Course Information

Date Submitted: 3/26/2014

Current Prefix and Number: MFS - Mfg Systems Engineering , MFS 503 LEAN MANUFACTURING PRIN AND PRACTICES

Other Course:

Proposed Prefix and Number: MFS 503

What type of change is being proposed?

> Major – Add Distance Learning

Should this course be a UK Core Course? No

1. General Information

a. Submitted by the College of: ENGINEERING

b. Department/Division: Engineering

c. Is there a change in 'ownership' of the course? No

   If YES, what college/department will offer the course instead: Select...

e. Contact Person

> Name: Fazleena Badurdeen
>
> Email: badurdeen@engr.uky.edu
>
> Phone: 323-3252

   Responsible Faculty ID (if different from Contact)

> Name:
>
> Email:
>
> Phone:

f. Requested Effective Date

   Semester Following Approval: No OR Effective Semester: Fall 2015

2. Designation and Description of Proposed Course

a. Current Distance Learning (DL) Status: Please Add

b. Full Title: LEAN MANUFACTURING PRINCIPLES AND PRACTICES

   Proposed Title: LEAN MANUFACTURING PRINCIPLES &PRACTICES

c. Current Transcript Title: LEAN MANUFACTURING PRIN AND PRACTICES

   Proposed Transcript Title: LEAN MANUFACTURING PRIN AND PRACTICES

d. Current Cross-listing: ME 503

Proposed – ADD Cross-listing :

Proposed – REMOVE Cross-listing:

e. Current Meeting Patterns

LECTURE: 3

Proposed Meeting Patterns

LECTURE: 3

f. Current Grading System: ABC Letter Grade Scale

Proposed Grading System: *Letter (A, B, C, etc.)*

g. Current number of credit hours: 3

Proposed number of credit hours: 3

h. Currently, is this course repeatable for additional credit?   No

Proposed to be repeatable for additional credit?   No

If Yes: Maximum number of credit hours:

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

2i. Current Course Description for Bulletin: Introduction of the fundamental concepts for production improvement utilizing lean manufacturing principles and practices. This course will consist of lectures, manufacturing simulation laboratory, plant tours, design projects, and assigned problems drawn from industry.

Proposed Course Description for Bulletin: This course will introduce students to the fundamental concepts of production improvement utilizing lean manufacturing principles and practices. In addition to the lectures, web-based simulations/experiments/games will be used to help learn the application of the tools supported by industry case studies. A Capstone Simulation will be used to demonstrate the collective application of all the tools and techniques (details included below). An application project is also included where students will work in teams to study a real-life manufacturing or service environment to assess the current state, identify improvement opportunities and develop countermeasures for implementation.

2j. Current Prerequisites, if any: Prereq: Enrollment restricted to junior-level or above students.

Proposed Prerequisites, if any: Prereq: Engineering standing or with Instructor permission.

2k. Current Supplementary Teaching Component:

Proposed Supplementary Teaching Component:

3. Currently, is this course taught off campus?   No

Proposed to be taught off campus?   No

If YES, enter the off campus address:

4. Are significant changes in content/student learning outcomes of the course being proposed?   No

If YES, explain and offer brief rational:

5a. Are there other depts. and/or pgms that could be affected by the proposed change? No

If YES, identify the depts. and/or pgms:

5b. Will modifying this course result in a new requirement of ANY program? No

If YES, list the program(s) here:

6. Check box if changed to 400G or 500: No

Distance Learning Form

Instructor Name: Fazleena Badurdeen

Instructor Email: badurdeen@engr.uky.edu

Internet/Web-based: Yes

Interactive Video: Yes

Hybrid: Yes

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?   The course syllabus conforms to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations. The use of Blackboard, email, and web-conferencing provides for timely and appropriate interaction between students and faculty.

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.   Student learning outcomes are assessed for all sections of the course, along with the usual TCE evaluations.

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.   Standard university policy will be followed in all academic aspects, and all quizzes and exams will be proctored on-site.

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? Yes.

If yes, which percentage, and which program(s)?   100%; Manufacturing Systems Engineering MS program.

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?   Access to student services will be the same as for other web-based courses in the university.

