

EROST PORTS  
MUFFLER BEARINGS  
AFTERBURNERS

# BRAUDE COLLEGE

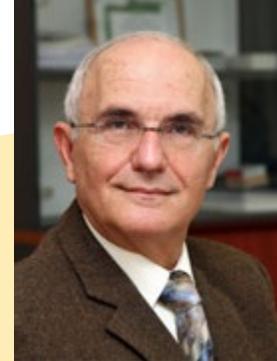
Forward Thinking



# Vision



**BRAUDE COLLEGE IS A HIGHER EDUCATION INSTITUTION OF ENGINEERING, TECHNOLOGY, APPLIED MATHEMATICS, AND RELATED SCIENCES. OUR GOAL IS TO FIRMLY ESTABLISH THE COLLEGE AMONG THE LEADING INSTITUTIONS GRANTING ENGINEERING DEGREES IN ISRAEL, AND TO PROMOTE EQUAL OPPORTUNITIES IN ISRAELI SOCIETY THROUGH EDUCATION AND PROFESSIONAL TRAINING.**



## Welcome to Braude College

Braude College strives for excellence in teaching and research in the fields of engineering and the sciences. We achieve this by empowering the individual and establishing strong ties with industry, academia, and the community.

The college's campus is situated in the Central Galilee, in the western district of the city of Karmiel. Spread over 25 acres on a hilltop with panoramic views of the Beit HaKerem Valley and the Galilean hills, the campus offers modern academic facilities and a powerful culture of academic distinction.

Braude plays an important role in the development and prosperity of the Galilee and its communities, and attracts a diverse range of students, many of whom choose to live and work in the region following graduation. The college increases accessibility to higher education in engineering and the sciences for inhabitants of the region. At Braude, a firm dedication to high academic standards ensures the quality of our graduates, providing them with the education and skills they need to meet their personal and profession goals in the fields of engineering most highly in demand today.

At Braude College, we cultivate independent learning to prepare students for their futures as engineers in a fast-changing technological world. We invest substantial resources in training, improved teaching methods, and student support systems, to create an environment that is both nurturing and challenging. This environment allows for individual empowerment and the cultivation of personal and academic excellence.

Braude College has recently opened a number of M.Sc. programs, designed for engineers who have excelled in professional practice. These programs provide an opportunity for students to expand their knowledge base in advanced areas of engineering, while continuing to develop in their careers.

Our principle goal is to continue to advance the college as a leading academic institution in the Galilee and in Israel. To this end, we remain committed to uncompromising academic excellence, and to the cultivation of fruitful education experiences.

# The Best of the Galilee

Braude College is an academic center of excellence deeply rooted in the Galilee. With a tradition of high-quality education and research, Braude is at the academic pulse of the region, producing current and future generations of professional engineers with strong community ties.

The college is broadening its academic reach in a dynamic and ever-changing world, while remaining faithful to its underlying tenets:

- > HIGH ACADEMIC STANDARDS
- > PERSONAL ATTENTION
- > STUDENT SUPPORT
- > TEACHING EXCELLENCE
- > ADVANCED FACILITIES
- > CONNECTIONS WITH INDUSTRY



