# TECHNOLOGUE STUDIES

## **BITS** Pilani

2024-25 PROSPECTUS

Dubai Campus

FIRST DEGREE (B.E. / M.Sc.) PROGRAMMES

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## **CONTENTS**

BITS Pilani - An Overview	03
BITS Pilani, Dubai Campus	04
Message from the Director	05
Why choose BITS Pilani?	06
Programmes Offered	08
Educational Process	09
B.E. Architectural & Urban Engineering	10
B.E. Biotechnology	12
B.E. Biotechnology with specialization in Applied	14
Molecular Biology	
B.E. Chemical Engineering	16
B.E. Chemical with specialization in Energy, Environment	18
& Sustainability	
B.E. Civil Engineering	20
B.E. Computer Science	22
B.E. Electrical & Electronics Engineering	24
B.E. Electronics & Communication Engineering	26
B.E. Electronics & Computer Engineering	28

B.E. Mathematics & Computing	30
B.E. Mechanical Engineering	32
B.E. Mechanical with specialization in Aerospace	34
M.Sc. Physics with specialization in Space Science	36
& Technology	
Practice School (Internship)	38
Extra-Curricular Activities	39
International Student Services	40
Student Well-Being	42
Campus Facilities	43
Facilities & Support	44
Career Services	47
Flexibilities In First Degree Program	49
Fee Structure	51
Financial Assistance	52
Scholarships & Concessions	53
Innovation & Entrepreneurship	55



Birla Institute of Technology and Science, (BITS Pilani), is a world renowned all-India institute of higher education. Its flagship campus in Pilani, Rajasthan, received deemed university status in 1964 under Section 3 of the UGC Act. From its early years, the institute, with the help of a Ford Foundation grant, collaborated with MIT (USA) and adopted the institute's best practices. Since then, BITS has grown and now boasts campuses in Dubai, Goa, Hyderabad and Mumbai.

BITS Pilani consistently ranks as the **No.1 private engineering institution in India** in media rankings, such as Education World, India Today etc., and is the highestranked non-government institute in many of these surveys. It is also granted the status of **Institute of Eminence** by MOE, Government of India. With over 50,000 students enrolled across all its campuses, BITS Pilani offers degrees at all levels in Engineering, Sciences, Management, and Pharmacy.

Our legacy of excellence has been shaping professionals to excel on every parameter since inception. Today, our alumni body is a vast and thriving community of technocrats, successful entrepreneurs, renowned scientists, heads of organizations, and leaders of society. We take great pride in the achievements of our alumni and are continually inspired by their success. Under the dynamic leadership of Chancellor Dr. Kumar Mangalam Birla, BITS Pilani continues to scale greater heights.



**Dr. Kumar Mangalam Birla** Chancellor, BITS Pilani



**Prof. V Ramgopal Rao** Vice Chancellor, BITS Pilani



## **BITS PILANI, DUBAI CAMPUS**

Experience a legacy of excellence in engineering education with BITS Pilani Dubai Campus - A top-ranked institution approved by Ministry of Education, Government of India & University Grants Commission (UGC) & permitted by Knowledge & Human Development Authority (KHDA), Dubai.

BITS Pilani Dubai Campus (BPDC) is committed to academic excellence, innovation, industry engagement, and a value-led approach to teaching. This commitment has earned us a 5-star rating from the KHDA in partnership with QS, based on four core categories of **teaching**, **research**, **employability**, **and internationalization**.

Immerse yourself in a vibrant campus life and receive quality education from highly qualified and dedicated faculty. The campus at Dubai is both teaching and research intensive. Armed with their Ph.D., our faculty are innovators with patents and pioneers in their field. Many serve on editorial boards, selection committees of various boards, have strong industrial collaborations and are passionate educators. Our expert faculty and cutting-edge curriculum equip our students with a distinct blend of knowledge and skills, making them stand out from the rest.

BITS Pilani Dubai Campus is the ideal platform for students who want to make a tangible difference in the world. Our academic departments are committed to delivering a comprehensive education that embraces the newest technologies and the latest advancements in the field. Our 7.5 months of industry experience to students through the Practice School scheme present **market-ready** graduates who are sought after by the industry!