6. How do course requirements ensure that students make appropriate use of learning resources?   Students will be required to access resources on-line using venues such as Blackboard.

7.Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program.   Activities will be designed as web-based interactive games/simulations and posted on Blackboard for student access. A residency requirement is included where students will come to the central campus, from Wednesday through Saturday once during the semester, to complete capstone simulation. This will be scheduled to fall towards the end of the course.

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/)?   Syllabus provides this access information.

9.Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)?   YES

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.   N/A

10.Does the syllabus contain all the required components?   YES

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

Instructor Name: Fazleena Badurdeen

SIGNATURE|STEPHEN|L S Stephens|MFS 503 CHANGE Cross-List Chair Review|20140327

SIGNATURE|BJSTOK0|Barbara J Brandenburg|MFS 503 CHANGE College Review|20141111

SIGNATURE|JMETT2|Joanie Ett-Mims|MFS 503 CHANGE Undergrad Council Review|20150212

SIGNATURE|ZNNIKO0|Roshan Nikou|MFS 503 CHANGE Graduate Council Review|20150316

Courses	Request Tracking

Course Change 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	4428	MFS 503 Lean Manufacturing P and P Course Syllabus

[First] 1 [Last]

[Select saved project to retrieve...]   Get   New

NOTE: Start form entry by choosing the Current Prefix and Number
(*denotes required fields)

Current Prefix and Number:	MFS - Mfg Systems Engineering ▼ MFS 503 LEAN MANUFACTURING PRIN AND PRACTICES ▼	*Proposed Prefix & Number:* (example: PHY 401G) ☐ Check if **same** as current	MFS 503

*	What type of change is being proposed?	☐ Major Change ☑ Major – Add Distance Learning ☐ Minor – change in number within the same hundred series, exceptio the same "hundred series" ☐ Minor – editorial change in course title or description which does no in content or emphasis ☐ Minor – a change in prerequisite(s) which does not imply a change i content or emphasis, or which is made necessary by the elimination or alteration of the prerequisite(s) ☐ Minor – a cross listing of a course as described above

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

1.	General Information	
a.	Submitted by the College of: ENGINEERING	Submission Date: 3/26/2014
b.	Department/Division:	Engineering
c.*	Is there a change in "ownership" of the course?	
	☐ Yes ☉ No If YES, what college/department will offer the course instead? [Select... ▼]	
e.*	* Contact Person Name: Fazleena Badurdeen Email: badurdeen@engr.uky.ed Phone: 323-3252	
	* Responsible Faculty ID (if different from Contact): Email: Phone:	
f.*	Requested Effective Date:	☐ Semester Following Approval	OR	Specific Term: ² Fall 2015
2.	**Designation and Description of Proposed Course.**	

a.	Current Distance Learning(DL) Status:	☐ N/A ☐ Already approved for DL* ☉ Please Add ☐ Please Drop
	*If already approved for DL, the Distance Learning Form must also be submitted <u>unless</u> the department affirms (by checking this box) tha proposed changes do not affect DL delivery.	

b.	**Full Title:**	LEAN MANUFACTURING PRINCIPLES AND PRACTICES	*Proposed Title: *	LEAN MANUFACTURING PRINC PRACTICES
c.	Current Transcript Title (if full title is more than 40 characters):		LEAN MANUFACTURING PRIN AND PRACTICES
c.	*Proposed Transcript Title (if full title is more than 40 characters):*		

			LEAN MANUFACTURING PRIN AND PRACTICES	

d.	**Current Cross-listing:**	☐ N/A	OR	Currently[2] Cross-listed with (Prefix & Number):	ME 503

	Proposed – ADD[3] Cross-listing (Prefix & Number):		
	Proposed – REMOVE [3,4] Cross-listing (Prefix & Number):		

e.	**Courses must be described by <u>at least one</u> of the meeting patterns below. Include number of actual contact hours [8] for each meeting pattern type.**

Current:	Lecture 3	Laboratory[5]	Recitation	Discussion	Indep. Stu
	Clinical	Colloquium	Practicum	Research	Residency
	Seminar	Studio	Other	Please explain:	