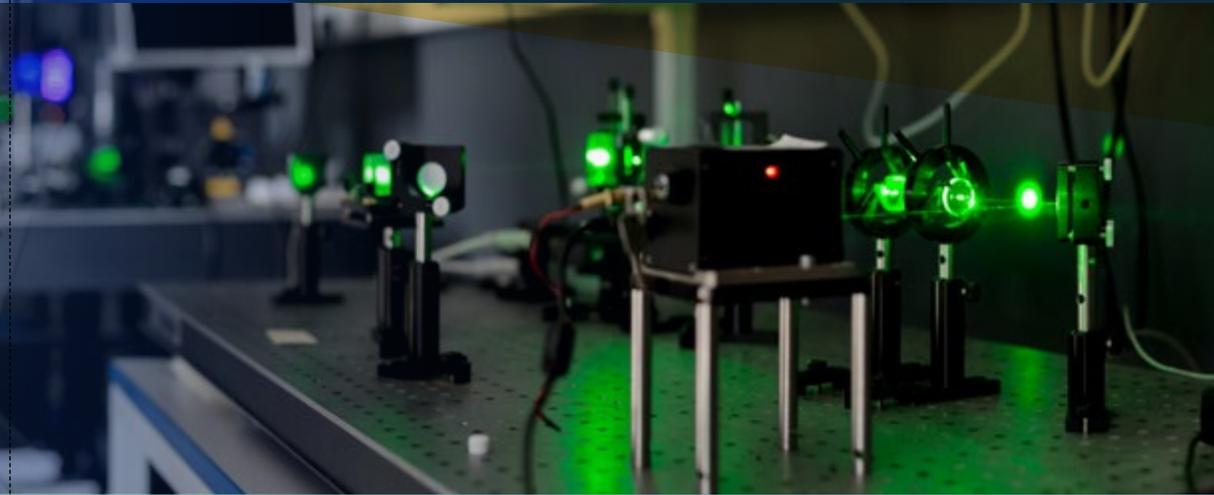
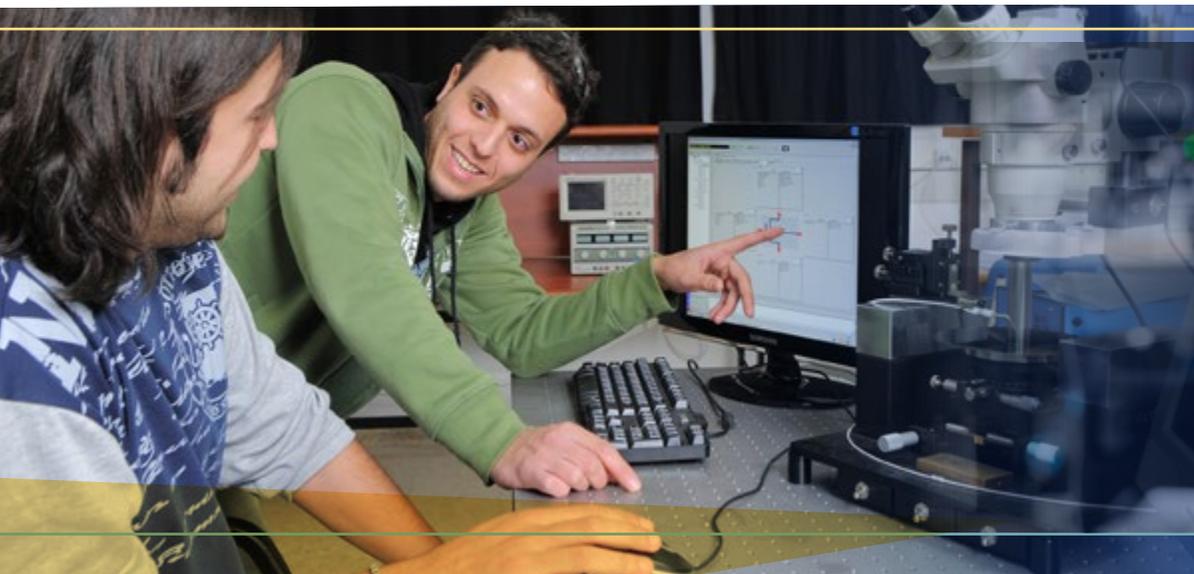
## We've Come Far; We're Going Further

In just over two decades, Braude College has established itself as a leading educational institution with academic and industry ties in the Galilee, throughout Israel, and around the world.

The college has generated many successful professionals and contributed to significant industrial breakthroughs among our student body and alumni. Moreover, Braude makes a vital contribution to the fabric of life in the Galilee, sowing the seeds of academic excellence so the local communities can reap the fruit.



