



**Ministry of Higher Education and Scientific Research**  
**University of Mosul**  
**College of Engineering**  
**Electrical Engineering Department**

**Description of the academic program**  
**(Semesters/ First Class)**  
**(Courses / Second level -Third level -Fourth**  
**level)**  
**Of**  
**Electrical Engineering Department**  
**Electronic and Communications**  
**2022–2023**

## Description of the academic program

This academic program description provides a necessary summary of the most important characteristics of the program and the learning outcomes that the student is expected to achieve, demonstrating whether he or she has made the most of the available opportunities. It is accompanied by a description of each course within the program

University of Mosul	1. Educational institution
College of Engineering/Department of Electrical Engineering	2. Scientific department/center
Electronic and communications engineering	3. Name of the academic or professional program
Bachelor of Science in Electrical Engineering	4. Name of the final certificate
Courses and semesters	5. Academic system annual/courses/others
ABET	6. Accredited accreditation program
Higher decisions	7. Other external influences
2023	8. Date the description was prepared
9. Objectives of the academic program	
<ul style="list-style-type: none"> <li>● Emphasis on building the student's knowledge on solid foundations of basic sciences such as mathematics, physics and other engineering sciences related to the specialty of electronics and communications engineering.</li> </ul>	
<ul style="list-style-type: none"> <li>● Establishing a knowledge background based on the various electrical engineering sciences, especially those related to the subject of specialization.</li> </ul>	
<ul style="list-style-type: none"> <li>● Training the student to address practical problems by applying the principles of engineering sciences related to the field of electronics and communications.</li> </ul>	
<ul style="list-style-type: none"> <li>● Introducing the student to his technical and social responsibilities necessary to practice design, operation and maintenance work for a wide range of electronic and communications systems to achieve the required goals, taking into account</li> </ul>	

various practical determinants such as economic, environmental, security and health determinants.

- Developing the student's practical skills in dealing with electronic and communications units, systems, and applications, starting from the level of designing and analyzing units to diagnosing problems and malfunctions.

- Consolidating contemporary skills and sciences, such as computer science, engineering software applications, and other modern ancillary sciences necessary to ensure the student's ability to develop and learn lifelong.

- Enhancing the student's ability and skills in technical communication, such as presentation, report writing, and explanation skills, as a member of a team or individually.

## 10. Required program outcomes and teaching, learning and evaluation methods

A- Cognitive objectives.

A1- Principles of basic, applied, and engineering sciences necessary for knowledge of electrical engineering (such as mathematics, physics, and mechanical engineering principles).

A2- Basic electrical engineering sciences, such as electrical circuits, electronic systems, electromagnetic fields, measurements, electrical devices, and digital systems.

A3 Foundations of electrical engineering and analysis of electrical circuits and equipment for electrical installations such as grounding and others.

A4- Electrical engineering sciences that support the specialty, such as the basics of electronics, communications, microprocessors, and control engineering.

A5- Foundations of professionalism and related communication skills, such as presenting and writing reports, with familiarity with economic, legal, health, social, and security determinants.

B - Skills objectives of the program:

B1 - Solving and formulating engineering problems in general, especially those related to electrical engineering.

B2 - Identifying and formulating engineering problems and applying mathematical knowledge, science, engineering methods, and creativity skills to solve problems in the field of power engineering and electrical machines.

B3 - Writing and implementing algorithms to solve power and electrical machine problems.

B4- Interpreting numerical data and applying mathematical methods to analyze problems.

B5- Preparing technical and operational specifications for energy components and systems and electrical appliances.

#### Teaching and learning methods

- Theoretical lectures
- Discussion sessions
- Laboratory experiments
- Computer laboratories

#### Evaluation methods

- Mid-term and final exams.
- Short exams.
- Reports
- Practical exams
- Diction

#### C- Thinking skills:

C1- Conducting and designing practical experiments for electrical systems, in addition to analyzing and interpreting practical results related to communications systems.

C2- Writing computer programs and using ready-made programs to solve problems related to the field of specialization.

C3- Applying modern engineering techniques, skills and tools to electronic and communications systems.

C4- Design, build and evaluate electronic systems using appropriate analysis tools and modern systems.

#### Teaching and learning methods

- Theoretical lectures
- Discussion sessions
- Laboratory experiments

- Computer laboratories
- Projects
- Industrial training

#### Evaluation methods

- Semester and final exams
- Short exams
- Reports
- Practical exams

D - General and qualifying transferable skills (other skills related to employability and personal development).

D1- Work professionally and with ethical responsibility, individually or within a multidisciplinary team

D2- Writing technical reports and presenting effectively

D3- Effective use of information technology related to engineering applications in general and the field of electronics and communications in particular.

