

Description Of The Academic Program

This programme specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching institution	The University of Mosul
2. University Department /Centre	College of Engineering/ Department of Mechatronics Engineering
3. Program Title	Mechatronics Engineering
4. Title of Final Award	Bachelor of Science
5. Modes of Attendance offered	Courses
6. Accreditation	There is none - except for the instructions of the university and college. Noting that the department does not have administrative authority and funding necessary to implement such program.
7. Other external influences	Higher-level decisions
8. Date of production/ revision of this specification	2021-2022

9. Aims of the program

I. Successfully adapt to new situations in their professional careers within the global job market, by using the essential tools and fundamental background of the disciplines of Mechatronics Engineering in the areas of Electric and electronics sciences, computer sciences, Thermal and Fluid Sciences, Material Science, Machine Design and Production Engineering, robotics, communication, artificial intelligence, and automation; Or pursue additional degrees through graduate studies.

II. Apply design methodology in relation to mechatronics engineering, by incorporating the use of design standards, realistic constraints, and consideration of the economic, environmental, and social impact of the design.

III. Engage in professional service such as participation in professional societies, and to always consider and support professional ethics.

IV. have a constant desire for professional development through life-long learning activities, self-confidence, creativity and leadership.

10. Learning outcomes, Teaching, Learning and assessment methods

A. Cognitive goals

A1. Basic, applied, and engineering sciences principles required for understanding of the specialization of mechatronics engineering (such as mathematics, electrical engineering, physics, mechanical engineering, and computer engineering).

A2. Mechatronics engineering sciences, such as electromechanical devices, control devices, digital systems, automation, and robots.

A3. Professional foundations and associated communication skills, such as perform presentation and writing reports, as well as knowledge of economic, legal, health, social, and safety limitations.

B. The skills goals special to the program.

B1. Solve and formulate engineering problems in general, especially those related to mechatronics engineering

B2. Identify and formulate engineering problems and apply mathematical knowledge, science, engineering methods, and creativity skills to solve problems in the field of mechatronics engineering.

B3. Analyzing problems by interpreting and assessing numerical data and applying mathematical approaches.

B4. Preparing technical and operational specifications of components, systems, and electrical and mechanical devices

Teaching and Learning Methods

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

Assessment methods

- Mid-term and final exams
- Short exams (quizzes)
- Reports
- Practical exams

- Presentations
<p>C. Affective and value goals</p> <p>C1. Conducting and developing practical electromechanical system experiments, as well as analyzing and interpreting practical data linked to energy systems.</p> <p>C2. Developing computer program and utilizing pre-written programs to deal with issues in the subject of specialization</p> <p>C3. Apply cutting-edge engineering methods, skills, and equipment, as well as sophisticated intelligent approaches to control mechanical and electrical system.</p> <p>C4.</p>
Teaching and learning methods
<ul style="list-style-type: none"> - Theoretical lectures - Discussion sessions - Laboratory experiments - Computer laboratories - Projects - Industrial training
Assessment Methods
<ul style="list-style-type: none"> - Semester and final exams - Short exams - Reports - Practical exams
<p>D. General and Transferable skills (other skills relevant to employability and personal development)</p> <p>D1. Work professionally and ethically, either on individual projects or as part of a multidisciplinary team.</p> <p>D2. Writing technical reports and delivering informative presentations.</p> <p>D3. Effective use of information technology related to engineering applications in general and the field of mechatronics and control in particular.</p> <p>D4. The potential for initiating scientific research projects.</p>
Teaching and learning Methods
<ul style="list-style-type: none"> - Theoretical lectures - Discussion sessions - Laboratory experiments - Computer laboratories - Projects - Industrial training
Assessment methods

- Semi-term and final exams
- Short exams
- Reports
- Practical exams
- Presentations

11. Personal Developmental Planning

Student development, the teacher's plan for student development, which includes Internet and IT use, laboratory safety procedures, and building a student's academic personality capable of competitiveness, discussion, and problem solving.

12. Admission criteria (rules governing enrollment in a college or institution)

- 1- Central distribution by the Ministry of Higher Education determines those accepted into the College of Engineering.
- 2- The departments select who are accepted, where competition takes place between them based on the total marks - in addition the total of the differentiation lessons.
- 3- Transfers from other departments and institutions are allowed subjected to higher regulations and instructions.

13. Key sources of information about the programme

- The programme has been developed from many sources.
- High-level Instruction.
- Recent advances and emerging sciences in the specialized field.

