





**INSTITUTO  
FEDERAL**  
Minas Gerais

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## HEADMASTER

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## COURSE COORDINATOR

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## INTERNATIONAL AFFAIRS

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## 9:1 STUDENT-TEACHER RATIO

Average class of 30

## NUMBER OF STUDENTS ENROLLED

Technical Level: 525  
Undergraduate Degree: 386  
Graduating class size: 259

## 98% OF FACULTY HOLDS ADVANCED DEGREES

49% hold Ph.D Degrees  
49% hold Master's Degrees

# CAMPUS BETIM

INSTITUTO FEDERAL DE EDUCAÇÃO,  
CIÊNCIA E TECNOLOGIA DE MINAS GERAIS



## SCHOOL PROFILE 2023-2024

### THE SCHOOL

The Federal Institute of Education, Science, and Technology of Minas Gerais (IFMG) is a Brazilian institution of higher education that integrates the Federal Network of Vocational, Scientific and Technological Education Institutions implemented by the Brazilian Ministry of Education in 2008. It offers public education at a high level of excellence. IFMG Betim is one of the eighteen campuses located in Minas Gerais state. It has been serving students from various surrounding municipalities since 2011. Nowadays, the campus offers technical courses integrated into the high school curriculum in the areas of Chemistry, Mechanics, and Industrial Automation; and two undergraduate courses, Bachelor on Industrial Automation Engineering and Bachelor on Mechanical Engineering.

### OUR MISSION

IFMG aims at fostering vocational and technological education, research and innovation in an inclusive, democratic society, by boosting scientific, humanistic, and cultural development.

### SCHOOL RESULTS

ENEM 2021 - A Standardized Brazilian National Exam:

- Humanities: 519,61
- Natural Sciences: 491,05
- Languages: 501,83
- Mathematics: 533,72
- Composition: 634,16

### GRADING SYSTEM

The student's progress is evaluated in diverse learning situations, considering their abilities and attitudes. Students' grade point averages are calculated below:

- Graduating Class of 2022 Average GPA: 67,1
- Graduating Chemistry Class Average GPA: 66,7
- Graduating Automation Class Average GPA: 71,3
- Graduating Mechanics Class Average GPA: 63,2



## CURRICULUM: VOCATIONAL HIGH SCHOOL ACADEMIC PROGRAMS

Students take the same core classes offered in an ordinary high school course with the addition of integrated higher-level technical subjects, according to the student's choice of application before taking the institution's entrance exam.

Subject	Total Workload
Arts .....	60h
Biology - A, B and C .....	180h
Chemistry - A, B and C .....	180h
English - A, B and C .....	180h
Geography - A, B and C .....	180h
History - A, B and C .....	180h
Portuguese .....	330h
Language, Literature and Writing .....	330h
Mathematics - A, B and C .....	330h
Physical Education - A, B and C .....	240h
Physics - A, B and C .....	90h
Philosophy Sociology .....	90h
Informatics .....	60h
Labor Safety .....	30h
Innovation and Entrepreneurship .....	60h
Spanish (optional) .....	60h
<b>Total course workload - Mechanics .....</b>	<b>3300h</b>
<b>Total course workload - Automation .....</b>	<b>3300h</b>
<b>Total course workload - Chemistry .....</b>	<b>3210h</b>

HIGH SCHOOL CORE CURRICULUM

IFMG's curriculum is based on the guidelines set forth by the Brazilian Ministry of Education and by the Department of Technological Education.

Students must undergo highly demanding classes, both in their field of choice and high school.

Industrial Automation and Mechanics have a curricular emphasis on Physics, Mathematics, and college-level Engineering. Chemistry has a curricular emphasis on Chemistry, Mathematics, Biology, and college-level Laboratory Practices.

In order to graduate, students must attend 3600 class hours throughout three years and successfully achieve approval in all classes.

**There are no AP or Honors Classes.** In addition to the specific classes of each course, students take the same core curriculum, regardless of their demonstrated academic abilities.

## SPECIFIC CURRICULUM REQUIREMENTS

**Chemistry Course:** Inorganic Chemistry, Introduction to Laboratory Chemistry, Industrial Processes and Unit Operations, Analytical Chemistry I and II, Applied Organic Chemistry, Physical Chemistry and Corrosion, Microbiology, Mineralogy, and Polymeric Materials.

**Automation Course:** Technical Drawing, Structured Algorithms, CAD + Computer Modeling, Analysis of Electrical Circuits, Digital systems, Manufacturing + CNC and Hydropneumatics, Embedded Systems, Quality and Project Management, Instrumentation and Process Control, Industrial Automation, Electrical and Electronic Drives, Analog Electronics, and Interdisciplinary Project.

**Mechanics Course:** CAD/Modeling, Metrology, Mechanical Manufacturing, Science of Materials, Quality and Project Management System, Machine Thermal / Hydropneumatics, Elements of Technical Mechanical Machines and Material Strength, Welding Electricity and Facilities



**Class rank:** IFMG Betim does not have a class ranking system that influences educational processes.

**Years of instruction offered:** Three years

**Entrance system:** To enroll, students must first take an entrance exam. The exam consists of questions on Mathematics, Sciences (Physics, Chemistry, and Biology), Portuguese, Geography, and History. IFMG Campus Betim has a high number of applicants per place. In 2021, out of 1087 applicants, only 16% were accepted.

## SCHOOL FACTS

**School type:** Public (tuition-free)

**System of education:** Professional Education of Technological Level and Higher Education

**Division of high school academic calendar:** Three trimesters

**Scoring system:** All classes have a minimum passing grade of 60 on a 0-100 scale.

**Primary language of instruction:** Portuguese

**Religious affiliation:** None

**CEEB or ACT code:** None

**Bilingual education:** No

**Acceptances:** Our former students go on to study in some of the best universities in Brazil, such as Federal University of Minas Gerais, Federal University of Rio de Janeiro, Campinas State University, Federal University of Bahia, and also abroad, in Argentina, France, and the USA. We have recently had a student approved at UPenn with a full scholarship.

## AWARDS

Our students have received several awards in national Olympiads and similar competitions:

**Science National Olympiad 2023** - 06 gold medals, 02 silver medals, 03 bronze medals

**Power4Girls - Empower to Lead! 2022** - 3rd place - Betgirls team

**International Olympiad Mathématiques Sans Frontières 2021** - regional team gold medal, national team silver medal

**Yale Young Global Scholars 2021** - 01 student participated of the online summer program

**Latin American Leadership Academy 2021** - 02 students participated of the online bootcamp

**IFMG's 2021 Innovation Olympiad** - 1st place

**Math Kangaroo 2021** - 05 silver medals, 02 bronze medals

**Brazilian Mathematical Olympiad of Public Schools 2021 (OBMEP)** - 04 gold medals, 10 bronze medals, 10 honorable mentions

**State Math Contest 2021** - 12th place

## EXTRACURRICULAR ACTIVITIES

IFMG provides students with diverse opportunities for personal and academic enrichment outside of the classroom through a variety of activities, including:

- Clube do Livro (Book Club)
- CineClube (Film and Cinema Club)
- SLAM Poetry Club
- Astrocultura Project (Astronomy Club)
- Se Joga! (Female Soccer Practice)
- PIEL (Sports and Leisure Program).
- Extension projects in a variety of areas, such as Humanities, Arts, Social Sciences, and STEM
- Research projects
- Tutor/Teaching Assistants
- Student Council