Program of Industrial Engineering,
Department of Mechanical Engineering
School of Engineering,
University of Management and Technology

Course Outline

Course code: IE-223 Course title: Work Study & Methods Engineering

Program	BSIE
Credit Hours	2
Duration	One semester (Spring 2024)
Prerequisites	Nil
Resource Person	Syed Rehan Ashraf
Counseling Timing	Mon, Thursday, and Friday 2:00 ~ 4:30 PM Wed 9:30 ~ 12:00 PM
Contacts	Room # SEN 303/06 email: rehan.ashraf@umt.edu.pk Contact number (042) 35212801, Ext: 3687

Chairman/Director signature…….

Dean's signature……

Date…….

Course Learning Outcomes:

At the end of the course students should be able to:

1. Explain the basic concepts of productivity associated with time & motion study. C2
2. Apply different types of engineering tools for method/job analysis and improvement. C3
3. Develop time standards for a given job by using work measurement techniques.C3

Course Learning Outcomes (CLOs) Mapping with Program Learning Outcomes (PLOs):

Semester	Course Code	Title	Course Learning Outcomes	PLO 1 Engg. Knowledge	PLO 2 Problem Analysis	PLO 3 Solution Design	PLO 4 Investigation	PLO 5 Mod. Tool Usage	PLO 6 Engr. & Society	PLO 7 Env. &Sust.	PLO 8 Ethics	PLO 9 Team Work	PLO 10 Communication	PLO 11 Proj. Mgmt.	PLO 12 Lifelong Learning
Fourth	IE 223	Work Study & Methods Engineering	1. Explain the basic concepts of productivity associated with time & motion study. C2	✓											
			2. Apply different types of engineering tools for method/job analysis and improvement. C3		✓										
			3. 1. Develop time standards for a given job by using work measurement techniques.C3				✓								

Learning Methodology:

Classroom lectures, problem solving exercises, tutorials and Class Notes.

Grade Evaluation Criteria

Components	Marks
Quizzes 4(Average)	15
Assignments 2	10
Mid Term Exam	25
Final Exam	50
Total	100

Text books:

1. Motion and Time Study Design and Measurement of Work by Ralph M. Barnes.

Reference Books:

2. Niebel's Methods, Standards, and Work Design by Andris Freivalds and Benjamin W. Niebel.
3. Motion and Time Study by Benjamin W. Niebel, McGraw-Hill 9th edition. **

Calendar of Course Contents

Course code: IE 223 Course title: Work Study & Methods Engineering

Weeks	Course Contents	Reference Chapter(s)	CLOs
0.5	Productivity	1*	1
0.5	Definition and Scope of Motion and Time Study	2*	1
1	History of Motion and Time Study	3*	1
1	Process Analysis	7*	2
1	Activity Charts	8*	2
0.5	Operation Analysis	9*	2
0.5	Micromotion Study	10*	2
1	Fundamental Hand Motions	11, 14*	2
1	Principles of Motion Economy	15,16,17*	2
	Mid Term		
1	Time Study	10**	3
2	Performance rating and allowance	11**	3
2	Standard Data	12**	3
1	Predetermined Time Systems	13**	3
1	Work Sampling	14**	3
Final Term			

Note:

- * Motion and Time Study Design and Measurement of Work by Ralph M. Barnes.
- ** Niebel's Methods, Standards, and Work Design by Andris Freivalds and Benjamin W. Niebel.

Mapping of CLOs to Direct Assessments

CLOs▼	Quiz 1	Quiz 2	Quiz 3	Quiz 4	Assignment 1	Assignment 2	Midterm Exam	Final Exam
1	✓						✓	✓
2		✓		✓	✓		✓	✓
3			✓			✓		✓

Tentative