14. Department vision, mission and goals

[/https://uomosul.edu.iq/en/engineering/vision-message-and-goals-2](https://uomosul.edu.iq/en/engineering/vision-message-and-goals-2)

15. Programme Structure

Mechatronics Department / First Level

(Fall semester) / First Level								
	Type	Subject	Theoretical hours	Practical hours	Units	Pre-request	Code	Notes
University requirements	Compulsory	English language	3	-	3	-	UOMC101	
	Compulsory	Computer	2	2	3	-	UOMC102	
College requirements	Compulsory	Calculus I	3	-	3	-	ENGC121	
	Compulsory	Engineering Drawing	-	3	1	-	ENGC123	
Department requirements	Compulsory	Electric circuit analysis	2	2	3	-	OECAN10	
	Compulsory	Engineering mechanics I (static)	3	-	3	-	EMSA101	
	Compulsory	Physics	2	-	2	-	PHY102	
	Total hours		15	18	18			

(Spring semester)/ First Level								
	Type	Subject	Theoretical hours	Practical hours	Units	Pre-request	Code	Notes
University requirements	Compulsory	Arabic language	2		2		UOMC100	
	Compulsory	Rights and freedom	2		2		UOMC103	
	Elective	Manufacturing processes	2		2		-	Student choose one
	Elective	Environmental pollution	2		2		-	
	Elective	Information technology	2		2		-	
	Elective	Electrical installation	2		2		-	
	Elective	Modelling of building materials	2		2		-	
College requirements	Compulsory	Calculus II	3		3	Calculus I	ENG122	
	Compulsory	Auto cad		3	1	Engineering drawing	ENG124	
Department requirements	Compulsory	Strength of materials	2		2	Engineering mechanics (static)	STMT150	
	Compulsory	Algorithm and computer programing	1	2	2	Computer	ALCP151	

	Compulsory	Engineering materials and manufacturing	3	2	4		ENMM152	
	Total hours		15	7	18			

Mechatronics Department / Second Level

(Fall semester)/ Second Level								
	Type	Subject	Theoretical hours	Practical hours	Units	Pre-request	Code	Notes
University requirements	Compulsory	Professional ethics	2		2		UOMC104	
College requirements	Compulsory	Statistics	2		2		ENG227	
	Compulsory	Engineering math I	3		3	Calculus I,II	ENG228	Compulsory for department student
Department requirements	Compulsory	Engineering mechanics II(dynamic)	2		2	Engineering mechanic I	EMDY201	
	Compulsory	Electrical machine	2	2	3	Electrical circuit analysis	ELMA202	
	Compulsory	Thermodynamic and heat transfer	2		2		THHT203	
	Compulsory	Electronic principle	2	2	3	Electrical circuit analysis	ELCP204	
Total hours			15	4	17			

(Spring semester)/ Second Level

	Type	Subject	Theoretical hours	Practical hours	Units	Pre-request	Code	Notes
University requirements	Compulsory	English language pre intermediate	1		1			last level take 3 units
College requirements	Compulsory	Engineering economics	2		2		ENGC226	
	Compulsory	Engineering math II	3		3		ENGE230	Compulsory for dep.
Department requirements	Compulsory	Fluid mechanics	2		2	and Thermodynamic heat transfer	FLME251	
	Compulsory	Digital logic	2	2	3	Electronic principle	DILO252	
	Compulsory	Electromechanical systems	2	2	3	Electrical machine	ELES253	
	Compulsory	Signal and system	2		2	Calculus II	SISY254	
	Elective	Introduction to mechanical design	3		3	Strength of materials	INMD261	Student choose one
		Composite materials	3		3	Engineering materials and manufacturing process	COMA262	
		Advanced heat transfer	3		3	Thermodynamic and heat transfer	AHTR263	

		Renewable energy	3		3	Thermodynamic and heat transfer	REN264	
Total hours			17	4	19			

Mechatronics Department / Third Level

(Fall semester) /Third Level								
	Type	Subject	Theoretical hours	Practical hours	Units	Pre-request	Code	Notes
University requirements	Compulsory	English language intermediate	2		2			
College requirements	Compulsory	Numerical analysis	2		2	Calculus I,II	ENGE320	Compulsory for depart.
Department requirements	Compulsory	Mechanism and vibration	2		2	Engineering mechanics II dynamics	MEVI300	
	Compulsory	Mechanics engineering lab.		2	1	Engineering mechanics II dynamics	MLAB301	
	Compulsory	Modelling and simulation	1	2	2	Signal and system	MODS302	
	Compulsory	Measurement and instrumentation	2	2	3	Electronic principle	MEIN303	
	Compulsory	Microprocessors and assembly language	2	2	3	Digital logic	MICA304	
	Elective	Signal processing	3		3	Signal and system	SPRO361	Student choose one
	Elective	Image processing	3		3		IMPR362	
	Total hours		14	8	18			