# Bachelor of Science (B.Sc.)



## **APPLIED MATHEMATICS**

The Applied Mathematics program prepares students for the integration and practical application of mathematics to advanced technological developments across a wide range of fields, such as semiconductors, lasers, non-linear optics, optic fibers, nanotechnology, robotics, and computerized imaging. Graduates of the program help to fulfill the strong industry demand for professional applied mathematicians who can expertly integrate mathematical theory with engineering practice.

## **BIOTECHNOLOGY ENGINEERING**

The Biotechnology Engineering program provides comprehensive engineering training together with a well-rounded education in the sciences, exposing students to the most advanced approaches, while placing a strong emphasis on current industry practice. Graduates have established successful careers in pharmaceutical development, biotechnology, agriculture, life sciences, environmental protection, and the food industry.

## **ELECTRICAL AND ELECTRONIC ENGINEERING**

The Electrical and Electronic Engineering program places a strong emphasis on the development of cognitive skills with intensive practical training, to create professionals of the highest academic standards with the capacity to excel in a dynamic industry. Students can choose from several available fields of study, including: computerized systems, signal and image processing, electro-optics, RF, and communications. Graduates go on to attain desirable positions in the electronics industry and hi-tech companies.

## **INDUSTRIAL ENGINEERING & MANAGEMENT**

The Industrial Engineering & Management program provides broad knowledge in the planning, operations, and management of complex industrial and service systems. The program integrates the fields of engineering, technology, social sciences and management for a wide-reaching academic experience that meets the demands of the twenty-first century. The graduate body is comprised of professionals with strong backgrounds in operations management, system design, and information systems.

## **INFORMATION SYSTEMS ENGINEERING**

The Information Systems Engineering program prepares students for careers in analysis, characterization, design, implementation, maintenance, and management of information systems. In a competitive world, information systems engineers must possess the ability to define an organization's informational needs and design the most effective processes. Graduates enter the workplace with sophisticated skills that ensure success.

## **MECHANICAL ENGINEERING**

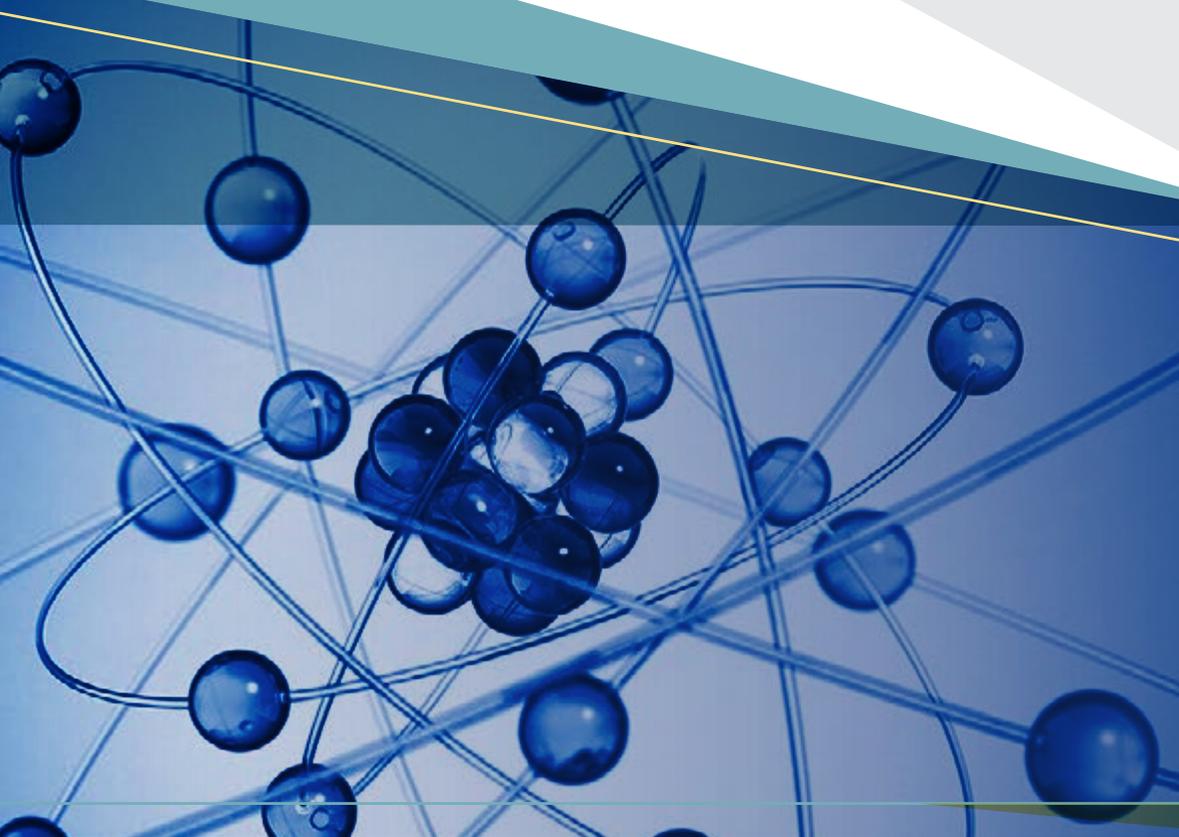
The Mechanical Engineering program offers solid expertise in modern engineering practices and robust theoretical knowledge for careers in advanced industry. Courses are designed to cultivate multi-faceted capabilities, combined with the absorption and implementation of new technologies. Students can choose from four available majors: design & manufacturing, plastics & plastics processing, mechatronics, and biomaterials.

