

**UNDERGRADUATE
PROGRAM GUIDELINES
BASED ON
BOLOGNA PROCESS**

- **STUDY PROGRAM**

Core Modules: the modules which are considered as essential for future class work and graduation.

General Modules: these modules are general for first two semesters. These include:

English Language

Kurdology

Academic Debates

Information Technology (IT)

Supported Modules: modules that support the study program, including:

Mathematics

Engineering Analysis

Engineering Drawings

Engineering Statistics

Elective Subjects, etc.

University of Salahaddin – Erbil

College of Engineering

Department of Mechanical and Mechatronics Engineering

List of all study program modules

June 2019

No	Code	Module Name (course, subject)	Hours/week			Credits	Prerequisite (Subject Code)
			Lecture	Lab/studio	Tutorial		
1	5101	General English I	2	2		5	None
2	5102	Information Technology	2	2		5	None
3	5103	General English II	2	2		5	5101
4	5104	Academic Debate	4			5	None
5	5105	Kurdology	4			4	None
6	5106	Engineering Mechanics /Statics	3		1	5	None
7	5107	Principle of Electrical circuits	2	2		4	None
8	5108	Descriptive Geometry	2	2		5	None
9	5109	production Engineering	2	4		5	None
10	5110	Mathematics I	3		1	6	None
11	5111	Engineering Drawing	2	2		5	None
12	5112	Mathematics II	3		1	6	5110
13	5113	Fluid mechanics	3	2		5	None
14	5114	Strength of Material	3	2		5	5106
15	5115	Material science and Technology	3	2		4	None
16	5116	Thermodynamics	4	2		6	None
17	5117	Computer Programming	2	2		4	None
18	5118	Linear Algebra	3		1	6	5112
19	5119	Gas Dynamics	2		1	5	None
20	5120	Fundamentals of design	2		1	5	5114
21	5121	Engineering Mechanics / Dynamics	3		1	5	5106
22	5122	Mechanical Drawing	2	2		5	5111
23	5123	Differential Equations	3		1	6	5112
24	5124	Power and Heat pump cycles	2		1	4	5116

25	5125	Engineering Analysis & Statistics	3		1	6	5123
26	5126	Theory of Machines	2	2	1	5	5121
27	5127	Internal Combustion engines (I.C. Engines) (e)	2	2	1	6	5116
28	5128	Manufacturing processes	2			4	None
29	5129	Finite Element Methods FEM (e)	2		1	5	5125
30	5130	Fundamentals of Mechatronics	2			4	5107
31	5131	Theory of Vibration	2	2	1	5	5121
32	5132	Heat Transfer	2	2	1	5	5116
33	5133	Microcontrollers	2	2		5	5130
34	5134	computational Modeling	2	2		5	5129
35	5135	Nontraditional Manufacturing Process (e)	2			5	5128
36	5136	Electrical Machines	2	2		5	5107
37	5137	Control Engineering	2	2		5	None
38	5138	Power engineering (e)	2	2		5	5124
39	5139	Robotics	2	2		6	5133
40	5140	Refrigeration system (e)	2	2		5	5116
41	5141	Automotive engineering(e)	2	2		5	None
42	5142	Instrumentation and measurements(e)	2	2		5	None
43	5143	Machine design	2		2	6	5120
44	5144	Programmable logic controllers and Automation (e)	2	2		5	5137
45	5145	Air-conditioning Engineering(e)	2	2		5	5132
46	5146	CAD & CAM(e)	2	2		5	None
47	5147	Industrial Engineering (e)	2			5	None
48	5148	Metal Cutting principles (e)	2		1	5	5127
49	5149	Welding and Casting Technologies (e)	2		1	5	5127
50	5150	Mechanics of Composite Materials (e)	2		1	5	5114
51	5151	Renewable energy and Sustainable technologies (e)	2	2		5	None
52	5152	Probability and Statistics for Engineers (e)	2		1	5	None
53	5153	Safety and Engineering management (e)	2		1	5	None
54	5154	Research Methods and Academic Publication Ethics	2			4	None
55	5155	Engineering Project		12		13	51534
56	5156	Internships		18		17	None
Total Credit						282	

(e) Stands for elective subjects

- **STUDY PROGRAM**

Engineering Project: it is a core module that essential for graduation and will appear on student official transcript.

