Oyama College		Year	2022		Course Title	Manufacturing Systems Engineering

Course Information

Course Code	0005		Course Category	Specialized / Elective
Class Format	Lecture		Credits	Academic Credit: 2
Department	Advanced Course of Mechanical Engineering		Student Grade	Adv. 1st
Term	Second Semester		Classes per Week	2
Textbook and/or Teaching Materials				
Instructor	KAWAMURA Takashi			

Course Objectives

1. Learn the basics of production system engineering and gain a deeper understanding through exercises.
2. You can understand the concept of optimization design of production system and learn more application examples.
3. Understand the concept of production planning, design, development, operation, evaluation, etc. systematically.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	1. Learn production system engineering and gain a deeper understanding of production planning systems through exercises.	1. Learn production system engineering and understand production systems through exercises.	1. Learn production system engineering and cannot understand production system through exercises.
Achievement 2	2. Understand the concept of optimized design of production systems, and understand application examples.	2. Understand the concept of optimized design of production system.	2. I can't understand the concept of optimized design of production system.
Achievement 3	3. Understand the concept of production planning, design, development, operation, evaluation, etc. systematically.	3. Understand the concept of production planning, design, development, operation, evaluation, etc.	3. I can't understand the concept of production planning, design, development, operation, evaluation, etc.

Assigned Department Objectives

学習・教育到達度目標 ④
JABEE (A) JABEE (d-1) JABEE (g)

Teaching Method

Outline	In this class, you will learn about the contents of the production system, which is important for production activities in factories. In addition, the content will utilize the practical experience of the faculty members who were in charge of production technology at the LSI manufacturing factory.
Style	Lectures, reports (timely), regular exams
Notice	Only scientific calculators can be brought in for the test. Textbooks, reference books, notebooks, memos, etc. cannot be brought in.

Characteristics of Class / Division in Learning

☐ Active Learning	☐ Aided by ICT	☐ Applicable to Remote Class	☑ Instructor Professionally Experienced

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Production system engineering	Understand production system engineering
		2nd	Ordering, production schedule, Johnson method	Understand ordering etc.
		3rd	Ordering, dispatching rules, Gantt charts	Understand Gantt charts, etc.
		4th	Production forecast, PERT, critical path	Understand production forecasts, etc.
		5th	Production forecast, input-output analysis	Understand input-output analysis, etc.
		6th	System planning, pre-evaluation, manufacturing control	Understand system planning, etc.
		7th	Meeting theory, input-output analysis, quality control	Understand quality control, etc.
		8th	Meeting theory, production forecasting, game theory	Understand meeting theory, etc.
	4th Quarter	9th	Production planning, game theory, mixed strategy, Nash equilibrium	Understand production planning, etc.
		10th	Production planning, production control system	Understand the production control system, etc.
		11th	Optimal process planning, process control, QCD	Understand the optimal process plan, etc.
		12th	Reliability design, process control, 5S	Understand reliability design, etc.
		13th	Manufacturing lead time, QC activities	Understand manufacturing lead time, etc.
		14th	Seven tools for QC activities and new QC	Understand QC activities, etc.
		15th	Final exam	
		16th		

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total

Subtotal	0	0	0	0	0	0
Basic Proficiency	0	0	0	0	0	0
Specialized Proficiency	0	0	0	0	0	0
Cross Area Proficiency	0	0	0	0	0	0