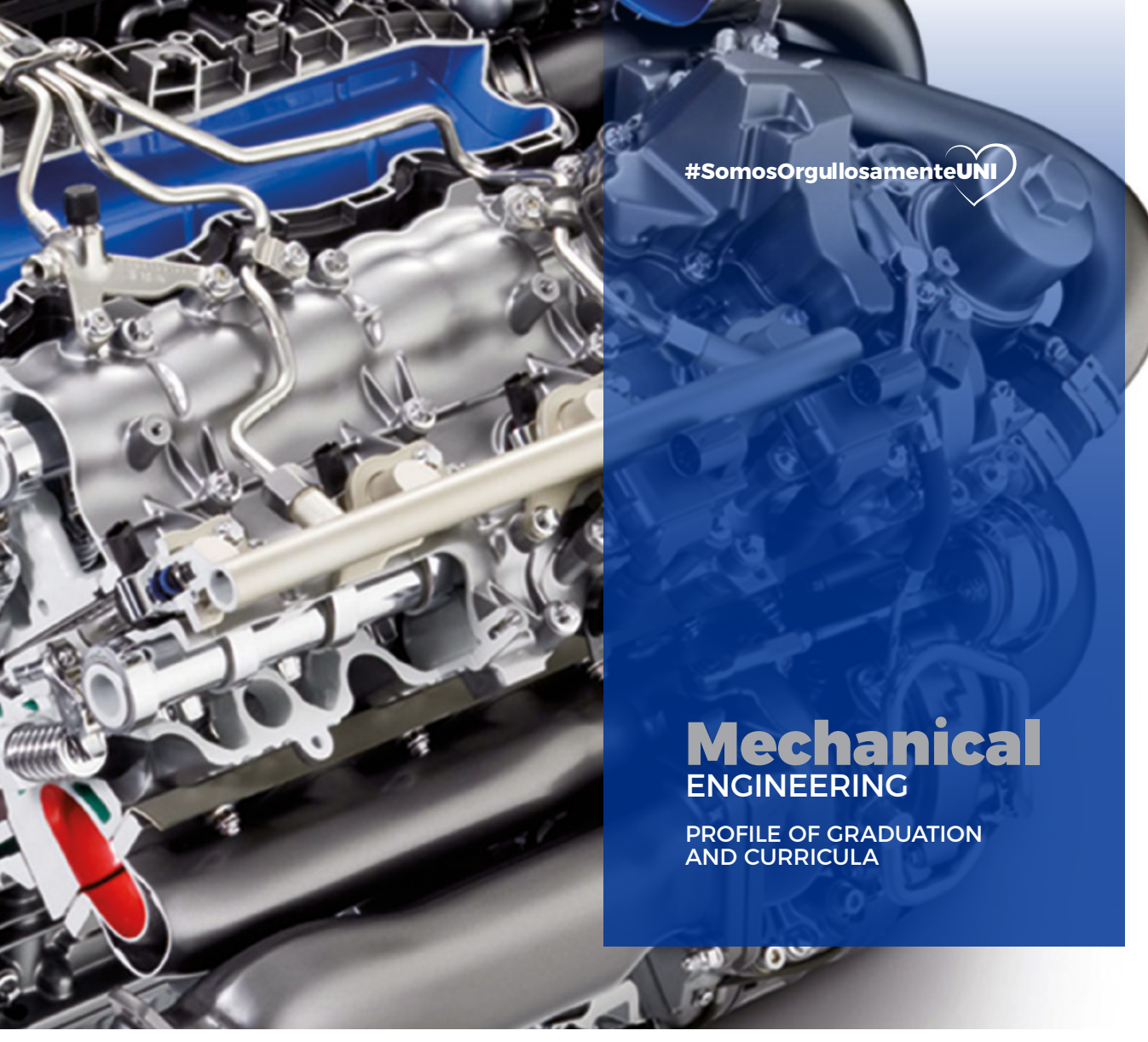

#SomosOrgullosamenteUNI

Mechanical
ENGINEERING

PROFILE OF GRADUATION
AND CURRICULA

Faculty of
Technology
and Industry

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Mechanical
ENGINEERING

It is the major that investigates, chooses, builds, explores and gives maintenance to machinery equipment and industrial installations related to energy, transportation, manufacturing by using the most advanced technology.