## **OPTICAL ENGINEERING**

The Optical Engineering program offers an outstanding academic curriculum that meets the growing demand for engineers with expertise in this dynamic and robust field. Studies include a unique balance of practical engineering experience with scientific and mathematical theory, to ensure that students are well-equipped to face real-world challenges in their professional engineering careers. The program provides three tracks which are offered from the third year: extended optics, electro-optics, and mechanical-optics. The optical engineering program is training a new generation of engineers with the skills to succeed in a demanding industry based on fast-paced technological developments.

## **SOFTWARE ENGINEERING**

The Software Engineering program offers comprehensive academic training in theoretical sciences and engineering. Its courses are continually adapted to suit current academic and professional demands in this dynamic field. The degree is offered with three tracks: network & computer design, scientific programming, and software systems & algorithms. Graduates of the program work in leading software engineering companies.



# Master of Science (M.Sc.)



## **BIOTECHNOLOGY**

Biotechnology is a dynamic field with a constant accumulation of new scientific knowledge and technologies. The biotechnology industry encompasses unique and challenging technologies, regulations, and ethical issues. The Master of Science (M.Sc.) program in Biotechnology offers up-to-date, advanced courses in biotechnology with two optional tracks of specialization: Biotechnology Product Development and Research & Clinical Trials. The first track includes courses in design, process analysis, and management, all necessary tools for the development of biotechnological products. The second track includes advanced courses in design, analysis and regulatory issues, as well as the performance of medical research and clinical trials.

## **INDUSTRIAL ENGINEERING & MANAGEMENT**

In order to compete in the international arena, industry and service sectors need engineers with modeling capabilities, systemic perception, and advanced managerial skills. The Master of Science (M.Sc.) program in Industrial Engineering and Management is an application-oriented program that focuses on providing academic knowledge while nurturing creative and thoughtful engineers. Graduates will be equipped with an array of skills and knowledge, ranging from critical reading of professional publications to the necessary tools and methods for developing, analyzing and implementing complex models, case studies, and field-data analysis. Studies are designed to accommodate students working as full-time engineers.