D4-The possibility of starting scientific research projects in the future

#### Teaching and learning methods

- Theoretical lectures
- Discussion sessions
- Laboratory experiments
- Computer laboratories
- Projects
- Industrial training

#### Evaluation methods

- Semester and final exams
- Short exams
- Reports
- Practical exams

### 11. Planning for personal development

Student development, the teacher's program for student development, such as using the Internet, using IT, using safety methods in the laboratory, and developing the student's academic personality capable of competition, dialogue, and problem solving.

### 12.. Admission standard (establishing regulations related to college admission)

1. Central distribution by the Ministry of Higher Education determines those accepted into the College of Engineering.
2. The choices of those accepted into the departments are determined, and competition takes place between them on the basis of the total - then the total of the differentiation lessons.
3. Transfer from other departments and universities is accepted in accordance with higher controls and instructions.
4. After the first stage, students are divided between the Power and Machinery and Electronics and Communications branches based on their choice and the results of the first stage.

### 13.The most important sources of information about the program

- Developing the program through resources
- Higher directives
- What new sciences are developed in the field of specialization

### 14.Department vision, mission and goals

#### Department vision:

The department seeks to be one of the leading departments in the field of electrical engineering in Iraq and the region by graduating engineers specializing in electrical engineering in accordance with the latest approved scientific curricula and using the latest scientific teaching methods such as laboratories and modern teaching methods.

#### Department message

Providing educational programs characterized by depth in areas of specialization and comprehensiveness in engineering foundations. Disseminating engineering knowledge and contributing to its development in the field of specialization. In addition to serving industrial projects and specialists in all sectors of society.

#### Department objectives

- 1- Preparing competent engineering cadres in the specialization of electronics, communications, power and machinery engineering, as well as preparing specialized engineering cadres with higher degrees and for the same specializations above in order to contribute to the comprehensive development and urban renaissance in the country.
- 2- Contributing to providing academic, scientific, practical and applied services and consultations to all public, mixed and private sectors of the state through cooperation agreements as well as through the advisory office of the College of Engineering.
- 3- Preparing research that works and contributes to solving the engineering and industrial problems and obstacles facing industrial facilities and projects in the country.
- 4- Contributing to the dissemination and development of engineering knowledge and transferring the latest developments in the fields of electrical and electronic engineering to engineers in various fields of work by holding continuing education courses and training courses, as well as by publishing scientific research in local and international specialized scientific journals.
- 5- Developing teaching staff by sending a section of teaching staff on scientific delegations to participate in joint conferences, seminars and workshops with Arab, international or international institutions, as well as by granting sabbatical leaves to work in universities outside the country, which helps in exchanging and developing experiences.
- 6- Participate in organizing and holding conferences, seminars, workshops and scientific discussions inside and outside the country.

## 15. Program structure

a) Undergraduate

Semesters / College of Engineering / University of Mosul / First year for the academic year 2022-2023 / Department of Electrical Engineering

First Year / /First Semester					
Notes	Code	Credits	Lab	Theoretical	Title
	EE 101	2	-	2	Human Rights and Democracy
	EE 102	2	-	3	Digital Techniques I
	EE 103	1	3	-	Engineering Drawing, I
	EE 104	3	2	2	Computer fundamentals
	EE 105	2	-	2	Principle of Mechanical Eng. I
	EE 108	3	-	4	Basics of Electrical Engineering I
	EE 106	3	-	4	Calculus I
	EE 107	2	-	3	Electronics Physics I
	EE 109	1	2	-	Laboratories
		19	7	20	Total Hours



Semesters / College of Engineering / University of Mosul / First year for the academic year 2022-2023 / Department of Electrical Engineering

First Year // Second Semester					
Notes	Code	Credits	Lab	Theoretical	Title
	EE 113	1	3	-	Engineering Drawing II
	EE 112	2	-	3	Digital Techniques II
	EE 114	3	2	2	Programing Language
	EE 115	2		2	Principle of Mechanical Eng. II
	EE 118	3	-	4	Basics of Electrical Engineering II
	EE 111	2	-	2	English Language
	EE 116	3	-	4	Calculus II
	EE 117	2	-	3	Electronics Physics II
	EE 119	1	2	-	Laboratories
		19	7	20	Total Hours

Courses / College of Engineering / University of Mosul / second level for the academic year 2022-2023 / Department of Electrical Engineering

Fall Semester / Second Level – E&C								
Notes	Code	Pre-request	Units	Practical hours	Theoretical hours	Subject	Type	
English Subject in this level equal 1 unit because it was 3 units in first level	The name will be standardized by the course unit/college	-	1	-	1	English Language-Pre intermediate	Compulsory	University requirements
Compulsory for Dept. Students	ENGE228	Calculus II	3	-	3	Engineering Mathematics I	Elective	College requirements
	ACOM201	Electrical Circuit Analysis II, Calculus II	4	-	4	Analog Communications	Compulsory	Department requirements
	ENET202	Electrical Circuit Analysis II, Calculus II	4	-	4	Electric Networks	Compulsory	
	COMP206	Computer	3	2	2	Computer Programming	Compulsory	
	ELAB210	Electrical Circuit Analysis II	1	2	-	Electrical Engineering Lab I	Compulsory	
The student should select one subject only (no. of units =2 only)	SOC 203	Physics of Electronics	2	-	2	Solar Cell Systems	Elective	
	ELCI214	Physics of Electronics				Electronic Circuits	Elective	
			18	4	16	Total Hours		