Proposed: *	Lecture 3	Laboratory[5]	Recitation	Discussion	Indep. Stu
	Clinical	Colloquium	Practicum	Research	Residency
	Seminar	Studio	Other	Please explain:	

f.	**Current Grading System:**	ABC Letter Grade Scale
	*Proposed Grading System:**	◉ *Letter (A, B, C, etc.)* ○ *Pass/Fail* ○ *Medicine Numeric Grade (Non-medical students will receive a letter grade)* ○ *Graduate School Grade Scale*

g.	**Current number of credit hours:**	3	*Proposed number of credit hours:**	3

h.*	**Currently, is this course repeatable for additional credit?**	○ Yes ◉
*	*Proposed to be repeatable for additional credit?*	○ Yes ◉
	If YES:	*Maximum number of credit hours:*	
	If YES:	*Will this course allow multiple registrations during the same semester?*	○ Yes ○

i.	**Current Course Description for Bulletin:**

Introduction of the fundamental concepts for production improvement utilizing lean manufacturing principles and practices. This course will consist of lectures, manufacturing simulation laboratory, plant tours, design projects, a assigned problems drawn from industry.

*	*Proposed Course Description for Bulletin:*

This course will introduce students to the fundamental concepts of production improvement utilizing lean manufacturin principles and practices. In addition to the lectures, web-based simulations/experiments/games will be used to help learn the application of the tools supported by industry case studies. A Capstone Simulation will be used to demonstrate the collective application of all the tools and techniques (details included below). An application proje is also included where students will work in teams to study a real-life manufacturing or service environment to asse the current state, identify improvement opportunities and develop countermeasures for implementation.

j.	**Current Prerequisites, if any:**

Prereq: Enrollment restricted to junior-level or above students.

*	*Proposed Prerequisites, if any:*

Prereq: Engineering standing or with Instructor permission.

k.	**Current Supplementary Teaching Component, if any:**	○ Community-Based Experience

| | | ○ Service Learning |
| | | ○ Both |

| | *Proposed Supplementary Teaching Component:* | ○ Community-Based Experience
○ Service Learning
○ Both
○ No Change |

3.	**Currently, is this course taught off campus?**	○ Yes ◉
*	*Proposed to be taught off campus?*	○ Yes ◉
	IF YES, enter the off campus address:	

| 4.* | **Are significant changes in content/student learning outcomes of the course being proposed?** | ○ Yes ◉ |
| | If YES, explain and offer brief rationale: | |

5.	**Course Relationship to Program(s).**	
a.*	**Are there other depts and/or pgms that could be affected by the proposed change?**	○ Yes ◉
	If YES, identify the depts. and/or pgms:	

| b.* | **Will modifying this course result in a new requirement^Z for ANY program?** | ○ Yes ◉ |
| | If YES^Z, list the program(s) here: | |

| 6. | **Information to be Placed on Syllabus.** | |
| a. | ☐ Check box if changed to 400G or 500. | If changed to 400G- or 500-level course you must send in a syllabus and *you must include the differentiatio* undergraduate and graduate students by: (i) requiring additional assignments by the graduate students; an establishing different grading criteria in the course for graduate students. (See *SR 3.1.4.*) |

Distance Learning Form

This form must accompany every submission of a new/change course form that requests distance learning delivery. This form may be required when changing a course already approved for fields are required!

Introduction/Definition: For the purposes of the Commission on Colleges Southern Association of Colleges and Schools accreditation review, *distance learning* is defined as educational process in which the majority of the instruction (interaction between students and instructors and among students) in a course occurs when students and instruct the same place. Instruction may be synchronous or asynchronous. A distance learning (DL) course may employ correspondence study, or audio, video, or computer technolo

A number of specific requirements are listed for DL courses. The *department* proposing the change in delivery method is responsible for ensuring that the require are satisfied at the individual course level. It is the responsibility of the instructor to have read and understood the university-level assurances regarding an equivalent e students utilizing DL (available at http://www.uky.edu/USC/New/forms.htm).

Course Number and Prefix:	ME/MFS 503	Date:	3/26/2014
Instructor Name:	Fazleena Badurdeen	Instructor Email:	badurdeen@engr.uky.edu

Check the method below that best reflects how the majority of the course content will be delivered.