Internships: is a period of work experience offered by organization/company for a specific time required for graduation.

The student will register to final semester which include Internships and Engineering Project after completing all other required modules.

- **CREDIT SYSTEM**

All study programs have specific credits determined by the relevant department according to the Bologna process as shown below:

30 - Credits per semester.

240 - Credits per the study program (Four - Year program).

300- Credits per the study program (Five - Year program).

Workload

The workload of a module is the total amount of learning activities a student is expected to complete in order to achieve the foreseen learning outcomes. This includes attending college lectures and other activities such as writing reports, home works, questions, exams, applications, etc.

• CREDIT SYSTEM

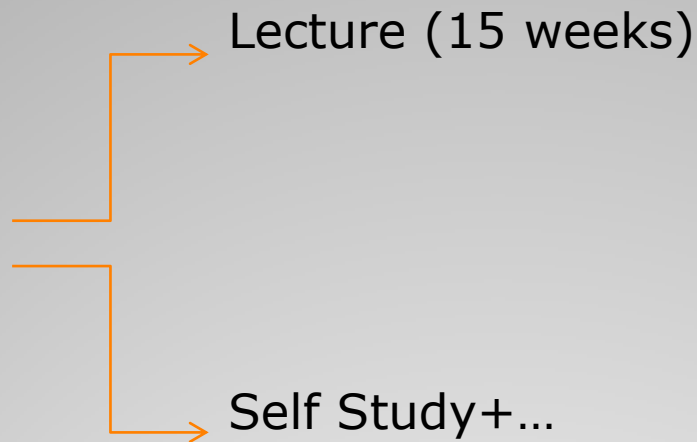
ECTS

European Credit Transfer and Accumulation System (ECTS) credits are a standard means for comparing the volume of learning based on the defined learning outcomes and their associated workload. The credits calculation as follows:

30 - Learning hours (Student Learning Time) are calculates as one credit.
The total required credits are (240) as per the regulation for each study program.
The total required credits are (300) as per the regulation for architecture engineering study program.

Credit=Measuring of Students				Achievement of Learning Outcomes	
Academic Workload					
Lecture	Project Work	Study Tour	Demonstration	- Face to face /Guided Learning Time	
Tutorial	Presentation	Case Study	Assignments	- Student Self Learning Time	
Laboratory	Revision	E-Learning	Clinical	- Assessment Time	
Work Attachment	Studio Work	Group Discussion			
Group Assignment	Field Work	Research Project		Total SLT: 30 * Credit	
Examination		Industrial Training			
				Student Learning Time SLT	

- Credit



$$\text{credit} = \frac{(\text{Lecture} + \text{Self study} + \dots) \text{time}}{30}$$