Spring Semester / Second Level – E&C

Notes	Code	Pre-request	Units	Practical hours	Theoretical hours	Subject	Type	
Compulsory for Dept. Students	ENGE 230	Calculus I	3	-	3	Engineering Mathematics II	Elective	College requirements
	PHEC 251	Physics of Electronics	3	-	3	Analog Electronics	Compulsory	Department requirements
	SIGS 252	Electrical Circuit ,Analysis I Calculus II	2	-	2	Systems & Signals	Compulsory	
	EMGT 254	Electrical Circuit ,Analysis II Calculus I	3	-	3	Electromagnetic Theory	Compulsory	
	MAPS 253	Electrical Circuit ,Analysis II Calculus II	2	-	2	& Machines Power Systems	Compulsory	
	DIGT208	-	2	-	2	Digital Techniques	Compulsory	
	ELAB 260	Electrical Engineering Lab I	1	2	-	Electrical Engineering Lab II	Compulsory	
The student should select one subject only (no. of units =2 only)	MODS 262	Computer Programming	2	2	1	Basics of Modeling and Simulation	Elective	
	COAP 264	Computer Programming				Computer Applications		
			18	4	16	Total Hours		

Courses / College of Engineering / University of Mosul / third level for the academic year 2022-2023 / Department of  
Electrical Engineering

Fall Semester / Third Level – E&C								
Notes	Code	Pre-request	Units	Practical hours	Theoretical hours	Subject	Type	
Compulsory for Dept. Students	ENGE 320	Calculus I, II	2	-	2	Numerical Analysis	Elective	College requirements
	ENGC 327	-	2	-	2	Statistics	Compulsory	
	DCOM 301	Analog Communications	2	-	2	Digital Communications I	Compulsory	Department requirements
	RADP 303	Electromagnetic Theory	3	-	3	& Radiation Propagation	Compulsory	
	ELCD 305	Analog Electronics	3	-	3	Electronic Devices	Compulsory	
	DELC 307	Digital Techniques	3	-	3	Digital Electronics	Compulsory	
	ELAB 309	Electrical Engineering Lab II	2	6	-	& Electronics Communications Lab I	Compulsory	
The student should select one subject only (no. of units =2 only)	PWEL 311	Electrical Circuit Analysis I	2	-	2	Power Electronics	Elective	
	SPTC 357	Analog Communications				Special Topics in Communications		
The student should select one subject only (no. of units =2 only)	RENE 316	Electrical Circuit Analysis I	2	-	2	Renewable Energy	Elective	
	ELCD 312	Electrical Circuit Analysis I				Electrical Circuits Design		
			21	6	19	Total Hours		

Spring Semester / Third Level – E&C								
Notes	Code	Pre-request	Units	Practical hours	Theoretical hours	Subject	Type	
	-	-	2	-	2	English Language Intermediate	Compulsory	University requirements
	ENGC 326	-	2	-	2	Engineering Economic	Compulsory	College requirements
	MINC 350	Electrical Circuit Analysis I	3	-	3	Electrical Measurements	Compulsory	Department requirements
	ICOS 352	Signals & Systems	3	-	3	Introduction to Control Systems	Compulsory	
	COME 351	Computer Programming	3	-	3	Computer Architecture	Compulsory	
	DCOM 353	Digital Communications I	3	-	3	II Digital Communications	Compulsory	
	ELAB 355	Electronic & Communication Lab 1	2	6	-	& Electronics Communications Lab II	Compulsory	
The student should select one subject only (no. of units =2 only)	PCON 362	Digital Techniques	2	-	2	Programmable Controller	Elective	
	AINT 364	Digital Techniques				Artificial Intelligence		
			21	6	18	Total Hours		

Note: The student is required to complete the summer training after the end of the second semester of the third level

Courses / College of Engineering / University of Mosul / fourth level for the academic year 2022-2023 / Department of  
Electrical Engineering

Fall Semester / Fourth Level – E&C								
Notes	Code	Pre-request	Units	Practical hours	Theoretical hours	Subject	Type	
	SATC 401	Digital Communication II	2	-	2	Satellite Communications	Compulsory	Department requirements
	COSA 402	Introduction to Control Systems	4	-	4	Control Systems Analysis	Compulsory	
	CNET 403	Digital Communication II	3	-	3	Computer Networks	Compulsory	
	DSIP405	Signals & Systems	2	-	2	Digital Signal Processing	Compulsory	
	MIWA 411	Analog Electronics	2	-	2	Microwaves	Compulsory	
	ELAB 407	Electronic & Communication Lab II	2	6	-	& Electronics Communications Lab III	Compulsory	
	GPRO 409	All compulsory department requirements for the third level	2	-	2	Graduation Project I	Compulsory	
The student should select one subject only (no. of units =2 only)	FOCS 415	Digital Communication II	2	-	2	Fiber-Optic Communication Systems	Elective	
	RADAR 413	Digital Communication II				RADAR		
			19	6	17	Total Hours		