With a rich tapestry of industry relevant Programmes, arising from more than two decades of presence in Dubai, we have over 6000 successful graduates who occupy leading positions globally. Creative industry solutions have led to more than **50 start-ups** in the last 5 years with some joining the league of unicorns. Year after year, many of our graduates continue to pursue higher education in **Top Universities** around the globe.

We prioritize well-rounded personality development with opportunities for co-curricular and extra-curricular activities, leading to numerous national and international awards for our students.

Ready to set yourself on a path of lifelong success?

Choose BITS Pilani Dubai Campus!!

## WHY CHOOSE BITS PILANI DUBAI CAMPUS?



### World-Class Curriculum & Faculty

We offer a world-class curriculum that is broad based with unique options such as 7.5 months Practice School (Internship) or Thesis and a high degree of flexibility in the form of electives, minors, dual degree and more to cater to the diverse interests of students and broaden their education beyond a single area of study. The Faculty is highly experienced with doctoral and postdoctoral degrees from reputed universities worldwide.

### **International Exposure**

Dubai, an international business & education hub is a strategic base to hundreds of global companies and universities and offers plenty of opportunities to students to interact with professors, industry experts and seasoned professionals across the spectrum. It is home to more than 200 nationalities & offers the best healthcare, shopping, sport & entertainment and leisure opportunities in the world.

#### **Placement Assistance**

6

BITS Pilani Dubai Campus is a top pick for MNCs and local conglomerates looking for talent. Our campus placements maximize your job prospects, connecting you with top firms and endless career opportunities.

### **Stellar Ratings**

Our institution is ranked as the top private university in India and listed among the Top 300 in QS Employability Rankings 2022, reflecting our commitment to quality. Our recognition in the Global University Rankings of both THE and QS, as well as a prestigious 5-star rating from the Knowledge and Human Development Authority (KHDA) in 2023, based on Teaching, Research, Employability, and Internationalization, sets us apart as a premier destination for education.

#### State-of-the-Art Infrastructure

BITS Pilani Dubai Campus boasts cutting-edge facilities, including 30+ high-tech labs, world-class library, smart classrooms, incubation center, student housing, sports facilities and 24/7 Creative Lab.

#### Industry Internship

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The BITS Pilani Dubai's Practice School program offers a 7.5-month industry internship with hands-on experience within the 4 years duration of the programme. Collaborating with over 300 companies, it provides ample internship opportunities and sets the foundation for a successful future.

#### All Round Development

We prioritize student development in all areas. Our curriculum seamlessly integrates soft skills through engaging presentations and hands-on learning experiences. Supplement your academic journey with a diverse range of extracurricular activities and student-run clubs, providing the perfect platform to express yourself and enhance your non-academic skills. We just don't teach; we nurture future leaders through a combination of academics, personal growth opportunities and diverse learning environment, fostering critical thinking, leadership skills, and social responsibility.

#### Accomplished Alumni Network

Proud of its successful alumni, BITS Pilani Dubai Campus fosters engagement between alumni, students, and the institution. Alumni, including scientists, entrepreneurs, and leaders, inspire students to excel.



**PROGRAMMES OFFERED** 

FIRST DEGREE PROGRAMMES





✓ Data Science ✓ Aeronautics ✓ Robotics and Automation ✓ Computing and Intelligence ✓ Finance ✓ Entrepreneurship ✓ Materials Science and Engineering ✓ Philosophy, Economics and Politics

## **EDUCATIONAL PROCESS**

FIRST YEAR	Foundation Courses	
SECOND YEAR	Discipline Core Courses, Humanities Electives	
SUMMER BREAK	Practice School (PS) - 1 (2 Months)	
THIRD YEAR	Discipline Core Courses, Discipline Electives Open & Humanities Electives	
FOURTH YEAR	Discipline Electives &	PS II (5.5) Months
	Open Electives	Thesis
	PS II (5.5) MonthsDiscipline ElectivesThesisOpen Electives	

*Note:* In the fourth year students have option to opt for either PS II or Thesis in any one of the semesters.

