INSTITUTO MAUÁ DE TECNOLOGIA

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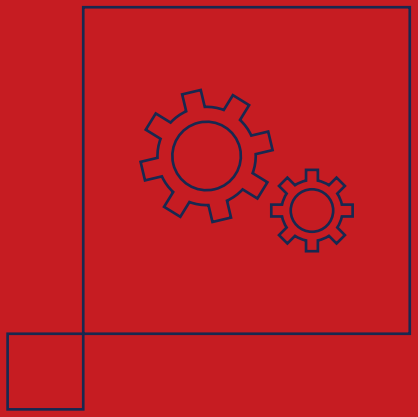
MECHANICAL ENGINEERING SÃO CAETANO DO SUL

MECHANICAL



WHAT DOES A MECHANICAL ENGINEER DO?

Mechanical Engineering is one of the oldest and most comprehensive fields in Engineering. The program helps train versatile professionals who can excel in a variety of career environments. Mechanical Engineers apply their knowledge of materials (including composites), manufacturing processes, Mechanics of Solids and Fluids, Energy and Power, and management into designing, building, testing and maintaining the smooth running of partial and complete systems and their components.

CAREER OPPORTUNITIES

Mechanical engineers are equipped with knowledge and skills that can be applied into a wide range of different fields, such as the following: design of machines - also vehicles, aircraft, boats and structures, bioprosthesis, robots and their respective assembly lines -; analysis and improvement of efficiency in energy, oil and gas and environment conversion processes; design of pumps and hydraulic turbines, wind turbines, aerodynamic studies in automobiles, aircraft and atmospheric vehicles; air conditioning systems (thermal comfort) and refrigeration (food preservation on a large and small scale) and the study & design of heat exchange equipment. Mechanical engineers can also work with specification and scaling of metals, composites, ceramics and Nanomaterials; specification and improvement of manufacturing processes; industrial maintenance (preventive, predictive, corrective); control and automation projects; quality control management in production (dimensional control); management of product lines and teams; and many others. Due to their flexibility and extensive knowledge, mechanical engineers also work in innovation and service areas such as Patent Analysis, Technical Education, Banking, Information Technology, Technical Sales and Post Sales, as well as Team Management.