Spring Semester / Fourth Level – E&C

Notes	Code	Pre-request	Units	Practical hours	Theoretical hours	Subject	Type	
	UOMC 104	-	2	-	2	Professional Ethics	Compulsory	University requirements
	-	-	2	-	2	-English Language Upper Intermediate	Compulsory	
	ENGC425		2	-	2	Engineering Management	Compulsory	College requirements
	MELC453	Electronic Devices	4	-	4	Microelectronics	Compulsory	Department requirements
	MCOM451	Satellite Communication	3	-	3	Mobile Communications	Compulsory	
	GPRO457	Graduation Project I	2	-	2	Graduation Project II	Compulsory	
	ELAB455	Electronics & Communications Lab III	2	6	-	Electronics & Communications Lab IV	Compulsory	
The student should select one subject only (no. of units =2 only)	WNSE 459	Computer Networks	2	-	2	Wireless Networks & Security	Elective	
	CINT461	Computer Architecture				Computer Interface Systems		
	DIMP463	Digital Signal Processing				Digital Image Processing		
			19	6	17	Total Hours		

Below are the links to download the curriculum vocabulary for the Department of Electrical Engineering:

Study subject file	Subject	Academic level	No.
<a href="https://drive.google.com/file/d/1DR87hpgb4O90QCAgpLOqzT4RnHWLcZk6/view?usp=sharing">https://drive.google.com/file/d/1DR87hpgb4O90QCAgpLOqzT4RnHWLcZk6/view?usp=sharing</a>	English	First Level	1
<a href="https://drive.google.com/file/d/17gygpB7bSwiYYCnaDvPHRo6DRnOLwWPm/view?usp=sharing">https://drive.google.com/file/d/17gygpB7bSwiYYCnaDvPHRo6DRnOLwWPm/view?usp=sharing</a>	Calculus I		2
<a href="https://drive.google.com/file/d/15C1uwqZGQVag6CrvCSUGRbJhhnBs7Wxj/view?usp=sharing">https://drive.google.com/file/d/15C1uwqZGQVag6CrvCSUGRbJhhnBs7Wxj/view?usp=sharing</a>	Engineering		3
<a href="https://drive.google.com/file/d/1iU9IK4STDVO-L-bGiqsxnJzN5qvs5MnK/view?usp=sharing">https://drive.google.com/file/d/1iU9IK4STDVO-L-bGiqsxnJzN5qvs5MnK/view?usp=sharing</a>	physics		4
<a href="https://drive.google.com/file/d/1MXzGAP97DujN6UHJj28pKLEniv7CIZOx/view?usp=sharing">https://drive.google.com/file/d/1MXzGAP97DujN6UHJj28pKLEniv7CIZOx/view?usp=sharing</a>	Electrical Circuit Analysis I		5
<a href="https://drive.google.com/file/d/1ouEGwOcmFx12sc1_nskdLAmKEHtnIF8P/view?usp=sharing">https://drive.google.com/file/d/1ouEGwOcmFx12sc1_nskdLAmKEHtnIF8P/view?usp=sharing</a>	Environmental Pollution		6
<a href="https://drive.google.com/file/d/1IRKW2psvkD_QCOSiNh-8WQ752hI3IS_p/view?usp=sharing">https://drive.google.com/file/d/1IRKW2psvkD_QCOSiNh-8WQ752hI3IS_p/view?usp=sharing</a>	Calculus II		7
<a href="https://drive.google.com/file/d/1A2pC1Qaf0DSn8_VHhkJPSbx9Zwc_bnn/view?usp=sharing">https://drive.google.com/file/d/1A2pC1Qaf0DSn8_VHhkJPSbx9Zwc_bnn/view?usp=sharing</a>	Auto-CAD		8
<a href="https://drive.google.com/file/d/17O_LmYM-JWaRDqnh-x0t4G2CKqoT7iMb/view?usp=sharing">https://drive.google.com/file/d/17O_LmYM-JWaRDqnh-x0t4G2CKqoT7iMb/view?usp=sharing</a>	Engineering Mechanics		9
<a href="https://drive.google.com/file/d/12x8kYJhKt7C6uzDvmBqSBMfsiGe9IDD/view?usp=sharing">https://drive.google.com/file/d/12x8kYJhKt7C6uzDvmBqSBMfsiGe9IDD/view?usp=sharing</a>	Electrical Circuit Analysis II		10
<a href="https://drive.google.com/file/d/1hCeUzqqbA_KHi3SfJ7Y89O7E7IK5W8_I/view?usp=sharing">https://drive.google.com/file/d/1hCeUzqqbA_KHi3SfJ7Y89O7E7IK5W8_I/view?usp=sharing</a>	Electronics physics		11



