or by telephone 859-257-2754. The student may also visit the DRC website for information on how to register for services as a student with a disability: www.uky.edu/drc

DETAILED SCHEDULE

Week	Topics	Assignments
1	Review Syllabus. Definitions and terms. Underground mining methods	
2	Geological and geotechnical considerations in underground mine design	Q1 HW1
3	Overview of parameters in planing, desing and selection of a underground mining method	Q2 HW2
4	Ground control. Geotechnical analyses for underground excavations	Q3 HW3
5	Underground roof support. Considerations for selection, analysis, design	Q4 HW4
6	Drainage control in an underground mine operation, pumping design.	Q5 HW5
7	Geometrical desing considerations for an underground operation	Midterm Exam
8	Excess spoil disposal layout (Backfilling systems). Database assignation for Final Project	Q6 HW6
9	Materials Handling (Hoist components, design and mechanisms)	Q7 HW7
10	Production rates, short-long term planing, mine life time	Q8 HW8
11	Equipment selection for an underground mine operation.	Q9 HW9
12	Planing and sequencing an underground mine operation	Q10 HW10
13	Capital and operating costs	Q11 HW11
14	Underground mine closure, reclamation	Q12 HW12
15	Underground mine design final project overview	Final project report
16	Comprehensive Final Exam	Final Exam

New Course Form

https://myuk.uky.edu/sap/bc/soap/rfc?services=

Open in full window to print or save

Generate R

Attachments:

Browse... Upload File

	ID	Attachment
Delete	5425	MNG 351 Syllabus Underground Mine Design Submitted

First 1 Last

(*denotes required fields)

1. General Information

a. * Submitted by the College of: ENGINEERING Submission Date: 8/25/2015

b. * Department/Division: Mining Engineering

c.

* Contact Person Name: Jhon Silva Email: jjsilv3@uky.edu Phone: 8592571173

* Responsible Faculty ID (if different from Contact) Email: Phone:

d. * Requested Effective Date: ◉ Semester following approval OR ○ Specific Term/Year [1]

e.

Should this course be a UK Core Course? ○ Yes ◉ No

If YES, check the areas that apply:

☐ Inquiry - Arts & Creativity	☐ Composition & Communications - II
☐ Inquiry - Humanities	☐ Quantitative Foundations
☐ Inquiry - Nat/Math/Phys Sci	☐ Statistical Inferential Reasoning
☐ Inquiry - Social Sciences	☐ U.S. Citizenship, Community, Diversity
☐ Composition & Communications - I	☐ Global Dynamics

2. Designation and Description of Proposed Course.

a. * Will this course also be offered through Distance Learning? ○ Yes [4] ◉ No

b. * Prefix and Number: MNG 351

c. * Full Title: Underground Mine Design

d. Transcript Title (if full title is more than 40 characters): Underground Mine Design

e. To be Cross-Listed [2] with (Prefix and Number):

f. * Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours[3] for each meeting pattern type.

2	Lecture	2	Laboratory[1]		Recitation		Discussion
	Indep. Study		Clinical		Colloquium		Practicum
	Research		Residency		Seminar		Studio
	Other	If Other, Please explain:					

g. * Identify a grading system:

◉ Letter (A, B, C, etc.)
○ Pass/Fail
○ Medicine Numeric Grade (Non-medical students will receive a letter grade)
○ Graduate School Grade Scale

h. * Number of credits: 3

i. * Is this course repeatable for additional credit? ○ Yes ◉ No

If YES: Maximum number of credit hours:

If YES: Will this course allow multiple registrations during the same semester? ○ Yes ○ No

j. * Course Description for Bulletin:

Principles of underground excavations designs related to metallic, coal and industrial mineral deposits including underground mine layouts, stability of the underground excavations, material handling and drainage control. Underground mine planning and scheduling, equipment selection, and cost estimation.

k. Prerequisites, if any:

MNG 211, MNG 291, MNG 331, Engineering Standing; or consent of instructor

l. Supplementary teaching component, if any: ○ Community-Based Experience ○ Service Learning ○ Both

3. * **Will this course be taught off campus?** ○ Yes ◉ No

If YES, enter the off campus address:

4. **Frequency of Course Offering.**

a. * Course will be offered (check all that apply): ☑ Fall ☐ Spring ☐ Summer ☐ Winter

b. * Will the course be offered every year? ◉ Yes ○ No

If No, explain:

5. * **Are facilities and personnel necessary for the proposed new course available?** ◉ Yes ○ No

If No, explain:

6. * **What enrollment (per section per semester) may reasonably be expected?** 30

7. **Anticipated Student Demand.**

a. * Will this course serve students primarily within the degree program? ◉ Yes ○ No

b. * Will it be of interest to a significant number of students outside the degree pgm? ○ Yes ◉ No

If YES, explain:

8. * **Check the category most applicable to this course:**

☑ Traditional – Offered in Corresponding Departments at Universities Elsewhere
☐ Relatively New – Now Being Widely Established
☐ Not Yet Found in Many (or Any) Other Universities

9. **Course Relationship to Program(s).**

a. * Is this course part of a proposed new program? ○ Yes ◉ No

If YES, name the proposed new program:

b. * Will this course be a new requirement [5] for ANY program? ○ Yes ◉ No

If YES [5], list affected programs::

10. **Information to be Placed on Syllabus.**

a. * Is the course 400G or 500? ○ Yes ◉ No
If YES, the *differentiation for undergraduate and graduate students must be included* in the information required in **10.b.** You must include: (i) ident additional assignments by the graduate students; and/or (ii) establishment of different grading criteria in the course for graduate students. (See SR

b. ☑ * The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if appl **10.a** above) are attached.

[1] Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.
[2] The chair of the cross-listing department must sign off on the Signature Routing Log