Knowledge
OF A MECHANICAL ENGINEER

- Fundamentals to design and install hydraulic and thermal-energy systems. Master thermodynamic principles, transfer of heat, cooling, air conditioning, fluid mechanics and turbo machines.
- Methods, techniques, and tools for mechanical design, material selection, analysis of working system, physico-mechanical domains, chemical composition and material application. In this context, it is required the study of the behavior of idle and motion objects as well as its interaction.
- Basic fundamentals to administrate manufacturing processes, machinery construction, and different manufacturing processes to be mastered. It also includes thermal and chemical treatment to modify them, quality control making an emphasis on dimensional measurements performance.
- Basic fundamentals to administrate maintenance operations.
- Fundamentals for the use of internal combustion engines and self-propelled machines.
- Laws, principles, and basic required sciences theories to understand future and present technology.
- Fundamentals of economical engineering and economical assessment projects.
- Basic fundamentals to manage human, material and financial resources.

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Skills
OF A MECHANICAL ENGINEER

MECHANICAL
ENGINEERING

- Apply knowledge of mathematics, science and engineering in order to solve problems effectively.
- Manage industrial maintanaince and material and human resources.
- Design and install thermal-hydraulic and thermal-energy systems under limitations.
- Energy exploitation and efficiently manage machines and processes.
- Design gadgets, mechanisms and machines to satisfy some needs under limitations.
- Administrate manufacturing processes with mechanic features.
- Administrate exploitation of internal combustion engines and self-propelled machines.
- Identify, formulate and solve problems related to its area of expertise.
- Communicate through oral expression as well as in a written and graphic way.
- Use techniques, skills and modern tools to practice engineering.

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MECHANICAL ENGINEERING

Attitudes
OF A MECHANICAL ENGINEER

- Ethical and professional responsibility with autonomy.
- Commitment with knowledge management and long-life learning.
- Concern about the impact of engineering's solutions in a global, economic, environmental and social context.
- Responsibility in decision making.
- Self-prepared with contemporary topics that broaden his/her vision of the world, so that it allows him/her visualize beyond scientific-technological aspects.
- High entrepreneurial spirit, team player and innovative attitude.
- Be responsible with the environment demonstrating social consciousness regarding Nicaraguan's society dilemma.

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MECHANICAL ENGINEERING

Curricula

I Semester

- Descriptive Geometry
- Mathematic I
- Technical Writing
- English I
- General Chemistry
- Introduction to Mechanical Engineering
- Informatic I

II Semester

- Technical Drawing I
- Mathematic II
- Assisted Drawing by Computer
- Philosophy
- English II
- Physics I

III Semester

- Technical Drawing II
- Mathematic III
- Physics II
- Economy
- Statistics
- English III

IV Semester

- Mathematic IV
- Physics III
- Sociology
- Dynamics
- Statistics I
- History of Central America and Nicaragua

V Semester

- Material Resistance I
- Thermodynamic I
- Science of Materials
- Dimensional Metrology
- Theory of Machines and Mechanisms
- Research Methodology
- Culture of Peace and Human Rights