Study subject file	Subject	Academic level	No.
<a href="https://drive.google.com/file/d/1qIIHUpUHfISD5sO78kgRaIC6nGEzxW_A/view?usp=sharing">https://drive.google.com/file/d/1qIIHUpUHfISD5sO78kgRaIC6nGEzxW_A/view?usp=sharing</a>	Engineering Mathematics I	Second Level	1
<a href="https://drive.google.com/file/d/1RnJTtYGMkDCG-4Lo0ZfJQI6z7Lbkx58Ws/view?usp=sharing">https://drive.google.com/file/d/1RnJTtYGMkDCG-4Lo0ZfJQI6z7Lbkx58Ws/view?usp=sharing</a>	Electrical Engineering Lab I		2
<a href="https://drive.google.com/file/d/1wtBTLNiLz4TmMiE8IkU7FSxe5H94m89p/view?usp=sharing">https://drive.google.com/file/d/1wtBTLNiLz4TmMiE8IkU7FSxe5H94m89p/view?usp=sharing</a>	Solar Cell Systems		3
<a href="https://drive.google.com/file/d/16N6TS1Wwnn3OsNjK1XfquvI14AxUY2_G/view?usp=sharing">https://drive.google.com/file/d/16N6TS1Wwnn3OsNjK1XfquvI14AxUY2_G/view?usp=sharing</a>	Electronic circuits		4
<a href="https://drive.google.com/file/d/1N3G7S4ELCPVRsG4Ps-Renzs1PK5oU5Bx/view?usp=sharing">https://drive.google.com/file/d/1N3G7S4ELCPVRsG4Ps-Renzs1PK5oU5Bx/view?usp=sharing</a>	Digital technologies		5
<a href="https://drive.google.com/file/d/1gng3L-vcVS8RuXZkS7D5OvxSllHm9oYe/view?usp=sharing">https://drive.google.com/file/d/1gng3L-vcVS8RuXZkS7D5OvxSllHm9oYe/view?usp=sharing</a>	Electronic basics		6
<a href="https://drive.google.com/file/d/1zY_HVe0MXwOCMOKjS2EeS8SXqLRcqzOU/view?usp=sharing">https://drive.google.com/file/d/1zY_HVe0MXwOCMOKjS2EeS8SXqLRcqzOU/view?usp=sharing</a>	Analog electronics		7
<a href="https://drive.google.com/file/d/1uHFt9O2_Z2LV0a7RbaaxopNW1CJeNrto/view?usp=sharing">https://drive.google.com/file/d/1uHFt9O2_Z2LV0a7RbaaxopNW1CJeNrto/view?usp=sharing</a>	Signals and systems		8
<a href="https://drive.google.com/file/d/1zwqatGEreTZwgOF05A1p5O3Ppwmfg7mD/view?usp=sharing">https://drive.google.com/file/d/1zwqatGEreTZwgOF05A1p5O3Ppwmfg7mD/view?usp=sharing</a>	Machines and power systems		9
<a href="https://drive.google.com/file/d/1ajIshWvzKxpP2_bpM3Eiet1ddZrqqRIp/view?usp=sharing">https://drive.google.com/file/d/1ajIshWvzKxpP2_bpM3Eiet1ddZrqqRIp/view?usp=sharing</a>	Electrical Engineering Lab II		10
<a href="https://drive.google.com/file/d/1L7LNBWtuN_m0cge2ACv_d-9wJLlnwWSO/view?usp=sharing">https://drive.google.com/file/d/1L7LNBWtuN_m0cge2ACv_d-9wJLlnwWSO/view?usp=sharing</a>	Power Electronics I		11
<a href="https://drive.google.com/file/d/1wJqLTaRKcel1d10uvMRSLK0zpUufgTID/view?usp=sharing">https://drive.google.com/file/d/1wJqLTaRKcel1d10uvMRSLK0zpUufgTID/view?usp=sharing</a>	Distribution systems		12

