



Department of Aviation Engineering

College of ...Engineering....

University of Salahaddin....

Subject: Philosophy of Sustainable Development

Course Book 1st year

Lecturer's name: Maikey Zaki Bia Khorani

Academic Year: 2022/2023

Introduction

Competence-Based Education (CBE)



Competency-based education is the pedagogical approach base on the student about how to master their skills, also for designing an academic program, which concentrates on competences (knowledge, skill, attitude), it clearly identifies the competencies that the student must manage, as it is an approach to teaching-learning. As with the promise of serving the students better it has increased employment. competency-based is long-lasting and transformative for education. CBE core is the student-centered learning approach, it might be a course or credit-based or not. This method meets different learning abilities and will lead to an efficient student learning outcome. CBE is a system when the learner goes to the learning process and learner can say what they can do in this learning process, we need need to change the education system as the technology changes and to integrate these changes we need to equip skills to help the society, and economy to be able to compete with others because without a good education we can not afford all of these. Some characteristics of CBE are competency-based program, producing proficient and prepared graduates, increasing student engagement, and exploring diverse learning opportunities.

To try to reflect on the possibility of applying this type of education in Kurdistan; Competency-based education is likely to be long lasting and transformative for the education in Kurdistan, as to apply the CBE in Kurdistan; we need the quality of CBE which can be satisfied in multiple ways; Workforce partners, good subjects which must be included in the competency in the faculties, cooperation with industries and foreign companies to establish good roots with sustainability to long-lasting projects.

The main challenges if this system can be applied in Kurdistan can be identified from different perspectives; first and foremost to include different criteria such as the program mission, working life, very productive curriculum, using relevant pedagogical methods, guidelines to the study for the students, assessment, all these lead to best learning outcome and competences, and if CBE will be applied in Kurdistan, there should be multiple changes, and as a teacher, we always think to improve the learning experience of the students that learn in the schools, and universities; This will prepare the students for the next stage of their life. The students must be given the support they need to master the subject and inherent skills, and this will make the students in Kurdistan moving forward based on what they are capable of, and the lead to the best learning outcome and competencies which should be proven by action. We should start to do the grading based on the performance of each student without any bias. One of the important changes is to apply more core applied subjects in the universities rather than the general subjects, cooperating with industries for the scientific sections, and while in the literature to cooperate with very famous novel



writers who have big companies and big funds, moreover with other university specialities to have contacts with similar companies. Another idea would be that the students during their studies also have a job with the same field of their studies, and learn things directly during their work as well, as well as participating in researches and development, and this can not be done without faculties instructing this by proving a good curriculum with cooperation with stakeholders with common interests.

Reflecting on the way of delivering the learning materials for the first week of this module using the same as this pedagogy course will be very beneficial, as the teachers Dr Khalil and Dr Wala were more like a facilitator to us, and this module was very well organized, as to start on with students doing presentations, and they involved all of us in it y participating, also it was very good to me to read some articles. From the beginning I learnt that; the competency-based education module is divided into three themes which are competency-based education, Bologna process, and competency-based curriculum. It was very useful to align all the references which were used in this module for us, I felt much more energetic and well prepared when I was given the content beforehand.

Competence-Based Curriculum(CBC)

The competency-based curriculum is a curriculum that is based on what the learners will do (competences) tasks rather than what the learners will be expected to know. This curriculum is learner-centred and is adaptive to the needs of students, teachers, and society

The elements and criteria of CBC are leading to the learning outcome, the first is the mission the curriculum should have a clear Mission which has sustainability, also Work relevance it should be designed based on the labour market and the skills which are needed for it, Pedagogical approach choosing the one suits the model and how choosing the right pedagogical methods e.g. seminars, problem-based learning, Guidance to the students, Assessment tools to know what kind of assessment suits this model we teach e.g. formative and summative, and Alignment which means all the criteria work together to achieve the learning outcome for all the elements mentioned above, and all elements must support each other.



Course Catalog

1- General Information

Course Title	Philosophy of Sustainable development
Course Code	9008
Department	Aviation Engineering
Prerequisites course code	
Course Coordinator	Maikey Zaki Bia Khorani
Email	maikey.bia@su.edu.krd
Other Course Teacher(s) / Tutor(s)	
Class Hours	3
Office Hours	Sunday 12:00- 14:00 (lecture 9am-12) Monday 9:00- 12:00 (lecture 12:30am- 3:30) Tuesday 9:00- 12:00 (lecture 12:30am- 3:30) Wednesday 12:00- 14:00 (lecture 9am-12) Thursday 12:00-14:00 (lecture 9am-12)
Course Type	Philosophy, Sustainable development
Offer In Academic Year	Spring Semester

