MISSISSIPPI STATE UNIVERSITY COLLEGE OF EDUCATION
DEPARTMENT of INSTRUCTIONAL SYSTEMS and WORKFORCE DEVELOPMENT

Course Prefix and Number: INDT 3373
Course Title: Forecasting & Cost Modeling
Credit Hours: 3 credit hours
Method of Instruction: Lecture (UCCC Code C)

Catalogue Description: (Prerequisite: BQA 2113 & INDT3363). Three-hour lecture. Use of the higher functions of spreadsheet software to undertake costing of manufacturing process routes and to forecast changes in manufacturing scenarios.

Course Objectives
Upon completion of the course, the student will be able to:

1. Apply both costing and forecasting manufacturing/production decisions. (CFPO 1, 3, 4, 5, 6, 9, 10)
2. Interpret how Excel can be employed in the interrogation of production data to allow for "what if?" scenarios to be examined. (CFPO 1, 3, 4, 5, 6, 9, 10)
3. Create macros and graphical user interfaces (GUI's). (CFPO 1, 3, 4, 5, 6, 9, 10)
4. Create cost models that can determine both design and manufacturing decisions based on cost. (CFPO 1, 3, 4, 5, 6, 9, 10)

Topics Covered in the Course: ***45 hours***

Content Area	Lecture Hours
1. Creating a Worksheet and a Chart	(3 Contact Hours)
2. Formulas, Functions, and Formatting	(3 Contact Hours)
3. Working with Large Worksheets, Charting, and What-If Analysis	(3 Contact Hours)
4. Financial Functions, Data Tables, and Amortization Schedules	(3 Contact Hours)
5. Working with Multiple Worksheets and Workbooks	(3 Contact Hours)
6. Creating, Sorting, and Querying a Table	(3 Contact Hours)
7. Creating Templates, Importing Data, and Working with Smart Art, Images, and Screen Shots	(3 Contact Hours)
8. Working with Trend Lines, Pivot Table Reports, and Slicers	(3 Contact Hours)
9. Formula Auditing, Data Validation, and Complex Problem Solving	(5 Contact Hours)
a) Formula Auditing	(1 Hour)
b) Solving complex problems	(2 Hours)
c) Using scenarios and scenario manager to analyze data	(2 Hours)
10. Data Analysis with Power Tools and Creating Macros	(3 Contact Hours)
11. User Interfaces, Visual Basic for Applications, and Collaboration Features	(3 Contact Hours)
12. Cost Modeling	(10 Contact Hours)
a) What is cost modeling	(3 Hours)
c) Construction of cost model	(7 Hours)
i. Determination of Customer Requirements	(1 Hour)
ii. Development of Variables and Database	(2 Hours)
iii. Development of Cost Model from Time Sheet	(2 Hours)
iv. Final Integration of HMI, Database, Model and Time Sheet	(2 Hours)

Text(s)
Freund, S.M., Starks, J.L., & Schmieder, E.J., (2016). *Microsoft Excel 2016: Comprehensive*. Cengage Learning. Boston, MA.

Description of Instruction
(Campus 1) Lecture. (UCCC Code C) The class will be a combination of interactive lectures and class discussions combined with laboratory exercises and simulations.

(Campus 5) Lecture. (UCCC Code C) The class will be a combination of online lectures, discussion boards, combined with at home laboratory exercises and simulations.

Honor Code
(Campus 1 and 5) Mississippi State University has an approved Honor Code that applies to all students. The code is as follows:

"As a Mississippi State University student I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will I accept the actions of those who do."

Upon accepting admission to Mississippi State University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor Code. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the MSU community from the requirements or the processes of the Honor Code.
For additional information visit: http://www.honorcode.msstate.edu

(Campus 5 specifically) Online tests will be administered with random ordered questions. All written assignments must be submitted through Turnitin.

Technology
(Campus 1) Lectures will be given via PowerPoint presentations, which will be available on Canvas. All exams, quizzes, and assignment will be on Canvas unless an in-class assignment/quiz is given, which will be announced. Assignments will be undertaken using the suite of tools available in Microsoft Office. Students are responsible for having access to the Internet for accessing Canvas, and Microsoft Office.

(Campus 5) Lectures will be given via voiced over Microsoft Excel Video Presentations, which will be available on Canvas. All exams, quizzes, and assignments will be on Canvas. Assignments will be undertaken using the suite of tools available in Microsoft Office. Students are responsible for having access to the Internet for accessing Canvas, and Microsoft Office.

