COURSE SYLLABUS

Instructor
• Name: Barry J. Wilkie, PhD
• Office Number 228-935-3643
• Email barry.wilkie@usm.edu; barry.wilkie@hii-ingalls.com

Office Hours
• Instructor will be available online or email. Conference calls are available by appointment.

Drop Date
• The last day to drop the class without Academic Penalty and receive 100% financial credit, is Wednesday, August 31, 2016.
• Last day to drop and receive a grade of W, is Friday, November 4, 2016.

Prerequisites
• None (Recommended: Calculus I & II or study supplementary material)

Credit Hours
• 3 hours.

Course Description
IET 405 is designed to offer students tools and techniques that are commonly used in industry for production planning, analysis and control of production systems. It includes performance measures, forecasting, capacity planning, optimization principles applied to inventory planning; JIT systems; aggregate planning models; Material requirement planning; supply chain management; and scheduling.

Course Overview
Course topics cover principles, models and techniques for production planning and development, products sales and management

• Formulations, models, and analytical procedures for production planning and operation
• Forecasting, principles of inventory control, aggregate planning
• Lean operation, Kanban systems, and production scheduling
• Optimization models for capacity, production, and inventory decisions.
Late Assignments or Projects
• There are penalties for late submissions. A (1-2) day(s) late submission will reduce 25% of the points from the earned grade of an assignment. A (3-5) day’s late submission will reduce 50% of the points from the earned grade. Assignment will not be graded at all, if it is submitted after one week from due date.

Course Outcome(s)
Upon completion this course, students should be able to:
• Identify, analyze and solve problems related to manufacturing systems
• Identify opportunities for improving existing systems
• Design effective new systems
• Make the trade-offs needed to coordinate policies from disparate areas
• Communicate effectively and demonstrate written communication proficiencies
• Determine and use the appropriate tools for production and inventory control

Student Learning Outcomes
• In this course students learn theories and practices for production planning and control that are broadly attractive among the industrial practitioners. Students learn and study the current approach to effectively manage industry procedure and practices related to production planning, scheduling, operations strategy, product quality, lean manufacturing, forecasting methods, supply chain management practices, scheduling.

Course Communication
• The main mode of one-to-one communication will be through Eagle Learning Online. Course communication will be via Eagle Learning Online, discussion board, private email and chat. Weekly discussions and student interaction will be through the discussion board. The main mode of Course communication such as obtaining lecture notes, assignments and exams will be through Eagle Learning Online. The interaction between instructor and students, as well as one-to-one communication will be through Eagle Learning Online, students USM email, and assignment feedback or comments. Students may contact instructor during the week by email or phone for an appointment.

Required Text(s) and Readings

Reference Text (recommended)
• Production and Operations Analysis, by Steve Nahmias
• The paperback international edition costs much less and can be ordered online from a retailer such as Amazon, Barnes & Noble, etc., or (www.abebooks.com). The ISBN# is the same as the hard over edition.

Technology Requirements
• Students require a computer, internet connection, and headphones/speaker. Students also require software including Microsoft Word, Excel, Power Point and scientific calculator to complete the assignments and course exams.
Class Procedures and Requirements

- Students should read all the lecture notes, (power point presentations), and text chapters posted in the course website to accomplish the best performance. There will be assignments related to the class lectures in order to test the understanding of the subject matter.
- Assignments will be posted in the Assignment box. Assignment should be submitted as a MS Word or Excel Spreadsheet document or a pdf format. If an assignment is hand-written, it should be scanned to one pdf file prior to upload. Scanned document must not be any picture file (cannot be a jpg or bmp file). All submissions should be via Assignment Drop Box within the assignment due date.
- Homework can be discussed with other students, but must be completed by each student individually. The case study, assignment or report should reflect student’s individual style, and approach to solve the problem and writing the report. It is recommended that each homework /assignment should contain a title page with student’s name on it.
- A student may (only) re-submit the assignments; if he/she believes he/she achieved better understanding or better results, after the first submission, within the same week.