Example: Static

$$\text{Credit} = \frac{(4 \times 15 + 90)}{30} = 5$$

Data:	PP. MA. Nr. 3215 / Examination number: 44504	Version: 05.07.2017	Start Year: WiSe 2012
Module Name: (English):	Personal Programming Project		
Responsible: Lecturer(s):	Sandfeld, Stefan / Prof. Dr. Hütter, Gerafl / Dr. Ing. Rheinbach, Oliver / Prof. Dr. Sandfeld, Stefan / Prof. Dr.		
Institute(s):	Institute of Mechanics and Fluid Dynamics Institute of Numerical Mathematics and Optimization		
Duration:	22 Week(s)		
Competencies:	The students will develop and document their own software tool for a subject relevant to the course Computational Materials Science (e.g., Dislocation or Molecular Dynamics, Finite Elements Method FEM, Discrete Element Method or advanced data analysis). Furthermore, they will use this method to simulate material behavior, to calculate a physical property or to analyze existing/own simulated data.		
Contents:	Most important ingredients are: Developing the tool, commenting the source file, documentation and running a successful example to verify the code.		
Literature:	None		
Types of Teaching:	S1 (WS): By the end of the second semester, the students decide on a topic and supervisor. The supervisor will also be examiner of the project. Then, the students design a concept for their project, which has to be discussed and approved by the responsible lecturer. After approval, the students register at examination office for the project. The final report has to be delivered within 22 weeks. / project (22 Wo)		
Pre-requisites:	Recommendations: None		
Frequency:	yearly in the winter semester		
Requirements for Credit Points:	For the award of credit points it is necessary to pass the module exam. The module exam contains: AP: Final Report (source code, documentation, analysis of an example solved with their numerical tool) AP: Presentation and defending of the project [20 min]		
Credit Points:	7		
Grade:	The Grade is generated from the examination result(s) with the following weights (w): AP: Final Report (source code, documentation, analysis of an example solved with their numerical tool) [w: 4] AP: Presentation and defending of the project [w: 1]		
Workload:	The workload is 210h.		

● CREDIT SYSTEM

Total Credit and Length of Study

- a.** The minimum number of credits for completing the Bachelor degree is (240 – Four year study program) and (300 – Five year study program) credits.
- b.** The Bachelor degree program is four years divided into (8) successive semesters. Students are allowed two more years that is (4) extra successive semesters to complete the Bachelor degree in case of failures and / or health issues.
- c.** For Architecture Engineering the length of Bachelor degree program is 5 years divided into (10) successive semesters. Students are allowed two more years that is (4) extra successive semesters to complete the Bachelor degree in case of failures and / or health issues.

Transferring the Credits

Credits of completed modules in the same or similar programs from other universities can be transferred to this program after the approval of related department committee.

Credits for Incomplete Modules

Student should register for next exams of incomplete module.

Students are allowed to take no more than two attempts per module exam.

The new accumulated credits will replace the old incomplete module credits.

• ACADMIC SESSION

Fall		Spring	
Lectures	15 Weeks	Lectures	15 Weeks
Final Examinations	5 Weeks	Final Examinations	5 Weeks
<u>TOTAL</u>	20 Weeks	<u>TOTAL</u>	20 Weeks
Semester Break	4 Weeks	Summer Break	8 Weeks

- Academic Calendar

Students are required to follow Academic calendar of each Semester, then implementing and following every requirement to complete the course to the end, Practical work, Homework, work sector...etc. An example of Academic Calendar of the Fall and Spring Semesters for an academic year (2019 – 2020) is explained in the following Table:

**Salahaddin University-Erbil
Academic Calendar**

Date	Program	Assessments	Public Holiday
<u>Fall Semester</u>(01 September 2019 – 12December 2019)			
01 Sept. – 5 Sept. 2019	Lectures Semester I (First Week)	Student Lectures, Assignment,Activities	
8 Sept. – 12 Sept. 2019	Week 2		
15 Sept. – 26 Oct. 2019	Week 3		
22Sept. – 26Sept. 2019	Week 4		
29Sept. – 03 Oct. 2019	Week 5		
06 Oct. – 10 Oct. 2019	Week 6		
13 Oct. – 17 Oct. 2019	Week 7		
20 Oct. – 24Oct. 2019	Week 8		
27Oct. – 31 Oct. 2019	Week 9		
03 Nov. – 07 Nov. 2019	Week 10		
10 Nov. – 14 Nov. 2019	Week 11		
17 Nov. – 21 Nov. 2019	Week 12		
24Nov. – 28Nov. 2019	Week 13		
01 Dec. – 05 Dec. 2019	Week 14		
08 Dec. – 12 Dec. 2019	Week 15		
15 Dec. – 19 Dec. 2019	Week 16		Fall Semester Final Examination
22 Dec. – 26 Dec. 2019	Week 17		
29Dec. – 02 Jan. 2020	Week 18	New Year Wednesday, January 1, 2020	
05 Jan. – 09 Jan. 2020	Week 19		
12 Jan. – 16 Jan. 2020	Week 20		
<u>Semester Break</u>(19 January2020 – 13 February 2020)			