## 1. GENERAL INSTITUTIONAL REQUIREMENT COURSES

## 2. STRUCTURE & REQUIREMENTS OF THE FIRST DEGREE PROGRAMMES

The category-wise structure of each programme

Category	Number of units required	Number of courses required
(I) General Institutional Requirement		
Humanities Electives	8	3
Science Foundation	12	6
Mathematics Foundation	12	4
Engineering Foundation	6	2
Technical Arts	10	4
General Awareness / Professional Courses	3 to 6	1 to 3
Sub-Total	51 to 54	20 to 22
(II) Discipline Requirement		
Core	33 to 48	10 to 16
Elective	12 to 27	4 to 9
Sub-Total	57 to 60	15 to 20
(III) Open Electives	15 to 27	5 to 9
Coursework Sub-Total	129 (min)	41(min)
(IV) PS-I and II or Thesis	25 or 9 to 16	2 or 1
Total	144 (min)	42 (min)

- a) General Biology, Biology Laboratory, General Chemistry, Chemistry Laboratory, Mechanics, Oscillations and Waves, and Physics Laboratory under Science Foundation.
- b) Mathematics I,II,III and Probability & Statistics under Mathematics Foundation.
- c) Electrical Sciences and Thermodynamics under Engineering Foundation.
- d) Computer Programming, Workshop Practice, Engineering Graphics, & Technical Report Writing under Technical Arts.
- e) Principles of Economics, Environmental studies Principles of Management under General Awareness / Professional courses.
- f) Courses from Languages and Literature, History and Philosophy, Political and Social Sciences, Fine Arts.

## **BACHELOR OF ENGINEERING** *in* **ARCHITECTURAL & URBAN ENGINEERING**

## Blending aesthetics with functionality, where innovation meets urban evolution

The program B.E. Architectural & Urban Engineering is a unique interdisciplinary program rooted in Architecture as the fundamental core. The program includes futuristic elements of four critical themes in the infrastructure sector, aligning with UAE's Vision for Sustainable Urban Development. These include – Urban Engineering & Smart Infrastructure, Computation & Digital Design, Sustainability & Environment, and Project Management & Finance. A graduate of this program will have fundamental knowledge in both architecture and urban engineering, gaining a significant edge.



#### Highlights of the program:

- State-of-the-art curriculum formulated after close consultation with top industry experts from prominent Architecture & Engineering firms.
- Curriculum is benchmarked with world-renowned universities.
- An industry rating of over 8.5/10 attests to the relevance of the curriculum to meet global needs.
- Exciting industry-led architectural projects during the program in both architecture and engineering firms.

## **CAREER PATHWAYS**

#### **Job Roles**

- Architectural Designer
- BIM (Building Information Modelling) Specialist
- Building Design/ Structural Engineer
- HVAC Engineer
- Lighting & Acoustic Designer
- Sustainability Specialist
- Building Systems Engineer
- Façade Engineer
- Urban Planning

#### Job Opportunities In

- Architecture Firms
- Engineering Consultancy
- Real Estate
- Building Design Firms
- Contracting & Project Management