(Spring semester)/ Third Level								
Notes	Type	Subject	Theoretical hours	Practical hours	Units	Pre-request	Code	Notes
Department requirements	Compulsory	Design of machine element	3		3	Engineering mechanics II dynamic	DMEL350	
	Compulsory	Power electronics and drives	2	2	3	Electronic principle	PELD351	
	Compulsory	Control systems	2	2	3	Modelling and simulation	2CONS35	
	Compulsory	Microcontroller system design	2	2	3	Microprocessors and assembly language	MCSD353	
	Compulsory	Theory of machine	2		2	Engineering mechanics II dynamic	THMH354	
	Compulsory	Hydraulic and pneumatic systems	2		2	Fluid mechanics	HPNS355	
	Elective	Solid modelling	3		3		SMOD363	Student choose one
		Industrial LAN	3		3		ILAN364	
		Communication engineering	3		3		COEN365	
	Total hours			16	6	19		

Note :Summer Training is one of the requirements that the student has to apply during July or August.

Mechatronics Department / Fourth Level

(Fall semester) / Fourth Level								
	Type	Subject	Theoretical hours	Practical hours	Units	Pre-request	Code	Notes
College requirements	Elective	Public safety	2		2		ENGE429	Compulsory for depa.
Department requirements	Compulsory	Robotics	2	2	3	Theory of machine	ROTI400	
	Compulsory	Design of machine elements II	3		3	Design of machine element I	DMEL401	
	Compulsory	Modern control systems	2	2	3	Control system	MOCS402	
	Compulsory	Graduation project I	2		2	All compulsory department requirements for the third level	ENGP403	
	Elective	Special topics in mechatronics	3		3		STME461	Student choose one
	Elective	CNC machine	3		3		CNCM462	
	Elective	Building management system	3		3		BMSY463	Student choose one
	Elective	PC interface and data acquisition	2	2	3	Microcontroller and system design	PCID464	

Total hours	16/17	4/6	19			
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(Spring semester) / Fourth Level								
	Type	Subject	Theoretical hours	Practical hours	Units	Pre-request	Code	Notes
University requirements	Compulsory	English language upper intermediate	2		2			
College requirements	Elective	Engineering management	2		2		ENDC425	
Department requirements	Compulsory	Mechatronics systems design	2	2	3	Control system	MSTD450	
	Compulsory	Industrial automation	2	2	3	robotics	INAU451	
	Compulsory	Graduation project II	2		2	Graduation project I	ENGP452	
	Compulsory	Artificial intelligent	2		2		ARIN453	
	Elective	Mobile robot	3		3	robotics	MROB465	Student choose one
Elective	Intelligent control	3		3	Control system	ICON464		
Total hours			15	4	17			

Curriculum Skills Map

Please tick in the relevant boxes where individual programme learning outcomes are being assessed

Programme learning outcomes																	
Year/ Level	Course code	Course Title	Core (C) Title or option(O)	Knowledge and Understanding			Subject-Specific skills				Thinking skills			General and transferable skills (or) other skills relevant to employability and personal development			
				A1	A2	A3	B1	B2	B3	B4	C1	C2	C3	D1	D2	D3	D4
First year	UOMC101	English Language	Core	√		√							√	√			
	UOMC102	Computer		√		√			√		√				√		
	ENGC121	Calculus 1		√				√	√								
	ENGC123	Engineering Drawing		√													
	ECAN100	Electrical Circuit Analysis		√			√				√						
	EMSA101	Engineering Mechanics I (Static)		√			√										
	PHY102	Physics		√	√		√	√			√						
	UOMC100	Arabic Language				√									√		

	ELMA202	Electrical Machine		√				√			√						
	THHT203	Thermodynamic & Heat Transfer		√			√										
	ELCP204	Electronic Principles		√			√				√						
	UOMC201	English Pre-Intermediate				√									√		
	ENGC226	Engineering Economics			√	√			√	√							
	ENGE230	Engineering Mathematics 2		√					√			√					
	FLME251	Fluid Mechanics		√			√										
	DILO252	Digital Logic		√			√										
	ELES253	Electromechanical system			√			√			√						
	SISY254	Signal and Systems			√			√									
	INMD261	Introduction to Mechanical Design	Option		√			√		√							
	COMA262	Composite Materials		√						√							