Spring Semester(16 February 2020 – 02 July 2020)

Date	Program	Assessments	Public Holiday
16Feb. – 20Feb. 2020	Lectures Semester I (First Week)	Student Lectures, Assignment, Activities	
23 Feb. – 27 Feb. 2020	Week 2		
01Mar. – 05Mar. 2020	Week 3		
08 Mar. – 12 Mar. 2020	Week 4		
15 Mar. – 19 Mar. 2020	Week 5		
22 Mar. – 29 Mar. 2020	Week 6		Nawroz
29 Mar. – 02Apr. 2020	Week 7		
05Apr. – 09Apr. 2020	Week 8		
12Apr. – 16Apr. 2020	Week 9		
19Apr. – 23Apr. 2020	Week 10		
26Apr. – 30Apr. 2020	Week 11		
03May. – 07May. 2020	Week 12		
10 May. – 14 May. 2020	Week 13		
17May. – 21May. 2020	Week 14		
24May. – 28May. 2020	Week 15		
31May. – 04Jun. 2020	Week 16		Spring Semester Final Examination
07Jun. -11Jun. 2020	Week 17		
14Jun. -18Jun. 2020	Week 18		
21Jun. -25Jun. 2020	Week 19		
28Jun.-2July 2020	Week 20		

Summer Break(05July 2020 – 31 August 2020)

Examination Time Table First Semester

	Classes		First Year	Second Year	Third Year	Fourth Year
	Dates					
1	Sunday -	15 / 12 /2019	Mathematics I			
2	Monday -	16 / 12 /2019				
3	Tuesday -	17 / 12 /2019	Information Technology			
4	Wednesday -	18 / 12 /2019				
5	Thursday -	19 / 12 /2019	Kurdology			
6	Friday -	20 / 12 /2019				
7	Saturday -	21 / 12 /2019	Production Eng.			
8	Sunday -	22 / 12 /2019				
9	Monday -	23 / 12 /2019	Academic Debate			
10	Tuesday -	24 / 12 /2019				
11	Wednesday	25 / 12 /2019	Holiday			
12	Thursday -	26 / 12 /2019	General English I			
13	Friday -	27 / 12 /2019				
14	Saturday -	28 / 12 /2019				
15	Sunday -	05 / 1 /2020	Principle of Electrical circuits			

16	Monday - 06 / 1 /2020				
17	Tuesday - 07 / 1 /2020	Static			
18	Wednesday 08 / 1 /2020				
19	Thursday - 09 / 1 /2020	Engineering Drawing			
20	Friday - 10 / 1 /2020				
21	Saturday - 11 / 1 /2020				
22	Sunday - 12 / 1 /2020	Descriptive Geometry			
23	Monday - 13 / 1 /2020				
24	Tuesday - 14 / 1 /2020	General English II			
25	Wednesday 15 / 1 /2020				
26	Thursday - 16 / 1 /2020				
27	Friday - 17 / 1 /2020	MathematicsII			

Mechanical and Mechatronics Engineering Curriculum 2019-2020

Bologna System

First Year

Fall Semester

No	Code	Module Name (course, subject)	Hours/week			Credits	Prerequisite (Subject Code)
			Lecture	Lab/studio	Tutorial		
1	5101	General English I	2	2		5	None
2	5102	Information Technology	2	2		5	None
3	5104	Academic Debate	4			5	None
4	5105	Kurdology	4			4	None
5	5109	production Engineering	2	4		5	None
6	5110	Mathematics I	3		1	6	None
Total			17	8	1	30	

