Addis Ababa University
Addis Ababa Institute of Technology
School of Mechanical and Industrial Engineering
Production and Operation Management (POM)
Assignments and projects on POM
By: Kassu Jilcha (PhD), March, 2019/20

Assignment 1: Chapter Works and Module preparation

s/n	Chapters	Students Name
1	**Chapter one:** **– Introduction: Operations Planning Concepts** 1.1. Introduction, 1.2. Operations Functions in Organizations, 1.3. Historical development, 1.4. Framework for managing operations, 1.5. The trend: Information and Non-manufacturing systems, 1.6. Operations management, 1.7. Factors affecting productivity, 1.8. International dimensions of productivity, 1.9. The environment of operations, 1.10. Production systems decisions-a look ahead. 1.11. Application areas of EEM 1.12. Solved Examples 1.13. Exercises 1.14. Case studies in context of Ethiopia 1.15. References	
2	**Chapter Two:** **OPERATIONS DECISION MAKING** 2.1. Introduction, 2.2. Management as science, 2.3. Characteristics of decisions, 2.4. Framework for decision making, 2.5. Decision methodology, 2.6. Decision Tree System Design and Capacity: 2.7. Introduction, 2.8. Manufacturing and service systems, 2.9. Design problems, 2.10. Economic models-Break Analysis in operations, 2.11. P/V ratio, 2.12. Statistical models 2.13. Solved Examples 2.14. Exercises 2.15. Case studies in context of Ethiopia 2.16. References	
3	**Chapter Three:** **FORECASTINGDEMAND** 3.1. Forecasting objectives and uses, 3.2. Forecasting variables, 3.3. Opinion and judgmental methods, 3.4. Time series methods, 3.5. Moving average methods, 3.6. Exponential smoothing techniques, 3.7. Trend adjusted exponential smoothing, 3.8. Regression and correlation methods, 3.9. Application and control of forecast, MEAN, absolute deviation, BIAS, Tracking signal	

	3.10. Solved Examples 3.11. Exercises 3.12. Case studies in context of Ethiopia 3.13. References	
4	**Chapter Four:** **Aggregate planning and master scheduling** 4.1.Introduction 4.2.Planning and Scheduling, 4.3.Objectives of Aggregate Planning, 4.4.Three Pure strategies 4.5. Aggregate Planning Methods, 4.6.Master scheduling Objectives, 4.7. Master Scheduling Methods 4.8.Solved Examples 4.9.Exercises 4.10.Case studies in context of Ethiopia 4.11.References	
5	**Chapter Five:** **Material and Capacity Requirements Planning** 5.1.Overview 5.2. MRP and CRP, 5.3. MRP: 5.4.Underlying concepts, 5.5.System parameters, 5.6.MRP logic, 5.7. System refinements, 5.8. Capacity management, 5.9.CRP activities 5.10. Solved Examples 5.11. Exercises 5.12. Case studies in context of Ethiopia 5.13. References	
6	**Chapter Six:** **Scheduling and Control of Production Activities** 6.1.Introduction to PAC objective and data requirement, 6.2. Loading –Finite and Infinite scheduling methodology, 6.3. Priority sequencing, capacity control, 6.4.Single Machine Loading: 6.5.Concept and measure of performance, 6.6. SPT rule, 6.7.Weighted SPT rule, 6.8.EDD rule 6.9.Flow Shop Scheduling: 6.10. Introduction, 6.11. Johnson's rule for 'n' jobs on 2 and 3 machines, 6.12. CDS heuristic 6.13.Job Shop Scheduling: 6.14. Types of schedules, 6.15.Heuristic procedure and scheduling 2 jobson 'm' machines 6.16. Solved Examples 6.17. Exercises 6.18.Case studies in context of Ethiopia 6.19.References	

Note on Module preparation

Contents of the chapter in addition to the above contents

1. Introduction
2. Objectives
3. Application areas
4. Referencing of all the sources
5. Mathematical modeling like formula
6. Figures, tables and illustrative examples in each subheading
7. Conclusion
8. Each chapter should not be less than 50 pages

Assignment 2

a. **Article Review Assignment**

b. Article Review using the guideline and solution

Assignment 3:

a. Article and Term Paper preparation and write up

b. Use a guideline included with this assignment

c. Select any topic with case company and write an article based on HFE

Submission date:

May 10/2020 up-to 5:00PM