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MECHANICAL ENGINEERING

VI Semester

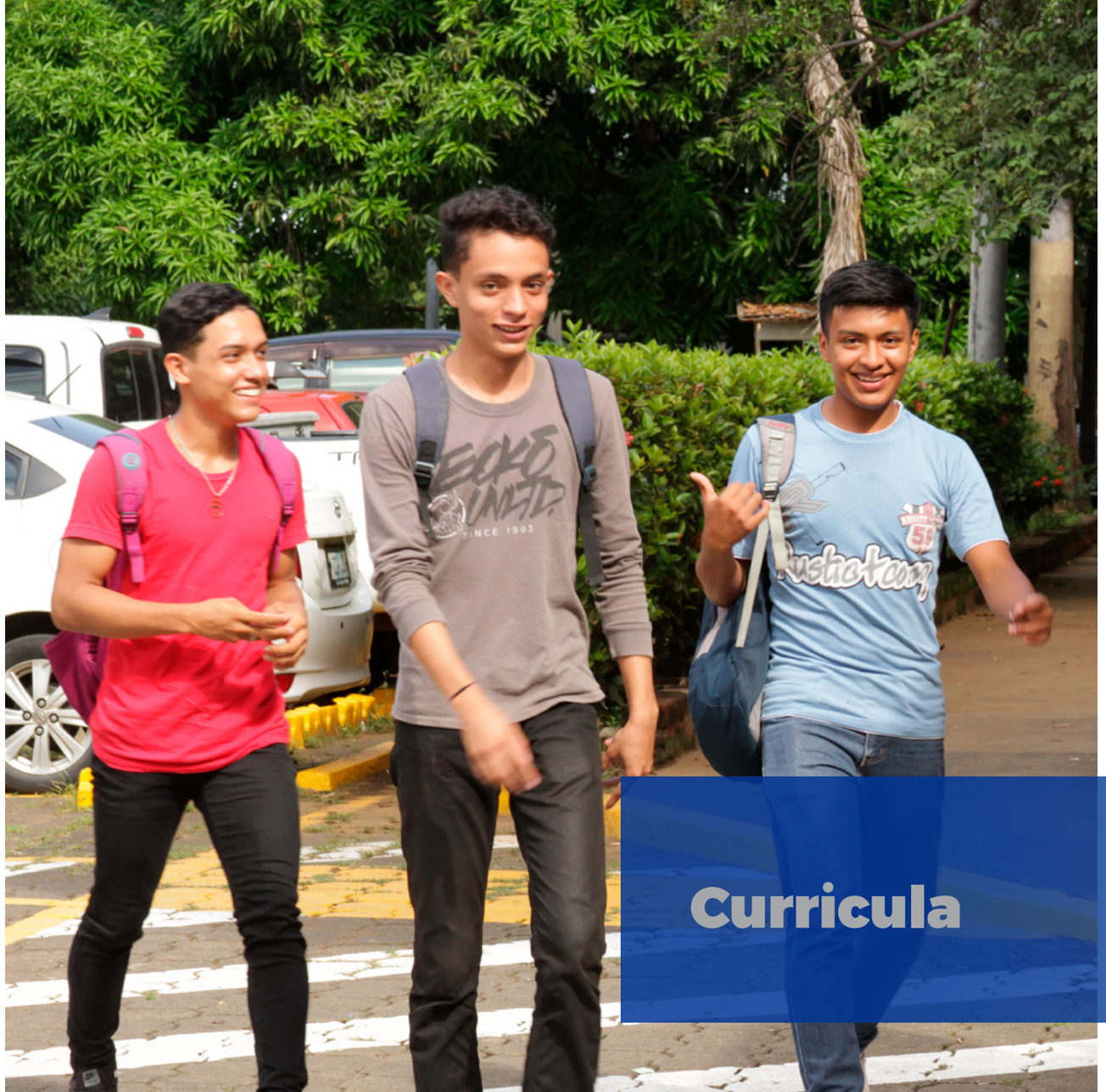
- Material Resistance II
- Thermodynamic II
- Tool Machines
- Mechanic of Fluids I
- Processes of Manufacturing I
- Electrotechnology
- Optional I (Metal Conformation or Total Quality Control)
- Optional I (Metal Forming)
- Optional I (Total Control of Quality)

VII Semester

- Design of the Elements of Machines I
- Electronic
- Mechanic of Fluids II
- Organization and Planning Production
- Maintenance
- Heat Transfer
- Technology and Environment

VIII Semester

- Design of the Elements of Machines II
- Economical Project Assessment
- Turbomachines
- Thermal Plants
- Automatic Systems Control
- Optional II (Tribology or Fitting and Assemblage of Machines)
- Optional II (Tribology)
- Optional II (Fitting and Assemblage of Machines)



Curricula

IX Semester

- Processes of Manufacturing II
- Internal Combustion Engines
- Cooling and Air Conditioning
- Industrial Safety and Labor Legislation
- Optional III (Hydroelectric Plants or Systems and Pneumatic Installation of Tires)
- Optional III (Systems and Pneumatic Installation of Tires)
- Optional III (Hydroelectric Plants)
- Business Administration

X Semester

- Design of Productive Systems
- Optional IV (Automotive Machines or Industrial Equipment of Transportation)
- Optional IV (Industrial Equipment of Transportation)
- Optional IV (Automotive Machines)

PEDRO ARÁUZ PALACIOS CAMPUS

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Managua, Nicaragua.

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(505) 2249-6437

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General Secretary
Communication Division

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