First Year

Spring Semester

No	Code	Module Name (course, subject)	Hours/week			Credits	Prerequisite (Subject Code)
			Lecture	Lab/studio	Tutorial		
1	5103	General English II	2	2		5	5101
2	5106	Engineering Mechanics /Statics	3		1	5	None
3	5107	Principle of Electrical circuits	2	2		4	None
4	5108	Descriptive Geometry	2	2		5	None
5	5111	Engineering Drawing	2	2		5	None
6	5112	Mathematics II	3		1	6	5110
Total			14	8	2	30	

Examination Time Table (only for 2019-2020) (the first semester for the Bologna Process)

1	Monday - 06 / 1 /2020				
2	Tuesday - 07 / 1 /2020	MathematicsI			
3	Wednesday 08 / 1 /2020				
4	Thursday - 09 / 1 /2020	Kurdology			
5	Friday - 10 / 1 /2020				
6	Saturday - 11 / 1 /2020	Information Technology			
7	Sunday - 12 / 1 /2020				
8	Monday - 13 / 1 /2020	Production Engineering			
9	Tuesday - 14 / 1 /2020				
10	Wednesday 15 / 1 /2020	General English I			
11	Thursday - 16 / 1 /2020				
12	Friday - 17 / 1 /2020	Academic Debate			

- Examination Time Table Second Semester

	Classes		First Year	Second Year	Third Year	Fourth Year
	Dates					
1	Sunday -	31 / 05 /2020	Mathematics I			
2	Monday -	01 / 06 /2020				
3	Tuesday -	02 / 06 /2020	Information Technology			
4	Wednesday -	03 / 06 /2020				
5	Thursday -	04 / 06 /2020	Kurdology			
6	Friday -	05 / 06 /2020				
7	Saturday -	06 / 06 /2020	Production Eng.			
8	Sunday -	07 / 06 /2020				
9	Monday -	08 / 06 /2020	Academic Debate			
10	Tuesday -	09 / 06 /2020				
11	Wednesday	10 / 06 /2020				
12	Thursday -	11 / 06 /2020	General English I			
13	Friday -	12 / 06 /2020				
14	Saturday -	13 / 06 /2020				
15	Sunday -	14 / 06 /2020	Principle of Electrical circuits			

16	Monday - 15 / 06 /2020				
17	Tuesday - 16 / 06 /2020	Static			
18	Wednesday 17 / 06 /2020				
19	Thursday - 18 / 06 /2020	Engineering Drawing			
20	Friday - 19 / 06 /2020				
21	Saturday - 20 / 06 /2020	Descriptive Geometry			
22	Sunday - 21 / 06 /2020				
23	Monday - 22 /06 /2020	General English II			
24	Tuesday - 23 / 06 /2020				
25	Wednesday 24 / 06 /2020				
26	Thursday - 25 / 06 /2020	MathematicsII			
27	Friday - 26 / 06 /2020				

- **PROGRAM REGISTRATION**

1- Students should register for the Study Program, which are going to be presented by University at a certain time.

2- For students who are not following the rule in (1) without any excuse or reason that has been approved by university, their application will not be considered.

SEMESTER AND EXAM REGISTRATION

- Student should register at the beginning of each semester.**
- Dropping module will not affect the student records.**
- Self Funded Students should pay the semester fees prior to the start of each semester.**
- Students who have not paid the total semester fees can not register for exams.**
- Student should register for an exam during the designated exam registration period.**
- Student can withdraw from registered exam one week prior to exam date.**
- To register to an exam, the student should fulfill the requirement pre - specified by the module professor. Otherwise, the exam registration will automatically be cancelled.**

Exam Registration 2019-2020

Student should register for an exam before 17.Nov. for first semester

Student should register for an exam before 03.May. for second semester

Student can withdraw from registered exam one week prior to exam date.

- **GRADING SYSTEM**

For each module per semester, the grades are determined by the individual respective module examiner.