	AHTR263	Advanced Heat Transfer		√			√											
	REN264	Renewable Energy			√			√		√	√		√					
			Programme learning outcomes															
Year/ Level	Course code	Course Title	Core (C) Title or option(O)	Knowledge and Understanding			Subject-Specific skills				Thinking skills			General and transferable skills (or) other skills relevant to employability and personal development				
				A1	A2	A3	B1	B2	B3	B4	C1	C2	C3	D1	D2	D3	D4	
Third year	UOMC301	English Language	Core			√									√			
	ENGE320	Numerical analysis		√					√			√						
	MEVI300	(Mechanism & Vibration)			√			√										
	MLAB301	Mechanical Eng. Lab.		√			√	√			√		√					
	MODS302	Modeling and Simulation			√					√			√				√	
	MEIN303	Measurements and Instrumentation			√				√			√						

	MICA304	Microprocessors & Assembly Language		√			√											
	SPRO361	Signal processing	Option	√				√		√								
	IMPR362	Image processing			√			√										
	DMEL350	Design of Machine Elements I	Core		√			√		√								
	PELD351	Power Electronics & Drive			√			√			√							
	CONS352	Control Systems			√			√		√								
	MCSD353	Microcontroller system design			√		√											
	THMH354	Theory of Machine			√			√										
	HPNS355	Hydraulic and Pneumatic Systems			√			√			√		√					

	SMOD363	Solid Modelling	Option		√			√				√				√		
	ILAN364	Industrial LAN				√			√		√							
	COEN365	Communication Engineering				√		√			√		√					
				Programme learning outcomes														
Year/ Level	Course code	Course Title	Core (C) Title or option(O)	Knowledge and Understanding			Subject-Specific skills				Thinking skills			General and transferable skills (or) other skills relevant to employability and personal development				
				A1	A2	A3	B1	B2	B3	B4	C1	C2	C3	D1	D2	D3	D4	
Forth year	ENGE429	Public Safety	Core	√		√				√								
	ROTI400	Robotics			√			√			√		√					
	DMEL401	Design of Machine Elements II			√			√										
	MOCS402	Modern Control Systems			√			√			√							
	ENGP403	Graduate project I			√			√		√	√	√	√				√	
	STME461	Special topics in	Option		√			√			√	√	√				√	

		Mechatronics															
	CNCM462	CNC Machine		√			√				√	√			√		
	BMSY463	Building Management System			√				√								√
	PCID464	PC Interface and Data Acquisition		√			√				√				√		
	UOMC401	English Language			√									√			
	ENGC425	Engineering Management		√	√				√								√
	MTSD450	Mechatronics Systems Design		√			√				√	√					√
	INAU451	Industrial Automation	Core	√			√		√	√	√	√					√
	ENGP452	Graduate project II		√			√			√	√	√			√	√	
	ARIN453	Artificial intelligent		√			√				√				√		
	MROB465	Mobile Robot	Option		√			√				√	√			√	

Below are the link of the curriculum for the Mechatronics Engineering Department:

Name of subject	Subject Syllabus link
Mechanic Eng. (Statics)	https://drive.google.com/file/d/14xxlOTEeex_DJhENNZgR9dnXZWxAHnAl/view?usp=drive_link
Calculus II	https://docs.google.com/document/d/1O9A-MMQJG_i4mkeiW4OLaShmGNd7-zI5/edit?usp=drive_link&oid=100149964556847603427&rtpof=true&sd=true
Calculus I	https://docs.google.com/document/d/17wkiO6geet8TaigqaR9O6OiXU5OP6aS9/edit?usp=drive_link&oid=100149964556847603427&rtpof=true&sd=true
Democracy & Human Rights	https://docs.google.com/document/d/1r-XD0mbQglj7KkiyID8uaNtiRzZexKn4/edit?usp=drive_link&oid=100149964556847603427&rtpof=true&sd=true
Information Technology	https://docs.google.com/document/d/1n4lfdimHJ94Zl47fSmJchPGH3iCdNbRk/edit?usp=drive_link&oid=100149964556847603427&rtpof=true&sd=true
English Language-First level	https://drive.google.com/file/d/1WbxBE-ftDdwLU1tcbIOPWiwKb5CTKFCH/view?usp=drive_link
Engineering drawing	https://docs.google.com/document/d/1-YigpxsQVYEv7yusCgc6h45Phbn2DzCH/edit?usp=drive_link&oid=100149964556847603427&rtpof=true&sd=true
Auto_Cad	https://docs.google.com/document/d/1X2o5hx5WJXhw9EAOOLelib0xzHN7Ww3t/edit?usp=drive_link&oid=100149964556847603427&rtpof=true&sd=true
PHYSICS	https://docs.google.com/document/d/1fdLDFPYPk1AVkp8aC3rj28ZLcHs1z9xH/edit?usp=drive_link&oid=100149964556847603427&rtpof=true&sd=true
electrical circuit analysis	https://drive.google.com/file/d/1lrtX10PB7I5ieTzQvly8gPOuVTYi2Ql/view?usp=drive_link
algorithms and Computer programming	https://drive.google.com/file/d/1ifc44pGvLWCsQRBzAAntQikxelPdbwoZ/view?usp=drive_link
Arabic Language	https://docs.google.com/document/d/1GTNOrWCKyj6eMWyoMpU3PSfw9NOJGNXP/edit?usp=drive_link&oid=100149964556847603427&rtpof=true&sd=true
Computer	https://docs.google.com/document/d/1HcXK6ch81Vu8Q4o_kqJ-sKtni22wzefp/edit?usp=drive_link&oid=100149964556847603427&rtpof=true&sd=true
Strength of Materials	https://drive.google.com/file/d/1S5SzoP8g8dBGj3oE9y7K87FG11PoeRy-/view?usp=drive_link
Engineering Materials and Manufacturing Processes	https://drive.google.com/file/d/1IgKs_4l2UPphHhodX9-NndLSZDolQyu/view?usp=drive_link
Engineering Mathematics II	https://docs.google.com/document/d/1BIKj2V8AbdfnHI0xi19Ghc-CGkfKUPnU/edit?usp=drive_link&oid=100149964556847603427&rtpof=true&sd=true
Engineering Mathematics I	https://docs.google.com/document/d/1k4wn_W4vny7YRO-BKGKWSikyR8EAJe2D/edit?usp=drive_link&oid=100149964556847603427&rtpof=true&sd=true
Fluid Mechanics	https://docs.google.com/document/d/1ql7JU09N_PHZ-PNx_MZEgu5UJTqQNXKN/edit?usp=drive_link&oid=100149964556847603427&rtpof=true&sd=true
Electronic principles	https://docs.google.com/document/d/1uCoAjlK5pvtXKD0-tToOotZkbnNOVe_/edit?usp=drive_link&oid=100149964556847603427&rtpof=true&sd=true
professional ethics	https://docs.google.com/document/d/1CjHqqqi8xU9u8o0DmEkvH6XsXvFu4emC/edit?usp=drive_link&oid=100149964556847603427&rtpof=true&sd=true
electrical machine	https://docs.google.com/document/d/1OHZ_1yBZMK_vFW_J7tbart15EHwW_yas/edit?usp=drive_link&oid=100149964556847603427&rtpof=true&sd=true
electromechanical system	https://docs.google.com/document/d/1_FOXDaocwPmQe2hRgR5vLHeBoN24p5s/edit?usp=drive_link&oid=100149964556847603427&rtpof=true&sd=true
English Language – Pre-intermediate	https://drive.google.com/file/d/105oLnSn0Q9I4KY24T_LLrNl0Iu3kSAk/view?usp=drive_link
Statistics	https://docs.google.com/document/d/1p3YczXd2uahbEod9gTooOsz-fn19_Dj-/edit?usp=drive_link&oid=100149964556847603427&rtpof=true&sd=true
Thermodynamics and heat transfer	https://docs.google.com/document/d/1m4aj2KRg4OsJzg3JLeeiwhNQNjWJNDco/edit?usp=drive_link&oid=100149964556847603427&rtpof=true&sd=true
Advanced heat transfer	https://docs.google.com/document/d/1UPQvLcMWW7THsunZ4V9UkgLHwUU-