Study subject file	Subject	Academic level	No.
<a href="https://drive.google.com/file/d/1kM6tP2zipr6DtTD5yPRVwPPAr0eMcbUi/view?usp=sharing">https://drive.google.com/file/d/1kM6tP2zipr6DtTD5yPRVwPPAr0eMcbUi/view?usp=sharing</a>	Numerical analyses	Third Level	1
<a href="https://drive.google.com/file/d/1601fYEKM08AMhSqtIKRZiBypd38lWvnX/view?usp=sharing">https://drive.google.com/file/d/1601fYEKM08AMhSqtIKRZiBypd38lWvnX/view?usp=sharing</a>	Statistics		2
<a href="https://drive.google.com/file/d/1QEE97mWD1BJDo7e3xeuHt-213u8mTlIo6/view?usp=sharing">https://drive.google.com/file/d/1QEE97mWD1BJDo7e3xeuHt-213u8mTlIo6/view?usp=sharing</a>	Digital communications 1		3
<a href="https://drive.google.com/file/d/1Ad5KCWfKVvvnC7SovGyDjsCNDuKbszFn/view?usp=sharing">https://drive.google.com/file/d/1Ad5KCWfKVvvnC7SovGyDjsCNDuKbszFn/view?usp=sharing</a>	& Radiation Propagation		4
<a href="https://drive.google.com/file/d/1z_vUNZ6mqt1hQ_Tbv96UKPtZOabtFLNq/view?usp=sharing">https://drive.google.com/file/d/1z_vUNZ6mqt1hQ_Tbv96UKPtZOabtFLNq/view?usp=sharing</a>	Electronic Devices		5
<a href="https://docs.google.com/document/d/18w5J2PXDAJiSdpxUWXlGUcsmT5UtDcX6/edit?usp=sharing&amp;sd=true&amp;rtpof=true&amp;645849946868231">https://docs.google.com/document/d/18w5J2PXDAJiSdpxUWXlGUcsmT5UtDcX6/edit?usp=sharing&amp;sd=true&amp;rtpof=true&amp;645849946868231</a>	Digital Electronics		6
<a href="https://drive.google.com/file/d/1kdlGfyv_rpC-gq_v-m5XYUI_55YQ4DZP/view?usp=sharing">https://drive.google.com/file/d/1kdlGfyv_rpC-gq_v-m5XYUI_55YQ4DZP/view?usp=sharing</a>	E & C Lab 1		7
<a href="https://drive.google.com/file/d/1xqj5-qYPm8BBPKmSjaonSSXmetGgHX5R/view?usp=sharing">https://drive.google.com/file/d/1xqj5-qYPm8BBPKmSjaonSSXmetGgHX5R/view?usp=sharing</a>	Power electronics		8
<a href="https://drive.google.com/file/d/1jvvJYS0zevDLMgIsk6XvPOg0X--bAws/view?usp=sharing">https://drive.google.com/file/d/1jvvJYS0zevDLMgIsk6XvPOg0X--bAws/view?usp=sharing</a>	Special topics in communications		9
<a href="https://drive.google.com/file/d/1RDDiD_uAkgLAa2XUe1srkaZc50udHqZ6/view?usp=sharing">https://drive.google.com/file/d/1RDDiD_uAkgLAa2XUe1srkaZc50udHqZ6/view?usp=sharing</a>	Renewable energy		10
<a href="https://drive.google.com/file/d/1COFPXowqS0ROWNC0LD7iLhtimXOsd5Zm/view?usp=sharing">https://drive.google.com/file/d/1COFPXowqS0ROWNC0LD7iLhtimXOsd5Zm/view?usp=sharing</a>	Electrical circuit design		11
<a href="https://drive.google.com/file/d/1cuF9V9rD9Cy_GuV-ffACWX_rFoe_EcU3/view?usp=sharing">https://drive.google.com/file/d/1cuF9V9rD9Cy_GuV-ffACWX_rFoe_EcU3/view?usp=sharing</a>	Transmission Systems		12