Internet/Web-based ☑   Interactive Video ☑   Hybrid ☑

Curriculum and Instruction

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

The course syllabus conforms to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations. The use of Blackboard, email, and web-conferencing provides for timely and appropriate interaction

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 go assessment of student learning outcomes, etc.

   Student learning outcomes are assessed for all sections of the course, along with the usual TCE evaluations.

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; aca policy; etc.

   Standard university policy will be followed in all academic aspects, and all quizzes and exams will be proctored c site.

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 a as defined above?

   Yes.

   Which percentage, and which program(s)? .

   100%; Manufacturing Systems Engineering MS program.

   *As a general rule, if approval of a course for DL delivery results in 50% or more of a program being delivered through DL, the effective date of the course's DL deli months from the date of approval.

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 se

   Access to student services will be the same as for other web-based courses in the university.

Library and Learning Resources

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

   Students will be required to access resources on-line using venues such as Blackboard.

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

   Activities will be designed as web-based interactive games/simulations and posted on Blackboard for student access A residency requirement is included where students will come to the central campus, from Wednesday through Saturda

Student Services

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/ the course, such as the Information Technology Customer Service Center (http://www.uky.edu/UKIT/)?

   Syllabus provides this access information.

9. Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)?

   ◉ Yes
   ○ No

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

   N/A

10. Does the syllabus contain all the required components, below? ☑ Yes

    ∘ Instructor's **virtual** office hours, if any.

    ∘ The technological requirements for the course.

    ∘ Contact information for Distance Learning programs (http://www.uky.edu/DistanceLearning) and Information Technology Customer Service Center (http://www.uky.edu/UKIT/Help/; 859-218-HELP).

    ∘ Procedure for resolving technical complaints.

    ∘ Preferred method for reaching instructor, e.g. email, phone, text message.

    ∘ Maximum timeframe for responding to student communications.

    ∘ Language pertaining academic accommodations:

       ▪ "If you have a documented disability that requires academic accommodations in this course, please make your request to the University Disability Res The Center will require current disability documentation. When accommodations are approved, the Center will provide me with a Letter of Accommoda details the recommended accommodations. Contact the Disability Resource Center, Jake Karnes, Director at 859-257-2754 or jkarnes@email.uky.edu

    ∘ Specific dates of face-to-face or synchronous class meetings, if any.

    ∘ Information on Distance Learning Library Services (http://www.uky.edu/Libraries/DLLS)

       ▪ Carla Cantagallo, DL Librarian

       ▪ Local phone number: 859 257-0500, ext. 2171; long-distance phone number: (800) 828-0439 (option #6)

       ▪ Email: dllservice@email.uky.edu

       ▪ DL Interlibrary Loan Service: http://www.uky.edu/Libraries/libpage.php?lweb_id=253&llib_id=16

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

    Instructor Name:
    Fazleena Badurdeen

Abbreviations: DLP = Distance Learning Programs ATG = Academic Technology Group Customer Service Center = 859-218-HELP (http://www.uky.edu/UKIT/Help)

Revised 8/09

[1]See comment description regarding minor course change. *Minor changes are sent directly from dean's office to Senate Council Chair.* If Chair deems the change as "n form will be sent to appropriate academic Council for normal processing and contact person is informed.

[2]Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.

[3] Signature of the chair of the cross-listing department is required on the Signature Routing Log.

[4] Removing a cross-listing does not drop the other course – it merely unlinks the two courses.

[5] Generally, undergrad courses are developed such that one semester hr of credit represents 1 hr of classroom meeting per wk for a semester, exclusive of any lab me meeting generally represents at least two hrs per wk for a semester for 1 credit hour. (See *SR 5.2.1.*)

[6] You must *also* submit the Distance Learning Form in order for the course to be considered for DL delivery.

[7]In order to change a program, a program change form must also be submitted.

Submit as New Proposal   Save Current Changes

University of Kentucky
ME/ MFS 503: Lean Manufacturing Principles & Practices
Fall 2015

Course Description:
This course will introduce students to the fundamentals concepts of production improvement utilizing lean manufacturing principles and practices. In addition to the lectures, web-based simulations/experiments/games will be used to help learn the application of the tools supported by industry case studies. A Capstone Simulation will be used to demonstrate the collective application of all the tools and techniques. An application project is also included where students will work in teams to study a real-life manufacturing or service environment to assess the current state, identify improvement opportunities and develop countermeasures for implementation.

