MECHA TRONICS ENGINEE RING

The Mechatronics Engineering Undergraduate Program trains well-rounded professionals capable of designing, manufacturing, implementing and integrating state-of-the-art automated systems and machinery. Through a solid foundation in theory and practice, graduates are equipped to drive innovation in production systems by combining mechanics, electronics, programming, and control—enhancing organizational competitiveness.

SPECIALIST CERTIFICATIONS

- Automation and Industrial Robotics
- Simulation and Cyber-Physical Systems
- Technological Innovation

WE ARE THE CHANGE,
AUTOMATE IT

UNIVERSIDAD DE LIMA

Mechatronics Engineering Curriculum

	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6	NIVEL 7	LEVEL 8	LEVEL 9	LEVEL 10
1	LANGUAGE AND COMMUNICATION I — 4	LANGUAGE AND COMMUNICATION II — 3	APPLIED ARTIFICIAL INTELLIGENCE * — 3	DIFFERENTIAL EQUATIONS * — 4	COMPLEX VARIABLE AND TRANSFORMS ANALYSIS — 4	SIGNAL AND SYSTEM ANALYSIS — 4	COMPUTER-AIDED DESIGN AND MANUFACTURING — 3	MECHATRONICS SYSTEM DESIGN — 4	INDUSTRIAL PLANT DESIGN — 4	INDUSTRIAL ROBOTICS SYSTEMS — 3
2	PSYCHOLOGICAL PROCESSES — 3	APPLIED PHILOSOPHY — 3	CALCULUS II * — 5	STATISTICS AND PROBABILITY * — 4	COST ANALYSIS AND BUDGETING — 3	MATERIALS TECHNOLOGY AND INNOVATION — 3	ELECTRICAL MACHINES — 3	RESEARCH PROJECT — 4	MECHATRONICS CAPSTONE PROJECT I — 4	MECHATRONICS CAPSTONE PROJECT II — 4
3	CIVIC ETHICS — 2	FUNDAMENTALS OF ECONOMICS — 3	DIGITAL CIRCUITS — 4	ELECTRICAL CIRCUITS — 4	COMPUTER PROGRAMMING — 3	DYNAMIC SYSTEMS CONTROL I — 4	MACHINE LEARNING — 3	INDUSTRIAL PROCESS CONTROL — 3	PROJECT MANAGEMENT * — 3	ELECTIVE V — 3
4	INTRODUCTION TO ENGINEERING — 3	INTRODUCTION TO INTERNATIONAL TRADE — 3	PHYSICS I * — 4	PHYSICS II * — 4	APPLIED MECHANICS — 4	FLUIDS AND HEAT ENGINEERING — 3	EMBEDDED SYSTEMS AND INDUSTRIAL IOT — 4	COMPUTER INTEGRATED MANUFACTURING — 4	ELECTIVE III — 3	ELECTIVE VI — 3
5	RESEARCH METHODOLOGIES — 3	LINEAR ALGEBRA — 3	ORGANIZATIONAL SYSTEMS * — 2	FUNDAMENTALS OF MACHINES AND MECHANISMS — 3	MATERIAL RESISTANCE ENGINEERING — 4	MANAGERIAL SKILLS DEVELOPMENT * — 3	DYNAMIC SYSTEMS CONTROL II — 4	DIGITAL IMAGE PROCESSING — 4	ELECTIVE IV — 3	MANDATORY CREDITS — 7
6	PRECALCULUS — 5	CALCULUS I — 5	MECHANICAL DRAWING — 4	GENERAL CHEMISTRY * — 4	ELECTRONIC CIRCUITS — 4	MICROCONTROLLERS — 4	PROJECT FORMULATION AND EVALUATION — 3	ELECTIVE II — 3	MANDATORY CREDITS — 11	
7						INTELLIGENT SENSORS AND ACTUATORS — 3	ELECTIVE I — 3			
MANDATORY CREDITS	**20**	**20**	**22**	**23**	**22**	**23**	**20**	**19**		

Elective Subjects:

PNEUMATIC SYSTEMS — 3	INDUSTRIAL NETWORKS AND PROTOCOLS — 3	UNMANNED AUTONOMOUS SYSTEMS — 3	COMPUTER VISION IN ROBOTICS — 3	DIGITAL TRANSFORMATION * — 3	SUSTAINABLE PROJECT DESIGN * — 3
BIG DATA — 3	CYBERSECURITY — 3	GRIPPER DESIGN AND FABRICATION — 3	VIRTUAL REALITY AND AUGMENTED REALITY — 3	DESIGN AND PROTOTYPE * — 3	OCCUPATIONAL SAFETY, HEALTH, AND ORGANIZATIONAL WELL-BEING * — 3
DESIGN PROJECT MANAGEMENT * — 3	INDUSTRIAL TECHNOLOGY * — 3	SCADA SYSTEMS — 3	DIGITAL TWIN — 3	PROGRAMMING TECHNOLOGIES * — 3	

To choose these subjects, it is necessary to meet the requirements set out in this curriculum.

Legend

- ■ Mandatory subjects of the General Studies Program
- ■ Mandatory subjects of the Mechatronics Engineering Undergraduate Program
- ■ Elective subjects of the Mechatronics Engineering Undergraduate Program
- * Subjects in common among undergraduate programs of the School **

** **The School of Engineering comprises the Civil Engineering, Industrial Engineering, Systems Engineering, Mechatronics Engineering, and Environmental Engineering undergraduate programs.**

CREDIT SUMMARY

CREDIT SUMMARY	CREDITS	TYPE OF CREDIT
General Studies	40	Mandatory
School	147	Mandatory
Total Elective Subjects	18	Elective
Total Credits	205	

Subject to curricular change.