The following grade system is used to for the evaluation of the exam:

Grade Number	Grade	Assessment
1	Very Good	Outstanding Performance
2	Good	Considerably Above Average Performance
3	Satisfactory	Average Performance
4	Sufficient	Acceptable Performance
5	Not Sufficient	Unacceptable Performance

• GRADING SYSTEM

The Examiner will be responsible for determining the appropriate grade system which will reflect the grades mentioned in (2) above when the percentage (out of 100) is used to mark the exams. The following demonstration show some allocation of grades per mark:

Grade Number	Grade	Exam Mark Range (out of 100)
1	Very Good	90-100
2	Good	75-89
3	Satisfactory	60-74
4	Sufficient	50-59
5	Not Sufficient	<50

In order to differentiate between examination performances, individual grades can be increased or decreased by 0.3 points to an intermediate value; the grades 0.7, 4.3, 4.7, 5.3 are excluded.

Each semester result is declared in the online result system for student using the grade result per the above table in .

- Example

Kurdology Exam

The final result : 94

$$\text{Grade Number} = 1 + \frac{1}{10} \times (100 - 94) = 1.6 \longrightarrow 1.7$$

Mathematics

The final result: 65

$$\text{Grade Number} = 3 + \frac{1}{15} \times (74 - 65) = 3.6 \longrightarrow 3.7$$

Static : 49

Grade Number = 5

- **ASSESSMENT**

- 1. Exams**

The exams should be carried out at their exacted dates according to the university academic calendar.

Examination Guidelines

All the registered students may at end / participate the course final exam as it will be determined by the college.

Student may not register for any exam and can take an exam at the other new upcoming semesters.

- 2. Clarifying Semester Grades**

- a. University / College through its departments should announce all module grades online for a particular time period.

- b. Students should check all the grades obtained within that time.

- 3. Semester Grade Appeal**

Student has the right to submit a request to the college asking for reviewing all their module results within (10 days as a maximum period) after one week of announcing exam results according to the college's instructions.

• **ACADEMIC STANDING**

At the successful completion of the study program, and a part from the grading scale system (1-5), all grades are ranked according to (ECTS) ranking. The rank is given according to the following standardized (ECTS) evaluation scale:

A	For the best 10%
B	For the next 25%
C	For the next 30%
D	For the next 25%
E	For the next 10%
F	Failed

• ACADEMIC STANDING

The evaluation of the (ECTS) grade for a particular year is based on the result of at least two and no more than four previous years graduates.

Alternative grading:

If within these four years period fewer than (30) students graduate from this study program, as well as for graduates of the first two years of this program, the (ECTS) grades are determined as follows:

Degree Class	Grade
1 Up to and including 1.5 (Excellent)	A
From 1.6 Up to and including 2.0 (Very Good)	B
From 2.1 Up to and including 3.0 (Good)	C
From 3.1 Up to and including 3.5 (Satisfactory)	D
From 3.6 Up to and including 4.0 (Sufficient)	E
4.1 and above (Failed)	F

CGPA: is the average of grade points obtained of all semesters and courses completed up to a given academic term.

Ex.

Module	Credit	Grade
Mathematics I	6	2.7
Static	5	3.3
Kurdology	4	1.7
Production	5	4

$$\text{CGPA} = \frac{2.7 \times 6 + 3.3 \times 5 + 1.7 \times 4 + 4 \times 5}{20} = \mathbf{2.975 \text{ grade (C) GOOD}}$$

- **AWARD OF A DEGREE**

Qualifications that signify completion of the first cycle (e.g. Bachelor's degrees) are awarded to students who have completed the requirements of the course successfully as follows:

Receiving the level of good status.

Completing all required modules.

Accumulating the required credits.

Applying for the degree and should be authorized by recognized college.

Requiring other regulations and disciplinary are issued by the University.

- **Grade Conversion using the Bavarian Formula**

$$Gr_{DH} = 1 + 3 \cdot \frac{Gr_{abr / max} - Gr_{abr}}{Gr_{abr / max} - Gr_{abr / min}}$$

GR abr/max: Maximum grade at your university

GR abr/min: Minimum passing grade at your university

GR abr: Your current overall grade at your university

GR DH: Your grade in the German system