Prerequisites:
Engineering standing or with Instructor permission.

Instructor:
Dr. Fazleena Badurdeen
Room No. 414L, CRMS Building,
Phone: 323-3252, E-mail: badurdeen@engr.uky.edu
Virtual Office: **https://connect.uky.edu/lean-online/**
Office hours: Weekly, on Wednesdays from 6:00 – 7:00 PM (online through Adobe Connect)

Student Learning Outcomes:
Upon completion of this course, the students should be able to
1. Understand and appreciate what is 'true lean'
2. Identify different types of wastes in manufacturing that do not add value from the customer's perspective
3. Understand the importance of culture and problem solving in lean transformations
4. Understand the concept of flow and learn how to implement a pull production system
5. Apply various tools such as 5S, visual management, setup reduction, and standardized work that can be used to eliminate waste and achieve flow in lean manufacturing
6. Analyze processes for problems and implement countermeasures to solve them.

Required Material:
There is no required text book for this course. All students must have a webcam and microphone to participate in the virtual meetings. Access to a scanner may be required. The minimum technical requirements to be successful in an on-line course are available at: http://www.uky.edu/DistanceLearning/current/technology/techReqs.html (to be changed to specific requirements link on course website later)

Reference Texts (optional):
There is no formal textbook required for this course. Some additional reference texts that will help you understand the topics covered are:

- **Ohno, T.,** "Toyota Production System: Beyond Large-Scale Production", Productivity Press, 1988.
- **Shingo, S.,** "A Study of the Toyota Production System", Productivity Press, 1981.
- **Hirano, Hiroyuki,** "5 Pillars of the Visual Workplace: The Sourcebook for 5S Implementation", Productivity Press, 1990.
- **Shingo. S.,** "Zero Quality Control, Source Inspection and the Poka-Yoke System", Productivity Press, 1986
- **Liker, J.K.,** "The Toyota Way", McGraw Hill, 2004.
- **Liker, J.K. and Hoseus, M.,** "Toyota Culture: The Heart and Soul of the Toyota Way", McGraw Hill, 2007.
- The Productivity Press Development Team, "Pull Production for the Shopfloor", Productivity Press, 2002.
- Other relevant reading materials will be provided, as needed, during the course.

Grading:
The grade for the course will be based on the following assignments.

Quizzes	(10%)
Homework Assignments/Activity Reports*	(20%)
Mid-term Exam*	(25%)
Final Exam*	(25%)
Final project*	(20%)

Additional questions/assignments will be given for students taking this course for graduate credit.

Grading Scale:
Grades will be assigned as follows:
Undergraduate Students: A = 90%-100%; B = 80%-89%; C=70%-79%; D= 60%-69%;E= Below 60%
Graduate Students: A = 90%-100%; B = 80%-89%; C=70%-79%; E= Below 70%

Graduate Students: For those students taking the course for graduate credit, a differential in grade assignment compared to that for undergraduates is expected. The level of difficulty in the course project is also expected to be higher for graduate students. Also, graduate students must obtain a grade of 'C' or better to pass the course.

Quizzes: A short quiz will be given at the beginning of each module based on the previous module's course content.

Homework Assignments: Homework will be assigned at the end of each module. They will be due one week from the date assigned unless otherwise indicated. Homework must be submitted electronically through Blackboard by 11:59 PM on the date it is due. All grades for the homework assignments will be posted on Blackboard. All homework submitted on Blackboard must be completed on white paper (lined notebook paper or white printer paper), scanned and submitted in pdf format. You can also use MS Word, MS PowerPoint, MS Excel, etc., to provide answers to the homework. If so, all the documents must be converted into pdf format before being submitted through Blackboard. See below for late homework policy.

Late homework will not be accepted but will be considered on a case by case basis under special circumstances. Such instances should be submitted to the instructor via email.