<i>Course Name</i>	<i>Code</i>	<i>Regular Semester</i>
Philosophy of Sustainable Development	9008	Spring

<i>Local Credit</i>	<i>ECTS Credit</i>	<i>Lecture (hour/week)</i>	<i>Application (hour/week)</i>	<i>Laboratory (hour/week)</i>
3	3	3	3	0

Prerequisites	:	
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Course Language	:	English		
Course Level	:	Bachelor		
Course Type	:	University	Compulsory	Elective
			X	
Course Category	:	Core Courses	Major Area Courses	General Cultural Courses
			X	
Mode of Delivery	:	Face-to-face		Distance Learning
		X		
Course Coordinator	:	Maikey Zaki Bia Khorani		
Lecturer(s)	:	Maikey Zaki Bia Khorani		
Assistant(s)	:			

2- Course Description

COURSE DESCRIPTION
<p>This course Philosophy of sustainable development has a theoretical part which makes the students firstly understand and learn the theory of sustainable development and philosophy of Aviation.</p> <p>The theoretical part introduces the students to Aviation sustainability and its applications in Aviation Engineering, as it plays an important role in almost all areas of our life.</p> <p>Today, much of this information is represented and processed in Aviation and has a history and many failair which makes humans think about sustainable development in Aviation, with applications ranging from different areas and circumstances in Aviation locally and globally , from Urban to city area..</p> <p>However, this course will encourage students to understand different sustainable developments and goals in Aviation Engineering , and implementing what the students have learned in the theoretical after their carrier in Aviation is one of the main goals, to lead to the development in Aviation and provide a sustainable solution to the most failures in Aviation Engineering , and create real-life applications, and this will improve the basic foundation of students in Aviation Engineer Areas from Aviation engineering and its applications, and which they can develop their understanding about different g skills in creating safe environment for different applications in Aviation. E.g Applying those rules as well in the Aviation Laboratory.</p>



Contents and workload hours from face to face lectures

Main topics to be covered in this course are:

Salahadding University College of Engineering

ACADEMIC CALENDER

Date	PROGRAMME	Module Name and code /Content discription	Work load (hrs)
00 Feb- 00 Feb.2022		Philosophy of sustainable Development	48
Spring SEMESTER (#1)			
00 Feb 2022- 00 May 2022			
00 Feb- 00 Feb.2022	Week 1	Introduction About Philosophy of Sustainable Development	3
00 Feb- 00 Feb.2022	Week 2	AVIATION OVERVIEW	3
00 Feb- 00 Feb.2022	Week 3	AVIATION AND ENVIRONMENT	3
00 Feb- 00 Feb.2022	Week 4	ECONOMIC BENEFITS OF AVIATION	3
00 Mar- 00 Mar.2022	Week 5	AVIATION AND SOCIAL DEVELOPMENT	3
00 Mar- 00 Mar.2022	Week 6	GOVERNANCE, VISION & STRATEGY	3
00 Mar- 00 Mar.2022	Week 7	Midterm	0
00 Mar- 00 Mar.2022	Week 8	URBAN PLANNING AND DEVELOPMENT	3
00 Mar- 00 Mar.2022	Week 9	MOBILITY AND ACCESSIBILITY	3
00 Aprl- 00 Aprl.2022	Week 10	ENVIRONMENT	3
00 Aprl- 00 Aprl.2022	Week 11	ECONOMIC DEVELOPMENT & COMPETITIVENESS	3
00 Aprl- 00 Aprl.2022	Week 12	SOCIAL INCLUSION & WORKFORCE DEVELOPMENT	3
00 Aprl- 00 Aprl.2022	Week 13	MARKETING AND BRANDING	3
00 May- 00 May.2022	Week 14	Revision week & Report presentation	3
00 May- 00 May.2022	Final examination (2 Weeks)		
00 May- 00 May.2022			
00 May.-00 May.2020	Online Results		
SEMESTER BREAK (00 January -00 February 2022)			
SPRING SMASTER (00 February 2022- 00 May 2022)			



	Quiz date		
	assignment submission		

Pedagogical Methods

1. Presentation
2. Exhibits
3. Brainstorm and Practice
4. Games
5. Simulations
6. Role-playing
7. Discussion
8. Interaction
9. Modeling
10. Facilitation
11. Collaboration
12. Scientific Trips (Visiting companies with similar interests)
13. Motivation
14. Flipped classroom

Assessment

Using formative assessment, by using the survey to know the basic knowledge of students in mathematics and programming applications. Assessment for the learners before the progress of teaching, and moving to the next step.