## **MECHANICAL ENGINEERING**

The Master of Science (M.Sc.) program in Mechanical engineering enables students to expand and to deepen the knowledge acquired during their B.Sc. study in order to get to the cutting edge of the research and development in their discipline. The program offers further analytical/ engineering background together with a focus on production processes, solid mechanics, and materials engineering. The above expertise can bridge the gap a mechanical engineer may face during his work in the field of materials, a discipline that is known to be developing rapidly. In addition, a national need for experts in the field of manufacturing processes has been identified over the last two decades. The M.Sc. in Mechanical Engineering program meets these needs and gives its graduates an added value in the labor market.

## **SOFTWARE ENGINEERING**

The Master of Science (M.Sc.) program in Software Engineering provides students with the tools that enable software engineering professionals to complete quality software development within an assigned budget and timeframe. Its courses include advanced software development methods, learning systems, complexity of algorithms, software quality assurance, numerical analysis, requirements engineering and coding. Graduates are fully capable of analyzing and developing software using the most modern computer science methods.

## **SYSTEMS ENGINEERING**

Contemporary technological systems are typically comprised of several components, integrating specific knowledge from fields such as electrical, mechanical, and software engineering. The Master of Science (M.Sc.) program in Systems Engineering provides students with system-wide, multidisciplinary understanding and the ability to engineer complex products, processes, and services by leveraging a methodological systems engineering approach. The core courses provide a profound understanding of the theories and principles of systems engineering and technology management, and a set of tools for engineering management, analysis, and decision-making.

# Special Programs & Initiatives



## **EXCELLENCE PROGRAM**

The college offers a comprehensive excellence program for exceptional students. Approximately 2% of the student body participate in the program, the aim of which is to maximize student potential by providing individual guidance, extra opportunities for theoretical and practical learning, and exposure to research. Requirements for admission to the program are rigorous and those who participate benefit from financial assistance towards their education.

## **THE TEACHING AND LEARNING CENTER**

The Braude Teaching and Learning Center is a unique initiative designed to enhance the educational experience for both students and teachers. A range of programs are available for students wishing to improve their study and leadership skills, and to facilitate independent learning. In addition, lectures, programs, and support for teaching staff are provided at the center, enabling them to continually improve and update their teaching skills. The Teaching and Learning Center is a testimony to the college's vision of individual empowerment and of cultivating personal and academic excellence.

## **THE ENTREPRENEURSHIP AND INNOVATION CENTER**

The Entrepreneurship and Innovation Center serves as a "greenhouse" for cultivating new business concepts, a platform for presenting technological and business goals, and a means of transforming ideas into a successful reality. At its very core, the center aspires to create a multidisciplinary environment that bridges the college's diverse study programs and generates inspiration among future entrepreneurs throughout the industry of the Galilee region, as well as in Israel as a whole. From the initial recognition of a marketing opportunity to the presentation of a business plan to potential investors, the center combines the resources of expert teams, business development specialists, centers of expertise, municipalities, organizations, and institutions in Israel and abroad. During their studies, students encounter top-level business professionals and

work in teams with colleagues from different study programs. Together they develop new ideas, are introduced to IP and patent registration issues, and learn the principles of preparing a business plan, attracting investors, and establishing a company.

## **INTERNSHIP PROGRAM**

The internship program plays a significant role in student development. Between 650 and 1,000 hours of supervised fieldwork is a mandatory requirement of the course curriculum. Upon completion of the internship, students are required to submit a paper and to present their work at a symposium attended by faculty members and industry guests. This vital program exposes students to the most cutting-edge industries and advanced research, providing them the opportunity to implement the skills and knowledge they have acquired during their studies. It also strengthens the ties between the college and its industrial partners.

## STUDY ABROAD AT BRAUDE

Braude College's Study Abroad program offers a comprehensive semester of engineering studies. The innovative program combines theoretical studies with practical laboratory experience and exposure to leading Israeli industries, forming a solid educational experience across a spectrum of engineering disciplines.