**Higher Studies:** Students may pursue higher studies in architecture, urban engineering and multiple related areas

## **B.E. ARCHITECTURAL & URBAN** ENGINEERING

Senate appointed committee, subject to change if the situation warrants

#### Semester-wise pattern\*

	First Semester	Second Semester	Discipline Elective Courses
I YEAR	<ul> <li>Biology Laboratory</li> <li>General Biology</li> <li>Chemistry Laboratory</li> <li>General Chemistry</li> <li>Mathematics I</li> <li>Physics Laboratory</li> <li>Mechanics, Oscillations and Waves</li> <li>Engineering Graphics</li> </ul>	<ul> <li>Mathematics II</li> <li>Workshop Practice</li> <li>Computer Programming</li> <li>Electrical Sciences</li> <li>Technical Report Writing</li> <li>Probability and Statistics</li> <li>Thermodynamics</li> </ul>	<ul> <li>Landscape Architecture</li> <li>Green Building and Energy Conservation</li> <li>Heating and Cooling of Buildings</li> <li>Building Information Modeling (BIM)</li> <li>Building Services</li> <li>Renewable Energy Systems in Buildings</li> <li>Construction Management</li> <li>Financing Infrastructure projects</li> <li>Applications of Artificial Intelligence in Civil Engineering</li> </ul>
II YEAR	<ul> <li>Mathematics III</li> <li>Humanities electives</li> <li>Basic Design for Visualization</li> <li>Civil Engineering Materials</li> <li>Structural Mechanics</li> <li>Fluid Mechanics and Applications</li> </ul>	<ul> <li>Principles of Economics or Principles of Management</li> <li>Humanities electives</li> <li>Architectural Design Studio I</li> <li>Building Construction &amp; Technology</li> <li>Construction Economics</li> <li>Environmental studies</li> </ul>	<ul> <li>Machine Learning in Design Optimization</li> <li>Computer Applications in Civil Engineering</li> <li>Urban Mass Transit Planning, Operations and Management</li> <li>Principles of Geographical Information Systems</li> <li>Remote Sensing and Image Processing</li> <li>Environmental Impact Assessment</li> <li>Airport, Railways and Waterways</li> <li>Water &amp; Waste Water Treatment</li> </ul>
	Summer Term: Practi	ce School I	<ul> <li>Earthquake Resistant Design and Construction</li> <li>Introduction to Environmental Engineering</li> </ul>
III YEAR	<ul> <li>Open Electives/Humanities electives</li> <li>Architectural Design Studio II</li> <li>Geotechnical Design</li> <li>Design of Reinforced Concrete structures</li> </ul>	<ul> <li>Open Electives/Humanities electives</li> <li>Urban Planning and Sustainable Communities</li> <li>Building Acoustics and Lighting Design</li> </ul>	<ul> <li>Engineering Hydrology</li> <li>Urban Hydrology</li> <li>Introduction to Bridge Engineering and many more</li> </ul>
	<ul> <li>Highway Planning, Analysis and Design</li> <li>Discipline Electives</li> </ul>	<ul> <li>Design of steel structures</li> <li>Directed Research in Architecture - I</li> <li>Discipline Electives</li> </ul>	Discipline Core Courses - 48 Units (14 Courses) Discipline Electives - 12 Units (4 Courses) Open Electives -15 Units (5 Courses)
IV YEAR	<ul><li>Open Electives</li><li>Directed Research in Architecture - II</li></ul>	<ul> <li>Practice School-II / Thesis or Thesis and Electives</li> </ul>	Humanities Electives - 8 Units (3 Courses)
* This	is an operative pattern for the students as	approved by the	

## BACHELOR OF ENGINEERING in BIOTECHNOLOGY

#### BITS Pilani, Dubai Campus is the only University offering Engineering degree in Biotechnology in Dubai!

Biotechnology offer endless possibilities for those looking to leave a permanent mark in this world. From improving human health to preserving the environment, this rapidly growing field provides opportunities to work on society's most pressing challenges. Our Biotechnology program is designed to equip students with the skills and knowledge needed to succeed in this exciting niche field.

Our program focuses on hands-on training and practical experience, preparing students for careers in the applied microbiology, human disease biology, environmental biotechnology, nanotechnology, metabolomics, computational biology, pharmaceutical and agricultural industries. With our state-of-the-art labs and knowledgeable faculty, students have the resources they need to thrive. Our partnerships with biotechnology companies and research organizations offer opportunities for students to participate in cutting-edge research.

The demand for biotechnology in the Middle East is driving the growth of our department, which provides world-class facilities, hands-on training, and connections to R&D projects through university partnerships. With established MOUs with organizations like the International Center for Biosaline Agriculture (ICBA), Human Biosciences, USA, and RAK Medical and Health Sciences University (RAKMHSU), our students are well-positioned for success in the industry.

Enter the world of Biotechnology and begin to shape your future today.



