



INTERNATIONAL HELLENIC UNIVERSITY
SCHOOL of ENGINEERING
DEPARTMENT of MECHANICAL ENGINEERING
Serres Campus

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Curriculum 2022 – 23

	1st Semester			
Code No	Course Title	Type	Hours/Week	ECTS units
ΓΥ0101	Mathematics I – Calculus of One Variable	C	5	7,5
ΓΥ0102	Physics I – Dynamics	C	4	6,0
EY0103	Mechanical Drawing	C	4	6,0
ΓΥ0104	Introduction to Materials Science	C	4	6,0
ΓΥ0105	Technical Terminology – English	C	3	4,5
TOTAL			20	30,0

	2nd Semester			
Code No	Course Title	Type	Hours/Week	ECTS units
ΓΥ0201	Mathematics II – Calculus of Several Variables	C	3	4,5
ΓΥ0202	Physics II – Electromagnetism	C	4	6,0
EY0203	Computer Aided Design I	C	3	4,5
EY0204	Mechanics I – Statics	C	4	6,0
ΓΥ0205	Computer Programming I	C	3	4,5
ΓΥ0206	Labor Safety – Ergonomics	C	3	4,5
TOTAL			20	30,0

	3 rd Semester			
Code No	Course Title	Type	Hours/Week	ECTS units
ΓΥ0301	Mathematics III – Differential Equations	C	3	4,5
EY0302	Thermodynamics I	C	4	6,0
EY0303	Computer Aided Design II	C	3	4,5
EY0304	Mechanics II – Material Strength	C	4	6,0
ΓΥ0305	Computer Programming II	C	3	4,5
EY0306	Production Management	C	3	4,5
TOTAL			20	30,0

	4 th Semester			
Code No	Course Title	Type	Hours/Week	ECTS units
ΓΥ0401	Numerical Analysis	C	3	4,5
EY0402	Fluid Mechanics	C	3	4,5
EY0403	Engineering Materials Technology	C	3	4,5
EY0404	Machining Technology I	C	4	6,0
EY0405	Machine Elements I	C	4	6,0
EY0406	Production Units Administration	C	3	4,5
TOTAL			20	30,0

	5 th Semester			
Code No	Course Title	Type	Hours/Week	ECTS units
ΓΥ0501	Statistics & Probability Theory	C	4	6,0
EY0502	Thermodynamics II	C	4	6,0
EY0503	Electrical Technology & Electronics	C	4	6,0
EY0504	Machine Elements II	C	4	6,0
EY0505	Machine Dynamics & Vibrations	C	4	6,0
TOTAL			20	30,0

	6 th Semester			
Code No	Course Title	Type	Hours/Week	ECTS units
EY0601	Heat Transfer	C	4	6,0
EY0602	Electrical Machines	C	4	6,0
EY0603	Internal Combustion Engines	C	4	6,0
EY0604	Metrology – Quality Control	C	4	6,0
EY0605	Management & Implementation of Technical Projects	C	4	6,0
TOTAL			20	30,0

	7 th Semester			
Code No	Course Title	Type	Hours/Week	ECTS units
Manufacturing Section				
KK0701	Machining Technology II	C	4	6,0
KK0702	Electrical & Mechanical Installations	C	4	6,0
KK0703	Finite Elements I	C	4	6,0
KK0704	Casting & Welding	C	4	6,0
KK0705	1 st COMPULSORY ELECTIVE COURSE (one of the Courses EK0701 – EK0704 of the ENERGY Section)	CE	4	6,0
TOTAL (M)			20	30,0
Energy Section				
EK0701	Automation Control	C	4	6,0
EK0702	Vehicle Motion Systems	C	4	6,0
EK0703	Renewable Energy Sources	C	4	6,0
EK0704	Advances in Fluid Mechanics	C	4	6,0
EK0705	1 st COMPULSORY ELECTIVE COURSE (one of the Courses KK0701 – KK0704 of the MANUFACTURING Section)	CE	4	6,0
TOTAL (E)			20	30,0