In addition to the engineering courses, the program also offers humanities courses such as Israeli People & Culture, as well as a course in Basic Hebrew. All courses are conducted jointly for foreign and Israeli students, in English, ensuring a high level of interaction among students from diverse backgrounds.

## YOUTH ENRICHMENT

Braude College operates a regional Youth Enrichment Center for exceptional pupils, offering a range of challenging activities. At the center, gifted high school students can accumulate credit points towards an academic degree, gaining an important opportunity to advance academically while completing high school.

The center encourages original and creative thinking among students, while instilling a research approach in the study of science. Ultimately, the center aims to contribute to science and technology education and to create a new generation of enthusiastic and talented students who will carry the dynamic field of technology into the future.

## PRE-ACADEMIC STUDIES

The college offers a range of academic preparatory courses, including completion of the high school diploma, a unique preparatory course for engineering studies, and a course designed specifically for mature students (aged 30+). These programs offer vital opportunities for students by imparting the necessary skills and knowledge required to reach their academic goals.

## TEACHER EDUCATION

The Department of Teacher Education offers courses to attain qualifications for teaching engineering and mathematics in high schools. Graduates are fully certified by the Ministry of Education. In addition to academic studies, students complete a practicum in teaching in local high schools, jointly supervised by the college and the high school. Upon completion of their studies, students are awarded a B.Sc. and a

teaching certificate - a combination that provides an enriched teacher education experience and allows for greater earning potential and employment benefits. In addition, engineers who wish to change their careers can study towards a teaching certificate.

## DEPARTMENT OF CONTINUING EDUCATION

The Department of Continuing Education provides a valuable learning framework, offering courses, programs, and seminars to the industrial and public sectors of businesses as well as to the general community. Courses cover areas such as general and industrial management, marketing, advertising and sales, computers, CAM & CAD design, automation and control, electronics, plastics, languages, and professional training. The department contributes to the college's position as the leading educational institution in the Galilee, providing diverse learning opportunities for the benefit of the wider community.



# Activities & Student Services

## DORMITORIES

A spacious and comfortable dormitory complex is situated on campus, featuring breathtaking views of the Galilean mountains. The dormitories offer a supportive living environment and optimal study conditions.

## LIBRARY

The extensive and technologically advanced library serves the entire Braude community and is part of the nationwide academic library network.

## SCHOLARSHIPS

The college offers student scholarships based on a range of criteria, including socio-economic assessments and academic records.

## SOCIAL & CULTURAL ACTIVITIES

Students at Braude enjoy a wide range of services on campus that contribute to the vibrant and dynamic atmosphere, including an active student union and sports facilities.



# Research

Braude College's faculty members are involved in a wide spectrum of research disciplines; publishing their works in peer reviewed academic journals and participating in numerous international and national conferences and workshops with the aim of advancing the college's research activities and sharing the

research process with the wider academic and professional community. The research authority encourages, supports, promotes and monitors the research activities conducted by the college staff and serves as scientific, administrative, and managerial framework for research activities at the college.

# Looking Forward

Braude College is continually working to add new science and engineering programs that support both industry and the development of the Galilee. Furthermore, the creation of new graduate programs in all fields of engineering serves to meet the needs of engineers who wish to broaden their academic knowledge and expand their career potential for the future.

# Ofek Eshkolot Research & Development Ltd.

Ofek Eshkolot Research & Development Ltd. is a wholly-owned subsidiary of the college, established to promote practical R&D and to commercialize the intellectual property developed by Braude's scientists and researchers. The company possesses professional expertise in IP development rights, patents and licenses, and in creating win-win business partnerships. Ofek Eshkolot harnesses the extraordinary R&D capabilities at Braude and builds bridges that connect academia, science and technology with investors and entrepreneurs, to create innovative, problem-solving solutions.





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