## **CAREER PATHWAYS**

#### Job Roles

- Application Scientist
- Clinical Laboratory Technician
- Quality Control Scientist
- Process Development Scientist
- Biotechnologist
- Virologist
- Forensics
- Genetic Engineer
- Research Scientist
- Food Safety Specialist
- Immunologist

#### **Companies Hiring**

- Pfizer
- Pepsico
- Al Rawabi
- Dabur International
- Ceres Nanoscience
- Cooper Gneomics
- Merck
- Medcare hospital
- Himalaya Herbals
- EUROFINS
- 10X GENOMICS

**Higher Studies:** Many students have joined reputed universities for their higher studies in Forensics, Bio-Medical Engineering, Genetic Counselling, Immunology, Biotechnology, Biomedical, Bio-Pharmaceutical, Bio Science etc. such as Johns Hopkins, Harvard, MIT, University of Pennsylvania, Uppsala University, Umea University, TU Dresden, LMU Munich, Trinity College Dublin, McMaster University, Leiden University, Wageningen University, Bonn University, NUS, UCSD

## **B.E. BIOTECHNOLOGY**

#### Semester-wise pattern\*

I YEAR	First Semester <ul> <li>Mathematics I</li> <li>Computer Programming</li> <li>Biology Laboratory</li> <li>General Biology</li> <li>Chemistry Laboratory</li> <li>General Chemistry</li> <li>Engineering Graphics</li> </ul>	<ul> <li>Second Semester</li> <li>Mathematics II</li> <li>Electrical Sciences</li> <li>Mechanics, Oscillations and Waves</li> <li>Probability and Statistics</li> <li>Technical Report Writing</li> <li>Workshop Practice</li> <li>Physics Laboratory</li> <li>Thermodynamics</li> </ul>
II YEAR	<ul> <li>Mathematics III</li> <li>Open / Humanities Electives</li> <li>Biological Chemistry</li> <li>Microbiology</li> <li>Biophysics</li> <li>Cell Biology</li> <li>Environmental Studies</li> </ul>	<ul> <li>Principles of Economics or Principles of Management</li> <li>Open / Humanities Electives</li> <li>Genetic Engineering Techniques</li> <li>Genetics</li> <li>Introduction to Environmental Biotechnology</li> <li>Instrumental Methods of Analysis</li> </ul>
	Summer Term:	Practice School I
III YEAR	<ul> <li>Open / Humanities Electives</li> <li>Recombinant DNA Technology</li> <li>Industrial Microbiology &amp; Bioprocess Engineering</li> <li>Discipline Electives</li> </ul>	<ul> <li>Open / Humanities Electives</li> <li>Immunology</li> <li>Downstream Processing</li> <li>Experiments in Biotechnology</li> <li>Discipline Electives</li> </ul>
IV YEAR	<ul><li>Open Electives</li><li>Discipline Electives</li></ul>	<ul> <li>Practice School-II / Thesis or Thesis and Electives</li> </ul>

\* This is an operative pattern for the students as approved by the Senate appointed committee, subject to change if the situation warrants

#### **Discipline Elective Courses**

- Bioethics and Biosafety
- Nano Biotechnology
- Food Biotechnology
- Proteomics
- Introduction to Bioinformatics
- Immunotechnology
- Cell and Tissue Culture Technology
- Drug design and delivery
- Molecular Biology of the Cell
- Introduction to Plant Biotechnology
- Genomics
- **Biomolecular Modeling**
- Laboratory Project
- Design Project
- Special Project

#### **Software Tools**

- VMD
- Chimera
- VMD
- Amber
- Gaussian
- Avogadro
- xmGrace
- Pymol
- MetScape
- R
- GEPIA
- AutoDock tools
- Discovery Studio

Discipline Core Courses - 43 Units (13 Courses) **Discipline Electives - 15 Units (5 Courses) Open Electives - 15 Units (5 Courses)** Humanities Electives - 8 Units (3 Courses)

## **BACHELOR OF ENGINEERING** *in* **BIOTECHNOLOGY** *with specialization in* **APPLIED MOLECULAR BIOLOGY**

There is a growing demand for professionals with specialization in Molecular Biology in various industrial sectors, such as Cell Biology, Biophysics, Cancer, Genomics, Proteomics, Immunology, Virology, Agriculture and Computational Biology, across the world. This program is designed to impart knowledge and skills to graduates in the fields of Molecular Biology and Biotechnology, prepare them for the job market and help raise their aspirations. The program offers courses such as Proteomics, Genomics, Bioinformatics, Pharmaceutical Biotechnology, Plant Biotechnology and Immunotechnology in the knowledge areas related to applications of Molecular Biology.

