Bossier Parish Community College
Master Syllabus

Course Prefix and Number: AMFG 100 **Credit hours**: 3-2-1

Course Title: Introduction to Manufacturing

Course Prerequisites: MATH 098

Textbook(s): None

Course Description: An overview of the functional and structural compositions of manufacturing; including processes, plant safety, and quality in the manufacturing environment. Presents the personal and interpersonal skills required to be part of a high performing team in a manufacturing environment. Topics include team building, effective communication skills, and ethics in the workplace.

Learning Outcomes:
At the end of the course, the student will:

A. demonstrate understanding of basic manufacturing terms;
B. illustrate how automation and technology influences manufacturing;
C. describe the importance of how the general safety culture impacts the manufacturing environment and show how awareness, attitude, and behavior impact the safety culture;
D. show the importance of quality and ethics in the manufacturing environment; and
E. apply the concepts, principles, and tools used in Lean manufacturing to identify and reduce waste in the workplace and explain why high performing teams are important in a manufacturing environment.

To achieve the learning outcomes, the student will or will be able to:
(The letter designations at the end of each statement refer to the learning outcome(s).)

1. describe the various terms used in the machining process; (A)
2. describe the various terms used in the assembly process; (A)
3. describe the various terms used in the fabricating process; (A)
4. describe the various terms used to describe forming operations; (A)
5. compare and contrast continuous processes and batch processes; (A)
6. describe the basic concepts of Just in Time manufacturing; (B)
7. discuss the advantages of using Pull rather than Push systems to schedule production; (B)
8. explain how technology can be used to shorten the lag time between order and delivery of the product; (B)
9. expound on the benefits of reducing inventory in finished goods, work in process and raw materials; (B)
10. explain automation's positive impact on a manufacturing environment; (B)
11. illustrate how automation and technology influences manufacturing; (B)
12. describe the economic impact of automatic controls for distribution systems; (B)
13. list advantages for production when utilizing Programmable Logic Controllers; (B)

14. contrast the machining operation using a live machinist as opposed to a NC operated machining center; (C)
15. discuss the benefits of using automated equipment for lifting and placing heavy loads as opposed to live operators; (C)
16. describe the importance of how the general safety culture impacts the manufacturing environment; (C)
17. discuss the reasons for machine guarding and Lockout/Tagout rules; (C)
18. discuss the requirements for identifying and safely handling chemicals in the workplace; (C)
19. show how awareness, attitude, and behavior impact the safety culture; (C)
20. discuss Safety attitudes toward safety policies and programs such as chemical labeling, Lockout/Tagout, grounding etc.; (C)
21. show how following (behavior) safety rules can prevent accidents (i.e. Lockout/Tagout, Grounding, GFCI use, Chemical Labeling, Fire and Electrical Safety); (C)
22. show the importance of quality in the manufacturing environment; (D)
23. define the concept of quality from the customer viewpoint; (D)
24. describe the attributes which define product quality; (D)
25. discuss the various roles and responsibilities for product quality; (D)
26. discuss methods to sample and measure quality in the manufacturing process; (D)
27. describe the importance of positive values and ethics in the workplace; (D)
28. discuss company values and why these values were chosen; (D)
29. define ethics and how ethics and our actions/behavior are impacted by our values; (D)
30. apply the concepts, principles, and tools used in Lean manufacturing to identify and reduce waste in the workplace; (E)
31. describe the purpose and benefits of implementing Lean Manufacturing in the manufacturing workplace; (E)
32. discuss the various Lean Tools available to reduce waste in the manufacturing environment; (E)
33. explain why high performing teams are important in a manufacturing environment; (E)
34. identify challenges individuals face when working as a team; (E)
35. apply the team building concepts and skills needed to be a high performing team; (E)
36. identify characteristics of successful High Performance Teams; (E)
37. identify the basic components of effective communication; (E) and
38. discuss the different ways individuals communicate today, and what mediums are used to communicate. (E)

Course Requirements: Complete all homework assignments, in-class equipment exercises, in class tests, and final exam.

Course Grading Scale:

90 – 100 = A
80 – 89 = B
70 – 79 = C
60 – 69 = D
0 – 59 = F

Attendance Policy: The college attendance policy is available at http://www.bpcc.edu/catalog/current/academicpolicies.html

Course Fees: This course is accompanied with an additional non-refundable fee for supplemental materials, laboratory supplies, software licenses, certification exams and/or clinical fees.

Nondiscrimination Statement: Bossier Parish Community College does not discriminate on the basis of race, color, national origin, gender, age, religion, qualified disability, marital status, veteran's status, or sexual orientation in admission to its programs, services, or activities, in access to them, in treatment of individuals, or in any aspect of its operations. Bossier Parish Community College does not discriminate in its hiring or employment practices.

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