Class Participation Policy

- Students are expected to “participate” a minimum of once per week. Participation can take place on the discussion board, a chat session, email, or correspondence with the instructor.
- Students are required to be active, professional participants in the teaching and learning process. While the instructor realizes that distance learning allows students to work around their schedule, logging in and completing all the discussions and activities on the final day of the module will not be considered “professional participation”. During the semester, students should participate at least three times on the weekly discussion board by responding to the initial question and then replying to two other student’s comments with quality responses.

Evaluation Criteria

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Assignment 1</td>
<td>10%</td>
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<td>Assignment 2</td>
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<td>Assignment 3</td>
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<tr>
<td>Assignment 4</td>
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<tr>
<td>Course</td>
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<tr>
<td>Project</td>
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<tr>
<td>Mid-term</td>
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<tr>
<td>Final exam</td>
<td>20%</td>
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<td>Total</td>
<td>100%</td>
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Grading Scale
• A 100-point grading scale will be used:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
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<tbody>
<tr>
<td>90-100</td>
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<td>80-89</td>
<td>B</td>
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<td>70-79</td>
<td>C</td>
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<tr>
<td>60-69</td>
<td>D</td>
</tr>
<tr>
<td>0-60</td>
<td>F</td>
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</tbody>
</table>

Research Paper Guidelines:

The objective of the term project is to train students to think independently to develop a project report based on industrial problems and practices. Student should gather knowledge from this course and find a problem related to industrial an application such as industrial production, inventory control, aggregate planning, MRP, lean/JIT and scheduling/planning to develop a project. After defining the problem, a student should collect information about the related problem and the corresponding solution approaches. Student then apply this knowledge about the tools and techniques to solve the problem (originally chosen by the student), and develop a project report by the end of the semester.

• All submissions required for term project or research paper must be in Word format.
• Term project / research paper are submitted by a group of one or two person(s).
• Student’s names shown as the last name, first name, MI should appear in the cover page.

Academic Integrity

All students at the University of Southern Mississippi are expected to demonstrate the highest levels of academic integrity in all that they do. Forms of academic dishonesty include (but are not limited to):
• Cheating (including copying from others’ work)
• Plagiarism (representing another person’s words or ideas as your own; failure to properly cite the source of your information, argument, or concepts)
• Falsification of documents
• Disclosure of test or other assignment content to another student
• Submission of the same paper or other assignment to more than one class without the explicit approval of all faculty members’ involved
• Unauthorized academic collaboration with others
• Conspiracy to engage in academic misconduct
Engaging in any of these behaviors or supporting others who do so will result in academic penalties and/or other sanctions. If a faculty member determines that a student has violated our Academic Integrity Policy, sanctions ranging from resubmission of work to course failure may occur, including the possibility of receiving a grade of “XF” for the course, which will be on the student’s transcript with the notation “Failure due to academic misconduct.” For more details, please see the University’s Academic Integrity Policy: https://www.usm.edu/institutional-policies/policy-acaf-pro-012 Note that repeated acts of academic misconduct will lead to expulsion from the University.

ADA Policy – (Pick one of these).

ADA Syllabus Statement for the Hattiesburg Campus

If a student has a disability that qualifies under the American with Disabilities Act (ADA) and requires accommodations, he/she should contact the Office for Disability Accommodations (ODA) for information on appropriate policies and procedures. Disabilities covered by ADA may include learning, psychiatric, physical disabilities, or chronic health disorders. Students can contact ODA if they are not certain whether a medical condition/disability qualifies.

Address:
The University of Southern Mississippi
Office for Disability Accommodations
118 College Drive # 8586
Hattiesburg, MS 39406-0001

Voice Telephone: (601) 266-5024 or (228) 214-3232 Fax: (601) 266-6035

Individuals with hearing impairments can contact ODA using the Mississippi Relay Service at 1-800-582-2233 (TTY) or email Suzy Hebert at Suzanne.Hebert@usm.edu.