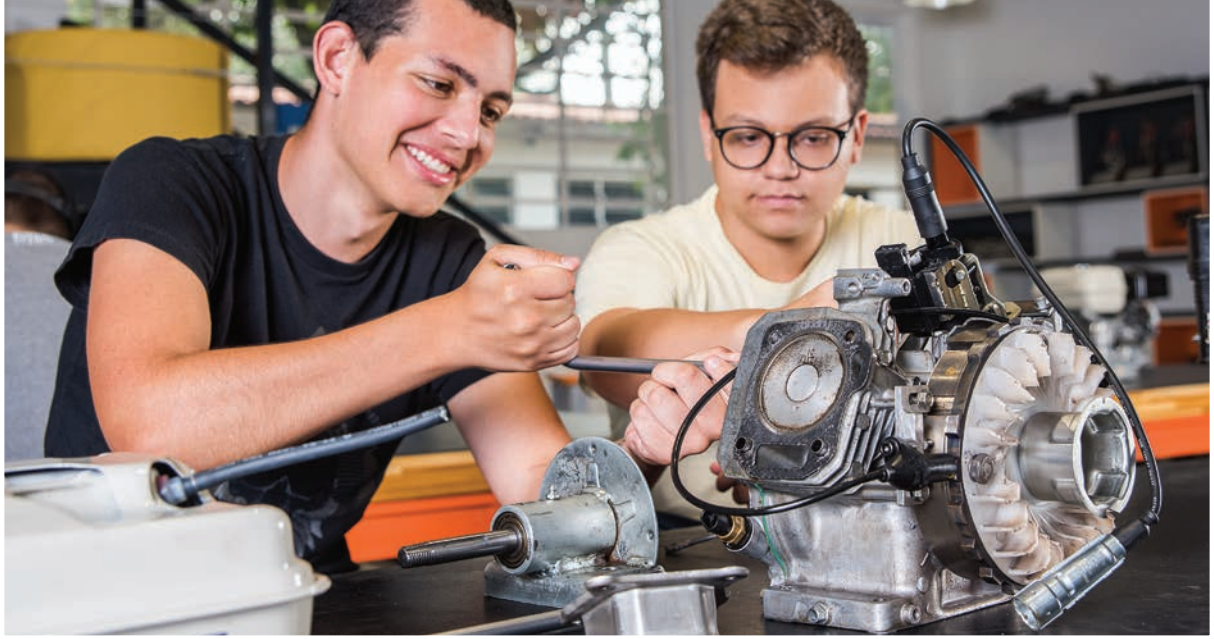
THE JOB MARKET

Given their versatility, there is a demand for mechanical engineers across all economic sectors (Agricultural, Manufacturing, Services, Public and Private Management). The main employers are the Automobile industry (assembly plants), as well as other companies in these fields: Auto parts, Agricultural implements, Capital goods, Turbo machinery, Aircraft, Transportation Services (road, rail, subway, air, sea), Electric Power Generation Equipment (hydraulics, thermoelectric, wind, nuclear, solar), Financial Services, Information Technology, Certification (standard enforcement), Business Management and Consulting. Other growing areas that interconnect with mechanical engineering include biomechanics (prostheses, heart valves and stents), renewable energies, oil and gas, and automated assembly line design (Industry 4.0).

MECHA NICAL

PROGRAM LENGTH:
DAYTIME CLASSES: 5 YEARS
EVENING CLASSES: 5 AND 6 YEARS
*** TOTAL CLASSROOM HOURS IS THE SAME FOR BOTH PERIODS**

LOCATION:
SÃO CAETANO DO SUL CAMPUS



THE MECHANICAL ENGINEERING PROGRAM AT IMT

The Mechanical Engineering Program at IMT is designed to be the best option for students who graduated from high school and are interested in the technical field and in getting a solid education and a safe transition from the academic environment to the job market. Our program core basis helps students stay up-to-date with all the technological advances over the course of their careers. The contact with the technology and the methods used in modern industry aims at increasing the student employability and facilitating their placement in the job market. Technologies that accelerate the product development cycle, such as computer simulations of structures and fluids, as well as CAD, CAM and CAE tools, prepare students for a smooth transition to the industry. In addition, the Mechanical Engineering Program at IMT provides students with a broad-based learning through courses, projects and activities in Engineering, Business Administration and Design, in which students develop and apply teamwork, project management and people skills, also learning to work with different restrictions and regulations. This unique combination of experiences gives our students a competitive advantage in the job market.

THE PROGRAM OFFERS

- A large number of full-time professors with PhDs, always available to offer support to students, both in and out of class;
- Unique, modern and fully-equipped laboratories to support an efficient learning process;
- A solid technical education, based on both a conceptual approach and the practical application of knowledge in experiment and multidisciplinary projects that facilitate content absorption and stimulate creativity;
- The opportunity to develop integrated projects with the Engineering, Business Administration and Design programs;
- Contact with advanced design, scaling and manufacturing tools with CAD, CAE, CAM software, optical measurement and numerical computational simulation of structures and fluids;
- Monitoring and undergraduate research scholarships;
- Partnership agreements with local companies that offer internships and final assignment project opportunities, adding practical experience to the curriculum;
- Development of critical and creative thinking focused on problem solving;
- Systemic view;
- Integration with the Research Center, which offers opportunities for specific internships and job placements;
- Several integrating activities, such as Baja, Fórmula SAE, Aerodesign, EcoMauá, with trips to other cities in Brazil and abroad;
- Opportunity to be in constant contact with professionals already working in the field through lectures, workshops and events.

AWARDS AND ACCREDITATIONS

- 4 stars in Guia do Estudante;
- Student teams have won numerous academic competitions: Baja SAE, Fórmula SAE, SAE Aerodesign, PACE (GM) AND at the Energy Efficiency Collegiate Marathon;
- Project development in partnership with renowned multinational companies.

SPECIAL PROJECTS AND ACTIVITIES

In addition to conventional classes, students engage in essentially practical projects and activities in which they must work in groups composed of students enrolled in different programs and program years. There are more than a hundred projects and activities in progress, which take advantage of the excellent infrastructure available at IMT.

ACADEMIC COMPETITIONS

- Aerodesign
- Model Aircraft
- Baja Mauá
- Concreto Mauá
- Gravity Car Race
- Inova Mauá
- Eco Mauá
- Mauá Racing
- Robótica Mauá
- Mauá Júnior - Student-led non-profit trategy consulting firm
- eSports Mauá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PARTNERSHIPS

INTERNATIONAL
PARTNERSHIPS

SANDWICH YEAR

Cooperation agreement (with partial or full scholarships available) with several international Higher Education Institutions, where students attend a semester or a year in an institution abroad, earn international experience and may transfer some of their credits back to their program in Brazil.