	znzO/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
Engineering Economics	https://docs.google.com/document/d/1GThK4rHtoB3BuFTesyRZTet_tzEfK8XO/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
Digital Logic	https://drive.google.com/file/d/15snDdV23tJX69pern8AVWojITX9tX_Lw/view?usp=drive_link
Engineering Mechanics II	https://docs.google.com/document/d/1zlM6bI6Qy4VqVYVs9J7IRBkE_XU0ybd/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
Hydraulic and Pneumatic Systems	https://docs.google.com/document/d/1433Citw5oWqIizYuZEUotq3t3OP0hJHD/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
Theory of Machines	https://docs.google.com/document/d/1JWAcBTrt_6-Jfm6XqsN0HheXBi948UnP/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
Mechanisms and Vibration	https://docs.google.com/document/d/1HrNudDIX6veZx-sVBT9LldnfMQ-Zh6Bb/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
Numerical Analysis	https://docs.google.com/document/d/1y4QfOSavx3r6fZjcnb0SsLWhpdY8Gxrb/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
Mechanical Eng. Lab	https://docs.google.com/document/d/1F8ke9cD7D1F1137mnuccM-ekSdz33K4P/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
Modeling and Simulation	https://drive.google.com/file/d/1-ocZW5-YBUtob50gf0SMsDh18d2u7SG/view?usp=drive_link
Microprocessors and Assembly Language	https://docs.google.com/document/d/198H1L4bhkmfY_3i8fkIEGZtbnXLo-NC1/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
Microcontroller System Design	https://docs.google.com/document/d/146DlmXNaSudiItOb12MApckGRHOO5F1r/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
Measurements and instrumentation	https://docs.google.com/document/d/1tMmEU-ssNjYBahviLKHvYwLicdM9ffvZ/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
Signal and Systems	https://docs.google.com/document/d/18rveRK27yikk0DIYq1WFO22tCkVEOEk-/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
control systems	https://drive.google.com/file/d/1q_a4baXK0mjCXRDcQpSDtI_N6zFUQVg/view?usp=drive_link
power electronic and drives	https://docs.google.com/document/d/1VPvUI00Mz3c3bOg4rQaNmp9RC1aeGO6y/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
English Language-Intermediate	https://drive.google.com/file/d/1njjRmOIRnFebBXXycm3zK9JLNwDn-QdE/view?usp=drive_link
Design of Machine Elements I	https://drive.google.com/file/d/17tTLWgj9n7uYCW9PudF2ugCVioc02Ld0/view?usp=drive_link
Signal Processing	https://drive.google.com/file/d/1WKgdNUSNdAEe0n7TBq3vlj8LuW_GHMhf/view?usp=drive_link
Solid modeling	https://drive.google.com/file/d/1ma7RTv3DdU2OUX_JDQXlvr0gdE4sop5f/view?usp=drive_link
Image Processing	https://docs.google.com/document/d/1sOvcFOqooJjwQksj_m42PLDIU_OfeyYd/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
Communication engineering	https://drive.google.com/file/d/1x77uGyG2SxjXzmL5aVupeBZGBarZ-dH_/view?usp=drive_link
Robotics	https://docs.google.com/document/d/135dxA5f7j-l2KfoWQd3Co8ie2BNQZ3Iq/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
Public safety	https://docs.google.com/document/d/1aN_nj4Zc0jIoQ80bHDsiGf1zgTmr18Bo/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
Special Topics in Mechatronics	https://docs.google.com/document/d/1WLLU5faLg1kp8UftUCooF2hOfX1y0hXE/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
Industrial Automation	https://docs.google.com/document/d/1F1l1vFO3k0zK_y_YjKhpBbH3n1U5dCZL/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
PC interface and Data acquisition	https://docs.google.com/document/d/1trNE49TU3_a1A79QTXZFeMur8ZfbkmaR/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
Mechatronics System	https://docs.google.com/document/d/1hWCP-xNG72ahckZsRCf6NaoE-

Design	CUN6vzV/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
Intelligent control	https://drive.google.com/file/d/1tBNQEcZ7eVoPmjTIUG_EcVwhNN4bgt6s/view?usp=drive_link
Artificial intelligence	https://drive.google.com/file/d/16IEIrPysorZGcc_NcVwTG5iqCIRi96Q7/view?usp=drive_link
modern control systems	https://drive.google.com/file/d/1CQpaJRq37OLgd0KgIt8tDclDecSFWGSsp/view?usp=drive_link
Engineering management	https://docs.google.com/document/d/1B0TB76jXxX8tbAetA7fuGQRPUhkaGBgM/edit?usp=drive_link&ouid=100149964556847603427&rtpof=true&sd=true
English Language- upper Intermediate	https://drive.google.com/file/d/1gsal69G0_y_sHxPsLsleEVHBIJftrhSm/view?usp=drive_link
Design of Machine Elements II	https://drive.google.com/file/d/1ejuGhYhUJRumqDTw7GmGIKtsePJXp9e/view?usp=drive_link