- 4 Quizzes 5 %
- 4 Homeworks 5 %
- 1 Seminar 5 %
- 1 report 5%
- Midterm 20 %
- Final Theoretical Exam 60 %

Using summative assessment in a kind of a survey, which asks the opinions of my students about the lecture. And in their ideas about improving the course for better.



<i>ECTS</i>
Image processing has 3 ECTS

Salahaddin University Erbil College of Engineering					
Program: Diploma (ECTS)					
Total No. of Weeks/Semester:		14 weeks			
Department name:	Aviation Engineering		X	Y	Z
Module Name:	Philosophy of sustainable Development		3	0	0
Module Code:					

ECTS Workload Calculation Form							
Activity	S	Description		Activity Type	No.	Time Factor	Workload
Course	1	Theory	In class	f	<u>14</u>	3	42
	2		Online	f			0
	3	Preparation (1.5 theory)		h	<u>4</u>	4.5	18
	4	Practical		f	<u>0</u>	0	0
	5	Preparation (0.5 practical)		h	<u>1</u>	0	0
	6	Tutorial		f	<u>0</u>	0	0
Assignment	7	Homework		h	<u>4</u>	1.5	6
	8	Report		h	1	2	2
	9	Seminar		h	0	3	0
	10	Paper		h	0	8	0
	11	Essay		h		6	0
	12	Project		h	0	8	0
Assessment	13	Quiz		h	<u>4</u>	0.5	2
	14	Mid Term	Theory	f	<u>1</u>	2	2



	15		Preparation	h	<u>1</u>	9	9
	16		Practical	f	<u>0</u>	0	0
	17		Preparation	h	<u>0</u>	0	0
	18	Final	Theory	f	<u>1</u>	2	2
	19		Preparation	h	<u>1</u>	9	9
	20		Practical	f	<u>0</u>	0	0
	21		Preparation	h	<u>0</u>	0	0
	Face to face hours (f)/12 week			3.83	Face to face hours (f)		
Home hours (h)/14 week			2.88	Home hours (h)			46
Total hours/14 week			5.75	Total hours			92
ECTS (Total hours/ 27)							3

*f: Face to face activity hours

h: Household activity hours

X: Theoretical class hours/ week

Y: Practical hours/ week

Z: Tutorial hours/ week

** Underlined numbers must not be changed.

Course Learning Outcomes (CLOs)

On the successful completion of this course, the students will be able to:

1. Apply basic Sustainable Development techniques to be used also in Aviation Engineering machine applications and Aviation Engineering.
2. Design and implement processes according to Philosophy of sustainable development, and the latter can implement those rules and techniques in real life.
3. Apply and recognize Sustainability and use them in real applications for Aviation Engineering.
4. Analyze any problem and solve it then connect it to real life applications of sustainability development.
5. Demonstrate an application of Aviation Engineering purposes.
6. Design Matlab application tools (making algorithms) that can be used to process Aviation algorithms.
7. Theoretical foundations and modern applications of Sustainable development in Aviation Engineering.
8. Applying Sustainability development techniques in Aviation Engineering functions.
9. Apply processing in the Aviation Algorithms, and decompose its components application advantages and disadvantages, such as analysis, filtering, reconstruction of different Aviation development techniques.



Course teaching and learning activities

This course's main point is making students apply those sustainable development techniques in the Aviation laboratory and later on the computer, as well as some techniques in sustainability and philosophy are used with the devices in the Aviation Laboratory in practice, what they received in the theoretical part.

And in this way, students will be the center of the class and will learn how to create applications and will read philosophical ideas that will be useful tools to apply in scientific and aviation engineering careers.

This will be followed by a theoretical part which will include an introduction and explanation. And all of the students will be encouraged to apply these activities in the practical class practically and will be given time to complete this application they choose by the end of the semester, and this class will encourage the students to be creative and critical thinkers to invent other useful algorithms and design built up functions and tools for sustainable development in Aviation Engineering to be used later by the next generations as well.

Course Assessment tools

Assessment tools	Descriptions	weight
Class Quizzes (4)	Students will be encouraged to prepare for the class in parallel with the teacher.	5 %
Class Homeworks (4)	Students will be encouraged to prepare themselves at home for the next class in parallel with the teacher.	5 %
Class Report (1)	Students will choose a topic related to Digital image processing and will discover the applications and programs that can be beneficial to apply in real life applications	5 %
Class Seminar (1)	Students will be encouraged to work as a group, and as a team, and will be participating to deliver the materials in the class and will make the students feel more responsible.	5 %
Midterm	Students will have a written exam related to the previous practices and materials theoretically 20%	20 %
Final Exam	Students will have an oral exam at the end of the semester if they get a signature from the teacher, and if they accomplished all the previous assessments one by one, this oral exam is to make sure that they students applied and put in action the application they created and put a sustainable goal behind it.	60%

