

## GAU, Faculty of Engineering

<b>Course Unit Title</b>	Fundamentals of Work Study	
<b>Course Unit Code</b>	IE 303	
<b>Type of Course Unit</b>	Compulsory	
<b>Level of Course Unit</b>	3rd Year BSc	
<b>National Credits</b>	3	
<b>Number of ECTS Credits Allocated</b>	7	
<b>Theoretical (hour/week)</b>	3	
<b>Practice (hour/week)</b>	0	
<b>Laboratory (hour/week)</b>	0	
<b>Year of Study</b>	3	
<b>Semester when the course unit is delivered</b>	5	
<b>Mode of Delivery</b>	Face to Face, Class discussions, Lab Support	
<b>Language of Instruction</b>	English	
<b>Prerequisites and co-requisites</b>	-	
<b>Recommended Optional Programme Components</b>	-	
<b>Objectives of the Course:</b>		
<ul style="list-style-type: none"> <li>➤ Charting techniques</li> <li>➤ Motion economy principles</li> <li>➤ Application of time study techniques to various kinds of tasks</li> <li>➤ Standard Time calculations</li> </ul>		
<b>Learning Outcomes</b>		
When this course has been completed the student should be able to		Assesment.
1	Understand the importance of work study	1,2
2	Understand method study	1,2
3	Apply motion study techniques	1,3,4,5
4	Design improved processes	1,3,4,5
5	Apply time study techniques and determine standard time.	1,3,4,5
Assesment Methods: 1. Written Exam, 2. Assignment 3. Project/Report, 4.Presentation, 5 Lab. Work		
<b>Course's Contribution to Program</b>		
		<b>CL</b>
1	Ability to understand and apply knowledge of mathematics, science, and engineering	3
2	Ability to design and conduct experiments as well as to analyze and interpret data	3
3	Ability to work in multidisciplinary teams while exhibiting professional responsibility and ethical conduct	5
4	Ability to apply systems thinking in problem solving and system design	5
5	Knowledge of contemporary issues while continuing to engage in lifelong learning	4
6	Ability to use the techniques, skills and modern engineering tools necessary for engineering practice	4
7	Ability to express their ideas and findings, in written and oral form	5
8	Ability to design and integrate systems, components or processes to meet desired needs within realistic constraints	5
9	Ability to approach engineering problems and effects of their possible solutions within a well structured, ethically responsible and professional manner	3
10	Ability to design systems, processes or products by applying modern methods of work study, ergonomics, production systems and simulation while fulfilling requirements under realistic conditions	5
11	Ability to plan and improve system performance using production planning, quality planning and control, information system design and project planning techniques	3
CL: Contribution Level (1: Very Low, 2: Low, 3: Moderate 4: High, 5:Very High)		

<b>Course Contents</b>			
Week			Exams
1	Chapter 1	Work Study Fundamentals	
2	Chapter 2	Work Study Fundamentals	
3	Chapter 3,4,5	Process Analysis, Activity Charts	
4	Chapter 7	Process Analysis, Activity Charts	
5	Chapter 8	Process Analysis, Activity Charts	
6	Chapter 9	Process Analysis, Activity Charts	
7	Chapter 9	Work Methods Design	
8			Midterm
9	Chapter 10	Work Methods Design	
10		Operations Analysis	
11	Chapter 11	Fundamental Hand Motions	
12	Chapter	Time Study	Quiz
13		Time Study	
14		Time Study	
15			Final
<b>Recommended Sources</b>			
<p><b>Textbook:</b> 1 .R. M. Barnes, Motion and Time Study: Design and Measurement of Work, 1980, John Wiley and Sons.  2. R. S. Bridger, Introduction to Ergonomics, 2000, McGraw-Hill International Editions.</p>			
<b>Assessment</b>			
Attendance	5%		
Assignments	5%		
Midterm Exam (Written)	25%		
Quiz (Written)	10%		
Project Report&Presentation	20%		
Final Exam (Written)	35%		
Total	100%		
<b>ECTS Allocated Based on the Student Workload</b>			
Activities	Number	Duration (hour)	Total Workload(hour)
Course duration in class (including the Exam week)	15	3	45
Labs and Tutorials	-	-	-
Assignments	5	4	20
Project/Presentation/Report Writing	2	20	40
E-learning Activities	-	-	-
Quizzes	1	10	10
Midterm Examination	1	25	25
Final Examination	1	35	35
Self Study	14	3	42
Total Workload			217
Total Workload/30 (h)			7.2
ECTS Credit of the Course			7