Diversity
Cultural diversity will be encouraged through group activities in this course.

Accommodations for Students with Disabilities
Students with disabilities in need of accommodations to meet the expectations of this course are encouraged to bring this need to the attention of the instructor and should register with the Office of Student Support Services as soon as possible. The Office of Student & Disability Support Services is located in 01 Montgomery Hall, (662) 325-3335 (phone), and http://www.sss.msstate.edu

Field Component:
There is no field component for this course.

University Safety Statement:
Mississippi State University values the safety of all campus community members. Students are encouraged to register for Maroon Alert texts and to download the Everbridge App. Visit the Personal Information section in Banner on your mystate portal to register. To report suspicious activity or to request a courtesy escort via Safe Walk, call University Police at 662-325-2121, or in case of emergency, call 911. For more information regarding safety and to view available training resources, including helpful videos, visit ready.msstate.edu.

Evaluation of Student Progress
Student progress will be measured as follows:

Student Activities/Assignments:
Quizzes: Quizzes will be scheduled during the course. These exams will be averaged and will constitute 40% of the final grade. Quizzes will be given through Canvas, unless announced. Quizzes will contain questions covering knowledge and understanding of the material, as well as explanation of this knowledge. Questions may be taken from the text, lecture materials, laboratory experiments, supplementary materials (handouts and /or readings), and from instructor demonstrations. The format of the quizzes will vary according to the nature of the covered material. (Objectives: 1)

Assignments: Assignments will be given throughout the semester. These assignments will cover both the work undertaken in class and from the supplementary readings. Assignments will constitute 40% of the final grade. (Objectives: 2, 3)

Students will also be expected to complete a final project, which will cover the topic areas in the course. This project will constitute 20% of the final grade. The final project will the creation of a cost model based on both the design and the time study employed in the manufacture of a component. (Objectives: 3, 4)

Evaluation Weights:

Quizzes	40%
Assignments	40%
Final Project	20%
Total	100%

Grading Scale: The following is the grading scale for this course.

Letter Grade	Percentage
A	90.00% or higher
B	80.00% - 89.99%
C	70.00% - 79.99%
D	60.00% - 69.99%
F	59.99% or lower

Attendance Policy:
In accordance with university policy (AOP 12.09), students should attend all classes. When an absence from class is essential, the student must inform the instructor via email, before the absence if possible, and provide appropriate documentation.

An excused absence is defined by AOP 12.09. http://www.policies.msstate.edu/policypdfs/1209.pdf

Campus 1 Face-to-Face
Role will be taken at the beginning of each class meeting. **If you are not present when the role is taken you will be counted absent.**

If a student misses more than three (3) classes with unexcused absences, you will have 10% deducted from your final grade.

Campus: 5 Distance
This class is in an **online format.** Attendance will be determined through the regular opening of lectures, quizzes and assignments, as well as the timeliness of quiz and assignment submission. If you do not open the lecture during the week it is released, or submit quizzes and assignments on time more than five (5) times during the semester, you will have 10% deducted from your final grade.

Title IX
MSU is committed to complying with Title IX, a federal law that prohibits discrimination, including violence and harassment, based on sex. This means that MSU's educational programs and activities must be free from sex discrimination, sexual harassment, and other forms of sexual misconduct. If you or someone you know has experienced sex discrimination, sexual violence and/or harassment by any member of the university community, you are encouraged to report the conduct to MSU's Director of Title IX/EEO Programs at 325 8124 or by e-mail to titleix@msstate.edu Additional resources are available at http://www.msstate.edu/web/security/title9-12.pdf , or at http://students.msstate.edu/sexualmisconduct/

Bibliography:

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Kim, H. J., Seo, Y. C., & Hyun, C. T. (2012). A hybrid conceptual cost estimating model for large building projects. *Automation in Construction*, *25*, 72-81.

Roy, R., Souchoroukov, P., & Shehab, E. (2011). Detailed cost estimating in the automotive industry: Data and information requirements. *International Journal of Production Economics*, *133*(2), 694-707.

Datta, P. P., & Roy, R. (2010). Cost modelling techniques for availability type service support contracts: a literature review and empirical study. *CIRP Journal of Manufacturing Science and Technology*, *3*(2), 142-157.

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Johnson, M. D., & Kirchain, R. E. (2011). The importance of product development cycle time and cost in the development of product families. *Journal of Engineering Design*, *22*(2), 87-112.