In term studies	Number	Percentage of Grade
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Attendance	14	5%
Lab Quizzes		
Report	1	5 %
Special Course Internship		
Homework Assignments	4	5%
Presentations		
Seminar	1	5 %
Midterm	1	20 %
Final	1	60 %
Total		100 %
Percentage of in_ term studies		40%
Percentage of finals		60%
Total		100%



Course Assessment Tools

Course learning outcome and assessment mapping course learning outcome mapping

<i>Mapping</i>					
Mapping of assessment tools to the learning outcome					

No	Course learning Outcome	*Level of contribution				
		1	2	3	4	5
1	Theoretical foundations and modern applications				X	
2	Apply basic algorithms to be used also in Aviation Engineering Laboratories					X
3	Design and implement processings on Aviation, and implement Sustainable development in Aviation				X	
4	Apply and recognize Philosophy of sustainable development and use them in real applications .			X		
5	Analyze AVIATION AND SOCIAL DEVELOPMENT used in Aviation Engineering		X			
6	Demonstrate an application of Aviation Engineering.				X	
7	Applying Philosophical ideas and solving different problems how to handle this in Aviation engineering.					X
8	Develop an environmental application tool or idea that can be used to solve problems in Aviation Engineering .					X
9	Applying fundamentals in philosophy of sustainable development				X	
10	Aviation GOVERNANCE, VISION & STRATEGY, and applying using			X		



	the build up functions.					
11	Apply processing in the Problems in Aviation, and decompose a problem into its components, such as analysis, filtering, reconstruction.					X

Course/Module LOs, Content, Assessment Mapping

No	Course Topics	Weeks	Learning Outcome
1	Introduction About Philosophy of Sustainable Development	Week1	1
2	AVIATION OVERVIEW	Week2	1, and 9
3	AVIATION AND ENVIRONMENT	Week3	1, 2, 3, 4, and 5
4	ECONOMIC BENEFITS OF AVIATION	Week4	1, 9, and 11
5	AVIATION AND SOCIAL DEVELOPMENT	Week5	1, 2, 3 , 7, and 9
6	GOVERNANCE, VISION & STRATEGY	Week6	3, 7, 8, and 9
7	Midterm	Week7	
8	URBAN PLANNING AND DEVELOPMENT	Week8	1, 5, 6, 8, and 9
9	MOBILITY AND ACCESSIBILITY	Week9	1 ,5, 6 ,8, and 9
10	ENVIRONMENT	Week10	5, and 8
11	ECONOMIC DEVELOPMENT & COMPETITIVENESS	Week11	4, 5, and 8
12	SOCIAL INCLUSION & WORKFORCE DEVELOPMENT	Week12	1, 5, and 8
13	MARKETING AND BRANDING	Week13	1, 8, and 10
14	Revision week & Report presentation	Week14	1, and 10
15	Introduction About Philosophy of Sustainable Development	Week15	1, and 11

Assessment	Weeks	LOs	Weight
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Tools			
4 Quizzes	3,5,9, and 13	Students will do brainstorm in theoretical and apply these in practice in the laboratories (1, 2, 3)	5 %
4 Homeworks	2, 4, 10, and 12	Students will apply at home to put out in action and apply these LOs in practical(1, 5, 8, 9, and 11)	5 %
1 Report	6	Students will apply more in practice what they researched for their report (3, 7, 8, and 9)	5 %
1 Seminar	11	Students will be responsible with the teacher to deliver and apply these LOs (4, 5, and 8)	5 %
Midterm	7	Students will research and apply for a project with one of the companies or a faculty or will perform a midterm exam to demonstrate their abilities(4, 5, 6, and 10)	20 %
Final Exam Orally	16	The students will do an oral exam to know which application can be maintained and performed in this module(1 to 11)	60 %



References

1. Żyła, J. and Nędza, M., 2018. *Development of sustainable aviation. University of Information Technology and Management.*
2. Nikolova, T., Hervouët, M., Gollain, V. and Boichon, N., 2018. *Sustainable Airport Areas. Guidelines for Decision Makers.*
3. Haseman, Z., 2013. *Integrating environmental sustainability into airport contracts (Vol. 42). Transportation Research Board.*
4. Мутагиров, Д.З., 2016. Philosophy of Sustainable Development as Guide Humankind's Behavior. *Intellectual Property Rights*, 4(S1), pp.1-8.

Note//

Excel sheet link calculation for ECTS and workload, assignments, quizzes, ...

<https://docs.google.com/spreadsheets/d/1IaihhD2AZfTHCbZBs9L7bhRn4RVXsoH6/edit?usp=sharing&ouid=113794216519074746182&rtpof=true&sd=true>