	8 th Semester			
Code No	Course Title	Type	Hours/Week	ECTS units
Manufacturing Section				
KK0801	Elevating & Conveying Machines	C	4	6,0
KK0802	Metal Forming	C	4	6,0
KK0803	Industrial Robotics	C	4	6,0
KK0804	Machine Tools - CIM	C	4	6,0
KK0805	2 nd COMPULSORY ELECTIVE COURSE (one of the Courses EK0801 – EK0804 of the ENERGY Section)	CE	4	6,0
TOTAL (M)			20	30,0
Energy Section				
EK0801	Heat – Ventilation – Air Conditioning	C	4	6,0
EK0802	Steam Boilers - Steam Turbines & Energy Systems	C	4	6,0
EK0803	Turbomachinery	C	4	6,0
EK0804	Techniques & Measurements of Natural Processes	C	4	6,0
EK0805	2 nd COMPULSORY ELECTIVE COURSE (one of the Courses KK0801 – KK0804 of the MANUFACTURING Section)	CE	4	6,0
TOTAL (E)			20	30,0

	9 th Semester – MANUFACTURING Section			
Code No	Course Title	Type	Hours/Week	ECTS units
Specialization A – Mechanical Design & Materials				
KA0901	Diploma Thesis I	C	10	15,0
KA0902	3 rd Compulsory Elective Course	CE	4	5,0
KA0903	4 th Compulsory Elective Course	CE	4	5,0
KA0904	5 th Compulsory Elective Course	CE	4	5,0
KA0905	Fieldwork Practice I	O	-	5,0
TOTAL (M) – Specialization A			22	35,0
Specialization B – Manufacturing & Production Technology				
KB0901	Diploma Thesis I	C	10	15,0
KB0902	3 rd Compulsory Elective Course	CE	4	5,0
KB0903	4 th Compulsory Elective Course	CE	4	5,0
KB0904	5 th Compulsory Elective Course	CE	4	5,0
KB0905	Fieldwork Practice I	O	-	5,0
TOTAL (M) – Specialization B			22	35,0
9 th Semester – Manufacturing Section’s ELECTIVE COURSES				
Code No	Course Title			Type
	Specialization A – Mechanical Design & Materials			
KA09E1	Structures Failure Analysis			E
KA09E2	Mechanical Design – Optimization			E
KA09E3	Electric, Hydraulic & Pneumatic Motion Systems			E
KA09E4	Materials & Environment			E
KA09E5	Nanotechnology			E
KA09E6	Materials & Mechanical Design			E
	Specialization B – Manufacturing & Production Technology			
KB09E1	Computerized Numerical Control Machining			E
KB09E2	Mechatronics			E
KB09E3	Finite Elements II			E
KB09E4	Experimental Strength of Materials			E
KB09E5	Mechanics of Composite Materials			E
KB09E6	Reverse Engineering & Rapid Prototyping			E
	9 th Semester – ENERGY Section			
Code No	Course Title	Type	Hours/Week	ECTS units
Specialization A – Thermo-Fluid Mechanics				
EA0901	Diploma Thesis I	C	10	15,0
EA0902	3 rd Compulsory Elective Course	CE	4	5,0
EA0903	4 th Compulsory Elective Course	CE	4	5,0
EA0904	5 th Compulsory Elective Course	CE	4	5,0

EA0905	Fieldwork Practice I	O	-	5,0
TOTAL (E) – Specialization A			22	35,0
Specialization B – Power Generation & Management				
EB0901	Diploma Thesis I	C	10	15,0
EB0902	3 rd Compulsory Elective Course	CE	4	5,0
EB0903	4 th Compulsory Elective Course	CE	4	5,0
EB0904	5 th Compulsory Elective Course	CE	4	5,0
EB0905	Fieldwork Practice I	O	-	5,0
TOTAL (E) – Specialization B			22	35,0
9 th Semester – Energy Section’s ELECTIVE COURSES				
Code No	Course Title			Type
	Specialization A – Thermo-Fluid Mechanics			
EA09E1	Environmental Technology			E
EA09E2	Industrial Refrigeration and Cooling			E
EA09E3	Flow Networks			E
EA09E4	Computational Methods in Fluid Dynamics & Heat Transfer			E
EA09E5	Transport Phenomena			E
	Specialization B – Power Generation & Management			
EB09E1	Gas Turbines & Aero-engines			E
EB09E2	Electric Systems in Industry			E
EB09E3	Electric Systems in Renewable Energy Sources			E
EB09E4	Advances in Wind Energy			E
EB09E5	Advances in Solar Power			E