Activity Reports: This course includes a number of interactive exercises, in the form of on-line simulations, virtual experiments and games to help you learn and understand various concepts taught in the course. These will be posted on Blackboard under the relevant modules. You will be required to run these experiments/simulations, observe performance of the system and report your observations and assessment of the situation. Specific guidelines to be followed for each experiment/simulation and observations to be recorded will be provided. See below for late report submission policy.

Capstone Simulation: This course includes a Capstone Simulation, an interactive and hands-on activity, that will be conducted in the Cylinder Factory on the campus of the University of Kentucky in Lexington, KY during the weekend following the 12th week of the course (add specific dates here XXXX). It is required that all students attend this simulation in person to get a hands-on experience in applying the lean manufacturing principles and practices taught in this course. The simulation will be conducted xx AM – xx PM in the Cylinder Factory and students can choose come the previous day or arrive in time for the session on Wednesday. More details will be provided within the

next 2 weeks. Students are required to submit a report following the Capstone Simulation which will be counted as another homework assignment. The format and requirements for this assignment will be provided.

Final Project: The final project will be assigned mid way through the semester. Presentations for the final project will be scheduled in the week of XXX through Adobe Connect. The final report will be due at the time of the presentation. Students will be guided in the selection of topics that can qualify as final application projects. Students are encouraged to select topics from their workplaces if they are employed full-time or part-time. For on campus students and those in and around Lexington, the instructor can assist in finding projects with local companies.

<u>Format for Submission: All assignments and reports</u> submitted must meet the following guidelines for full credit to be given:

1. Use standard 8 ½ by 11 paper (unless otherwise stated), lined or unlined. Do not use paper from a spiral bound notebook.
2. Handwritten material must be legible when scanned. Use a suitably dark pen or pencil, and do not submit a camera photo.

Exams: The exams (mid-term and final) will test the student's understanding of the intended learning outcomes for this course. Exams are closed-book; you may need a calculator to answer some questions. Proctored exams will be administered at various campuses, arrangements to be made. In most instances a proctoring fee will be incurred. The mid-term and final exam dates are included in the course outline and the grades for these exams will be posted in myUK by the deadline established in the Academic Calendar (http://www.uky.edu/Registrar/AcademicCalendar.htm).

The use of cell phones, MP3 players, or any other electronic device (other than a calculator) during the exams will be considered cheating. Cell phone calculators may not be used during exams.

Attendance: Attendance in all the synchronous sessions is mandatory. See below for policy regarding Excused Absences. A grade of zero will be given for all unexcused absences from exams. Make-ups will be given only in cases of excused absences. 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.

Student Interaction:

Communication: Communication between instructor and student will be via email or virtual office meetings (https://connect.uky.edu/lean-online/). The most suitable time for regular meetings via Adobe Connect will be established at the beginning of the semester.

E-mail: UK email addresses will be used. Students must activate e-mail forwarding if they prefer another primary e-mail address.

Blackboard Access: Blackboard will be used to communicate course content, announcements, exam grades, etc. To access UK's Blackboard go to www.uky.edu and click on LINK BLUE then BLACKBOARD.

Technical Support: Students experiencing difficulty with delivery of the course material should contact the instructor or the UK help desk. Links to UK help are available on the Blackboard login page. For difficulties with Blackboard or logins, contact the Teaching and Academic Support Center http://www.uky.edu/ukit/atg/tasc, or the Information Technology Customer Support Center at https://www.uky.edu/ukit/help, and inform the instructor.

Audio-conferencing:
There are several options for the audio connection – use the one indicated by the instructor
   a. Direct phone line (recommended if only person-to-person conversation)
   b. Web-audio within Adobe connect. After logging in, push "TALK" when you wish to speak.