<a href="https://drive.google.com/file/d/1LTZcV6_fTeaxP1mA_MhZmUxXdaDw8ur6/view?usp=sharing">https://drive.google.com/file/d/1LTZcV6_fTeaxP1mA_MhZmUxXdaDw8ur6/view?usp=sharing</a>	Power electronics 2	13
<a href="https://drive.google.com/file/d/16_j2IJHvCbQ2wplArId2cAdOEy_QM1dI/view?usp=sharing">https://drive.google.com/file/d/16_j2IJHvCbQ2wplArId2cAdOEy_QM1dI/view?usp=sharing</a>	Induction machines	14
<a href="https://drive.google.com/file/d/1t_9obCvG7wQ4WYeXElj7XnRfNDXL7OxL/view?usp=sharing">https://drive.google.com/file/d/1t_9obCvG7wQ4WYeXElj7XnRfNDXL7OxL/view?usp=sharing</a>	P & M Lab 1	15
<a href="https://drive.google.com/file/d/1fTuLteSwAPo0RpW9HPbp3eX5CTE7C2u9/view?usp=sharing">https://drive.google.com/file/d/1fTuLteSwAPo0RpW9HPbp3eX5CTE7C2u9/view?usp=sharing</a>	Microprocessors	16
<a href="https://drive.google.com/file/d/1VdONsR0I-Xvimmzqnpw27m_ke8XVoj7k/view?usp=sharing">https://drive.google.com/file/d/1VdONsR0I-Xvimmzqnpw27m_ke8XVoj7k/view?usp=sharing</a>	English language - intermediate	17
<a href="https://drive.google.com/file/d/1tobfkDQcCH6cq303rQNbZU5iQ-j197IS/view?usp=sharing">https://drive.google.com/file/d/1tobfkDQcCH6cq303rQNbZU5iQ-j197IS/view?usp=sharing</a>	Engineering economics	18
<a href="https://drive.google.com/file/d/1rW_YiuOq5KB4EFSSA6zCFjqEIE017DpC/view?usp=sharing">https://drive.google.com/file/d/1rW_YiuOq5KB4EFSSA6zCFjqEIE017DpC/view?usp=sharing</a>	Introduction to control systems	19
<a href="https://drive.google.com/file/d/1jMMktsiKSeCOsZr9kxLSbvvSvwP1mfkp/view?usp=sharing">https://drive.google.com/file/d/1jMMktsiKSeCOsZr9kxLSbvvSvwP1mfkp/view?usp=sharing</a>	Computer architecture	20
<a href="https://drive.google.com/file/d/1XA-gT1a5x6MhI6mCu7Pve2-YP0PVCqli/view?usp=sharing">https://drive.google.com/file/d/1XA-gT1a5x6MhI6mCu7Pve2-YP0PVCqli/view?usp=sharing</a>	Digital communications 2	21
<a href="https://drive.google.com/file/d/1OMEMOKnxU9CXuVhownjyjF2RrEq1yp5I/view?usp=sharing">https://drive.google.com/file/d/1OMEMOKnxU9CXuVhownjyjF2RrEq1yp5I/view?usp=sharing</a>	Programmable controllers	22
<a href="https://drive.google.com/file/d/1pLUWBVfiOmAICps1vTWREnsqN8v8r356/view?usp=sharing">https://drive.google.com/file/d/1pLUWBVfiOmAICps1vTWREnsqN8v8r356/view?usp=sharing</a>	Electronic and communications systems	23
<a href="https://drive.google.com/file/d/1l_YiE1OpuvCm_3fXTAHjHJJVYFCVXRuT/view?usp=sharing">https://drive.google.com/file/d/1l_YiE1OpuvCm_3fXTAHjHJJVYFCVXRuT/view?usp=sharing</a>	Synchronous machines	24

Study subject file	Subject	Academic level	No.
<a href="https://drive.google.com/file/d/1UIJsaIcW4iD_nA2k7OBq1JhWIwHD67vh/view?usp=sharing">https://drive.google.com/file/d/1UIJsaIcW4iD_nA2k7OBq1JhWIwHD67vh/view?usp=sharing</a>	Satellite communications	Fourth Level	1
<a href="https://drive.google.com/file/d/17-pNmZ5uOCG-rr2_qHU7P75FJTLh9Yo-/view?usp=sharing">https://drive.google.com/file/d/17-pNmZ5uOCG-rr2_qHU7P75FJTLh9Yo-/view?usp=sharing</a>	Control systems analysis		2
<a href="https://drive.google.com/file/d/1Ns0G_ozJ9YZdg-U3ARZDgSE2TCCVbnxa/view?usp=sharing">https://drive.google.com/file/d/1Ns0G_ozJ9YZdg-U3ARZDgSE2TCCVbnxa/view?usp=sharing</a>	computer networks		3
<a href="https://drive.google.com/file/d/1zP-3T7NNtzyIulSnIh3KQYBAWwn_rRE/view?usp=sharing">https://drive.google.com/file/d/1zP-3T7NNtzyIulSnIh3KQYBAWwn_rRE/view?usp=sharing</a>	Digital signal processing		4
<a href="https://drive.google.com/file/d/1HgOj5zJ1n8EOtwrgqT8WxhGB7qFIORTp/view?usp=sharing">https://drive.google.com/file/d/1HgOj5zJ1n8EOtwrgqT8WxhGB7qFIORTp/view?usp=sharing</a>	Microwaves		5
<a href="https://drive.google.com/file/d/11VBhbao6xYD4CZjZ66jNDg-CYVon-10j/view?usp=sharing">https://drive.google.com/file/d/11VBhbao6xYD4CZjZ66jNDg-CYVon-10j/view?usp=sharing</a>	Fiber optic communications systems		6
<a href="https://drive.google.com/file/d/1Yty_518XCfMbSk5-L4vLI4ImGgC1kUKC/view?usp=sharing">https://drive.google.com/file/d/1Yty_518XCfMbSk5-L4vLI4ImGgC1kUKC/view?usp=sharing</a>	Power systems analysis		7
<a href="https://drive.google.com/file/d/1Yt6_x0-JF7JiUXAMVt4ogGr4pEy9YD_/view?usp=sharing">https://drive.google.com/file/d/1Yt6_x0-JF7JiUXAMVt4ogGr4pEy9YD_/view?usp=sharing</a>	Single phase induction motors		8
<a href="https://drive.google.com/file/d/1ORPbvg-2wK_rDM5o82qIeZsPIBpOAKCz/view?usp=sharing">https://drive.google.com/file/d/1ORPbvg-2wK_rDM5o82qIeZsPIBpOAKCz/view?usp=sharing</a>	Power generating stations		9
<a href="https://drive.google.com/file/d/1eOCNqeqWGEkUdUiIjuvxBMoAmTJqo2gi/view?usp=sharing">https://drive.google.com/file/d/1eOCNqeqWGEkUdUiIjuvxBMoAmTJqo2gi/view?usp=sharing</a>	P &M Lab 3		10
<a href="https://drive.google.com/file/d/1vphUE5imqC2xbcFH3kVIvaSTlgLHipNb/view?usp=sharing">https://drive.google.com/file/d/1vphUE5imqC2xbcFH3kVIvaSTlgLHipNb/view?usp=sharing</a>	High Voltage DC		11