10th Semester – MANUFACTURING Section				
Code No	Course Title	Type	Hours/Week	ECTS units
Specialization A – Mechanical Design & Materials				
KA1001	Diploma Thesis II	C	10	15,0
KA1002	6 th Compulsory Elective Course	CE	4	5,0
KA1003	7 th Compulsory Elective Course	CE	4	5,0
KA1004	8 th Compulsory Elective Course	CE	4	5,0
KA1005	Fieldwork Practice II	O	-	5,0
TOTAL (M) – Specialization A			22	35,0
Specialization B – Manufacturing & Production Technology				
KB1001	Diploma Thesis II	C	10	15,0
KB1002	6 th Compulsory Elective Course	CE	4	5,0
KB1003	7 th Compulsory Elective Course	CE	4	5,0
KB1004	8 th Compulsory Elective Course	CE	4	5,0
KB1005	Fieldwork Practice II	O	-	5,0

TOTAL (M) – Specialization B			22	35,0
10th Semester – Manufacturing Section's ELECTIVE COURSES				
Code No	Course Title			Type
	Specialization A – Mechanical Design & Materials			
KA10E1	Advanced Materials			E
KA10E2	Tribology – Lubricants			E
KA10E3	Modern Welding Technologies			E
KA10E4	Thermal & Surface Metal Treatment			E
KA10E5	Dynamics of Systems			E
	Specialization B – Manufacturing & Production Technology			
KB10E1	Analysis & Synthesis of Mechanisms			E
KB10E2	Optimum Product Development			E
KB10E3	Industrial Measurements – Machine Diagnostics			E
KB10E4	Computational Metal Forming			E
KB10E5	Bioengineering			E
	10th Semester – ENERGY Section			
Code No	Course Title	Type	Hours/Week	ECTS units
Specialization A – Thermo-Fluid Mechanics				
EA1001	Diploma Thesis II	C	10	15,0
EA1002	6 th Compulsory Elective Course	CE	4	5,0
EA1003	7 th Compulsory Elective Course	CE	4	5,0
EA1004	8 th Compulsory Elective Course	CE	4	5,0
EA1005	Fieldwork Practice II	O	-	5,0
TOTAL (E) – Specialization A			22	35,0
Specialization B – Power Generation & Management				
EB1001	Diploma Thesis II	C	10	15,0
EB1002	6 th Compulsory Elective Course	CE	4	5,0
EB1003	7 th Compulsory Elective Course	CE	4	5,0
EB1004	8 th Compulsory Elective Course	CE	4	5,0
EB1005	Fieldwork Practice II	O	-	5,0
TOTAL (E) – Specialization B			22	35,0
10th Semester – Energy Section's ELECTIVE COURSES				
Code No	Course Title			Type
	Specialization A – Thermo-Fluid Mechanics			
EA10E1	Aerodynamics			E
EA10E2	Multiphase Flows			E
EA10E3	Advances in Heat Transfer			E
EA10E4	Combustion			E
EA10E5	Design of Elements for Thermal Turbomachines			E

	Specialization B – Power Generation & Management	
EB10E1	Buildings Energy Assessment	E
EB10E2	Processing & Management of Solid Waste	E
EB10E3	Medium & High Power Electrical Substations	E
EB10E4	Electric Energy Storage & Demand Management	E
EB10E5	Power Electronics & Applications	E

On behalf of the Mechanical Engineering Department,

The Head of the Department,
Kostas KLEIDIS
Associate Professor