INTERNATIONAL PARTNERSHIPS AND OPPORTUNITIES

Coventry University
De Montfort University Leicester
Mines Saint-Étienne
ESME Sudria
Fontys University of Applied Sciences
ITSON
Istanbul Bilgi Üniversitesi
LTU
Michigan State
QUT
stw
Technische Universität Braunschweig
The University of Western Australia
Université Toulouse III Paul Sabatier
Universidad de Salamanca
Anáhuac Mayab
Politécnica
Universidad Tecnológica de Bolívar
Hes·so University of Applied Sciences and Arts Western Switzerland
University of Maryland
University of Victoria
University of Calgary

IMT KEY FEATURES

Built on over 130,000 square meters, São Caetano do Sul campus offers some of the best-equipped higher education facilities in the country.

Over 100 laboratories – two labs per conventional classroom –, including the brand-new Fab Lab.

Comfort and safety – the campus has several cafes, snack bars and different social areas, as well as free parking for approximately 1,400 vehicles.

Several exchange programs offered in prestigious international institutions: dual degree agreements, sandwich and study abroad programs. Students can apply for scholarships, and transfer some of their credits back to IMT.

Distinguished academic staff that blends subject-matter experts with extensive industry experience, and professors holding Master's and PhDs from some of the best universities in Brazil and abroad.

A new and innovative educational approach that requires active learning experiences – from outside the classroom – for the purpose of curriculum integration: academic competition, partnerships with the business community, undergraduate research, teaching assistantships, and much more.

An academic environment that includes close cooperation with industry technology development projects involving both the faculty and student bodies.


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IMT KEY FEATURES

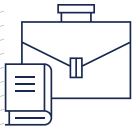
Activities focused on developing the social and emotional skills students need to succeed in their professional careers.

Special support to help students transition to academic life: assistance available at non-classroom hours, access to vast digital content (video lessons and exercises), tutoring.

Curriculum flexibility, allowing students to choose complementary graduation projects and activities, as well as elective courses.

Minor programs, which provide students with an undergraduate specialization that is both complementary to and distinct from their main major, in areas such as Project Management, Business Management, Design and Innovation, Energy and Sustainability (programs revised on an annual basis).

A teaching philosophy focused on preparing students for innovation and entrepreneurship, developing projects that integrate Management, Design and Engineering.



Partnerships with the business community and mentoring by experienced executives to assist students with their term papers, adding a strong business focus, and connect their research to the marketplace issues and routine.

Undergraduate research opportunities offered in several IMT research groups that make significant contributions to scientific and technological advancement.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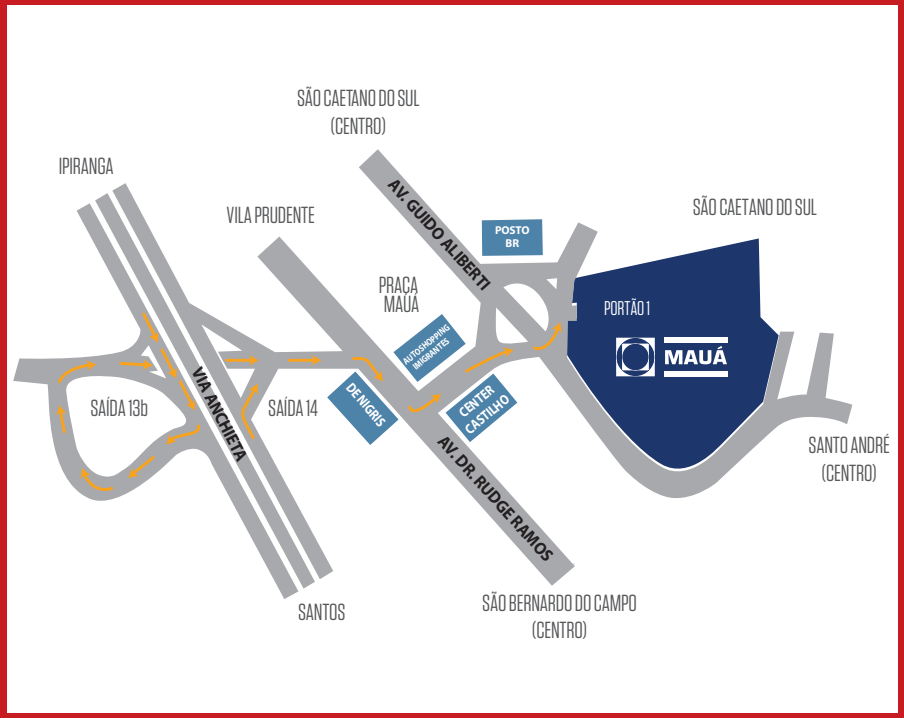
SÃO CAETANO DO SUL CAMPUS

CAMPUS DIRECTION MAPS



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