<a href="https://drive.google.com/file/d/1AOtvrAiTNnOiBuveL6hknupooAJVa1PP/view?usp=sharing">https://drive.google.com/file/d/1AOtvrAiTNnOiBuveL6hknupooAJVa1PP/view?usp=sharing</a>	Smart power grid systems		12
<a href="https://drive.google.com/file/d/16p-LKT_am7qUltmw-Jsc6hrU3Fz1OC1I/view?usp=sharing">https://drive.google.com/file/d/16p-LKT_am7qUltmw-Jsc6hrU3Fz1OC1I/view?usp=sharing</a>	Professional ethics		13
<a href="https://drive.google.com/file/d/1iA5r6wvKnbbJvTvVUf1T-iK-QmZ0-Dtq/view?usp=sharing">https://drive.google.com/file/d/1iA5r6wvKnbbJvTvVUf1T-iK-QmZ0-Dtq/view?usp=sharing</a>	English language - post-intermediate		14
<a href="https://drive.google.com/file/d/1LJd7jakMvc_xgUiQiWH3Sd5Wk20r7CeF/view?usp=sharing">https://drive.google.com/file/d/1LJd7jakMvc_xgUiQiWH3Sd5Wk20r7CeF/view?usp=sharing</a>	Engineering Management		15
<a href="https://drive.google.com/file/d/1e58x2ir0T1HENI3g24yAi7TNDQFfihbA/view?usp=sharing">https://drive.google.com/file/d/1e58x2ir0T1HENI3g24yAi7TNDQFfihbA/view?usp=sharing</a>	Microelectronics		16
<a href="https://drive.google.com/file/d/1iJTuzgjhmk7h5Wa09AUHop_7Eu2LrJ0b/view?usp=sharing">https://drive.google.com/file/d/1iJTuzgjhmk7h5Wa09AUHop_7Eu2LrJ0b/view?usp=sharing</a>	Mobile communications		17
<a href="https://drive.google.com/file/d/1VMwW7LI3haczXbr78owi68gwzUkengVt/view?usp=sharing">https://drive.google.com/file/d/1VMwW7LI3haczXbr78owi68gwzUkengVt/view?usp=sharing</a>	Wireless network security		18
<a href="https://drive.google.com/file/d/1hVqRjZee0xDvrK-pA3sxcdCd5AGNqwnF/view?usp=sharing">https://drive.google.com/file/d/1hVqRjZee0xDvrK-pA3sxcdCd5AGNqwnF/view?usp=sharing</a>	Interface systems		19
<a href="https://drive.google.com/file/d/1EhQfqdIcrNE0333Nh0HFLwkZm0qCnV_M/view?usp=sharing">https://drive.google.com/file/d/1EhQfqdIcrNE0333Nh0HFLwkZm0qCnV_M/view?usp=sharing</a>	Protection and operation systems		20
<a href="https://drive.google.com/file/d/1qtcVhV0Sd0rcVBkq2A2Xotqtir1ZZRFJ/view?usp=sharing">https://drive.google.com/file/d/1qtcVhV0Sd0rcVBkq2A2Xotqtir1ZZRFJ/view?usp=sharing</a>	High Voltage engineering		21
<a href="https://drive.google.com/file/d/1NzS0MJUyQq1D4POk55X-VihFH1LNC8mx/view?usp=sharing">https://drive.google.com/file/d/1NzS0MJUyQq1D4POk55X-VihFH1LNC8mx/view?usp=sharing</a>	Special electrical machines	22	

<a href="https://drive.google.com/file/d/139LJSMaiQMsQoQqK5oR-dmWMEcWzMpPT/view?usp=sharing">https://drive.google.com/file/d/139LJSMaiQMsQoQqK5oR-dmWMEcWzMpPT/view?usp=sharing</a>	P & M Lab 4		23
<a href="https://drive.google.com/file/d/118P3wwdj8KmWo3q7yIcYr-sXsAei_RiY/view?usp=sharing">https://drive.google.com/file/d/118P3wwdj8KmWo3q7yIcYr-sXsAei_RiY/view?usp=sharing</a>	Electric Drives		24