ADA Syllabus Statement for the Gulf Coast Campus

If a student has a disability that qualifies under the American with Disabilities Act (ADA) and requires accommodations, he/she should contact the Office for Disability Accommodations (ODA) for information on appropriate policies and procedures. Disabilities covered by ADA may include learning, psychiatric, physical disabilities, or chronic health disorders. Students can contact ODA if they are not certain whether a medical condition/disability qualifies.

Address:
The University of Southern Mississippi on the Gulf Coast
Office for Disability Accommodations
730 East Beach Blvd
Long Beach, MS 39560

Voice Telephone: (601) 266-5024 or (228) 214-3232 Fax: (601) 266-6035

Individuals with hearing impairments can contact ODA using the Mississippi Relay Service at 1-800-582-2233 (TTY) or email Suzy Hebert at Suzanne.Hebert@usm.edu.
## Class Schedule*

<table>
<thead>
<tr>
<th>Week</th>
<th>Module#/Lecture Topic</th>
<th>Readings</th>
<th>Study Questions/ Assignments</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1- Introduction to Production Control</td>
<td>Chapter 1</td>
<td>p. 47-48, even # questions 2 thru 14</td>
<td>8/24</td>
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<tr>
<td>2</td>
<td>2- Inventory Control: From EOQ to ROP</td>
<td>Chapter 2</td>
<td>p. 107-108, even #, Assignment 1</td>
<td>8/31</td>
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<tr>
<td>3</td>
<td>3- The MRP Crusade</td>
<td>Chapter 3</td>
<td>p. 150, even #, p. 151, problem 2</td>
<td>9/07</td>
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<tr>
<td>4</td>
<td>4- Capacity planning (Decision Theory)</td>
<td>Chapter 3</td>
<td>Assignment 2</td>
<td>9/14</td>
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<tr>
<td>5</td>
<td>5- Kanban System</td>
<td>Ch. 4 &amp; handouts</td>
<td>p. 174, even # 2-20</td>
<td>9/21</td>
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<td>6</td>
<td>6- Just in Time (JIT) / Lean operations</td>
<td>Ch. 4 &amp; handouts</td>
<td>p. 174, even # 2-20</td>
<td>9/28</td>
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<tr>
<td>7</td>
<td>7- What Went Wrong?</td>
<td>Ch. 5</td>
<td>p. 192-193, even #, Assignment 3</td>
<td>10/05</td>
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<td>8</td>
<td>Midterm Exam</td>
<td>Modules 1 thru 6</td>
<td></td>
<td>10/12</td>
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<tr>
<td>9</td>
<td>8- Basic forecasting methods</td>
<td>Chapter 13</td>
<td>p. 475, even numbers</td>
<td>10/19</td>
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<tr>
<td>10</td>
<td>9- Aggregate planning, Multi-product system (handout)</td>
<td>Chapter 13</td>
<td>Assignment 4</td>
<td>10/26</td>
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<td>11</td>
<td>10-Design of Work Systems</td>
<td>Chapter 14</td>
<td>p. 513, even # 2-10</td>
<td>11/02</td>
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<td>12</td>
<td>11-Production Scheduling</td>
<td>Chapter 15</td>
<td>p. 549-550, even # 2-12</td>
<td>11/09</td>
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<td>13</td>
<td>12-Aggregate and Workforce Planning</td>
<td>Chapter 16</td>
<td>p. 596, # 2 &amp; 4</td>
<td>11/16</td>
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<td>14</td>
<td>13- Supply chain management</td>
<td>Chapter 17</td>
<td>p. 645 even #</td>
<td>11/30</td>
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<tr>
<td>15</td>
<td><strong>Final Project Due</strong></td>
<td>Project</td>
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<td>11/30</td>
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<tr>
<td></td>
<td><strong>Final Examination</strong></td>
<td><strong>Final Exam</strong></td>
<td></td>
<td>12/07</td>
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*Schedule may be revised if necessary. Students will be notified if this is the case.*