Tentative Course Outline:

Week	Content Available on BB	Module	Relevant Assignments	Quiz Completion Date	Assignment Completion Date
1		Introduction and Course Overview			
		Introduction to Lean (simulation exercise)			
2		Value and Waste	Quiz 1 (Intro to Lean)/Homework #1		
2,3		Standardized Work (simulation exercise)	Quiz 2 (Value and Waste), Homework #2		
4		Problem Solving	Quiz 3 (Std. Work), Homework #3		
5		Flow Production (simulation exercise)	Quiz 4 (Prob. Solving)		
6		Value Stream Mapping	Quiz 5 (Flow), Homework #4		
7		5S & Visual Management (simulation exercise)	Quiz 6 (Value Stream Mapping)		
		Mid-term Examination			
8		Building in Quality	Quiz 7 (5S and VM), Homework #5		
		Setup Reduction and SMED	Quiz 8 (Quality), Homework #6		
9		Hoshin Kanri and Project Discussion	Quiz 9 (Setup Reduction), Homework #7		
10		Pull Production			
11		Pull Simulation Exerciese in Cylinder Factory - ON CAMPUS			
12		Production Leveling	Quiz 10 (Pull), Homework #8		
13		Organizational Culture and Lean Transformations	Quiz 11 (Production Leveling)		
14		Project Presentations			
15		*Reivew and Final Examination*			

Cells marked yellow to be completed based on semester dates

Changes may be made to any part of this syllabus during any time in the semester. Students will be full participants in the discussion about those changes and the final decision will be made collectively.

Excused Absences: Students need to notify the professor of absences prior to class when possible. S.R. 5.2.4.2 defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, and (e) other circumstances found to fit "reasonable cause for nonattendance" by the professor.

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, Mr. Jake Karnes (859-257-2754).

Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed (excused or unexcused) per university policy.

Verification of Absences: Students may be asked to verify their absences in order for them to be considered excused. Senate Rule 5.2.4.2 states that faculty have the right to request "appropriate verification" when students claim an excused absence because of illness or death in the family. Appropriate notification of absences due to university-related trips is required prior to the absence.

Late Submission Policy: Students who wish to submit a homework assignment/report later than the due date should obtain permission in advance from the instructor; otherwise, it will be treated as failure to submit the assignment as required. The number of additional days provided to submit the assignment/report will be decided by the instructor based on the reasoning for the delay.

Points will be deducted for every late submitted assignment/report if delayed further than the extended deadline. Five percent of the grade will be taken off for each day the submission is delayed from the newly stipulated deadline.

Make-up Policy for Missed Work with an Excused Absence: Those students who have obtained prior permission from the instructor to have an excused absence will have one week to contact instructor regarding missed graded work.

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 website: 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, the student, and the student alone must do it. 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 general, 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.*

For information on Distance Learning Library Services go to
http://www.uky.edu/Libraries/DLLS. You can also contact Carla Cantagallo, DL
Librarian through phone (859-257-0500 ext. 2171 or long-distance phone number:
800-828-0439) or email (dllservice@email.uky.edu).

Accommodations due to disability:
If you have a documented disability that requires academic accommodations in this
course, please make your request to the University Disability Resource Center. The
Center will require current disability documentation. When accommodations are
approved, the Center will provide you with a Letter of Accommodation which
details the recommended accommodations. Contact the Disability Resource Center:
Jake Karnes, Director by phone 859-257-2754 or email address:
jkarnes@email.uky.edu.

From:	Nikou, Roshan
Sent:	Monday, March 16, 2015 10:00 AM
To:	Brothers, Sheila C; Carvalho, Susan E; Ellis, Janie; Ett, Joanie M; Hippisley, Andrew R; Jackson, Brian A; Lindsay, Jim D.; Nikou, Roshan; Price, Cleo; Timoney, David M
Cc:	Fox, Charles W; Yu, Guoqiang; Wilson, John; Studts, Jamie L; Yeager, Kevin; Anastacio, Enrique &
Subject:	Transmittals
Attachments:	PLS 455G.pdf

TO: Andrew Hippisley, Chair and Sheila Brothers, Coordinator
        Senate Council

FROM: Brian Jackson, Chair and Roshan Nikou, Coordinator
        Graduate Council

Graduate Council approved the following proposals and is now forwarding them to the Senate Council to approve. Please note, the Graduate Council received the attached course proposal, PLS 455G via email.

Courses

ABT 505 Evolution in Agriculture, Medicine & Conservation Biology
✓BME 580 Introduction to Biomedical Imaging
MFS 503 Lean Manufacturing Principles & Practice
BSC 732 Interdisciplinary Protocol Development
PLS 455G Wetland Delineation
EES 579 Groundwater Geophysics

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