Higher Studies: Numerous Opportunities for Masters and PhD in this field in leading universities such as Johns Hopkins, Harvard, MIT, University of Pennsylvania, Uppsala University, Umea University, TU Dresden, LMU Munich, Trinity College Dublin, McMaster University, Leiden University, Wageningen University, Bonn University, NUS, UCSD



### **CAREER PATHWAYS**

#### **Job Roles**

- Application Scientist
- Molecular Biologist
- Biotechnologist
- Virologist
- Immunologist
- Food Safety Specialist
- Clinical Laboratory Specialist
- Quality Control Scientist
- Forensic Scientist
- Genetic Engineer
- Process Developemnt Scientist
- Research & Development Scientist

#### **Job Opportunities In**

- Government Agencies
- Bio Pharma Companies
- Bio Tech Companies
- Genetic Engineering Companies
- Research Labs

## **B.E. BIOTECHNOLOGY** *with specialization in* **APPLIED MOLECULAR BIOLOGY**

#### Semester-wise pattern\*

		First Semester	Second Semester	Discipline Elective Courses
	I YEAR	<ul> <li>Biology Laboratory</li> <li>General Biology</li> <li>Chemistry Laboratory</li> <li>General Chemistry</li> <li>Mathematics I</li> <li>Physics Laboratory</li> <li>Mechanics, Oscillations and Waves</li> <li>Engineering Graphics</li> </ul>	<ul> <li>Mathematics II</li> <li>Workshop Practice</li> <li>Computer Programming</li> <li>Electrical Sciences</li> <li>Technical Report Writing</li> <li>Probability and Statistics</li> <li>Thermodynamics</li> </ul>	<ul> <li>Proteomics</li> <li>Genomics</li> <li>Molecular Biology of the Cell</li> <li>Applied Molecular Biology Project*</li> <li>Introduction to Bioinformatics</li> <li>Immunotechnology</li> <li>Introduction to Pharmaceutical Biotechnology</li> <li>Introduction to Plant Biotechnology</li> </ul>
/	II YEAR	<ul> <li>Mathematics III</li> <li>Open/Humanities Electives</li> <li>Biological Chemistry</li> <li>Microbiology</li> <li>Biophysics</li> <li>Cell Biology</li> <li>Environmental Studies</li> </ul>	<ul> <li>Principles of Economics Or Principles of Management</li> <li>Open/Humanities Electives</li> <li>Genetic Engineering Techniques</li> <li>Genetics</li> <li>Introduction to Environmental Biotechnology</li> <li>Instrumental Methods of Analysis</li> </ul>	Discipline Core -43 Units (13 Courses) Discipline Electives-15 Units (5 Courses) Open Electives-15 Units (5 Courses) Humanities Electives-8 Units (3 Courses)
		Summer Term: Prac	tice School I	
	III YEAR	<ul> <li>Open/Humanities Electives</li> <li>Recombinant DNA Technology</li> <li>Industrial Microbiology &amp; Bioprocess Engineering</li> <li>Discipline Electives</li> </ul>	<ul> <li>Open/Humanities Electives</li> <li>Immunology</li> <li>Experiments in Biotechnology</li> <li>Downstream Processing</li> <li>Discipline Electives</li> </ul>	
	IV YEAR	<ul><li> Open Electives</li><li> Discipline Electives</li></ul>	<ul> <li>Practice School-II / Thesis or Thesis and Electives</li> </ul>	
	* Thic	s is an operative pattern for the students a	s approved by the	

\* This is an operative pattern for the students as approved by the Senate appointed committee, subject to change if the situation warrants

## BACHELOR OF ENGINEERING in CHEMICAL ENGINEERING

The Department of Chemical Engineering at BITS Pilani, Dubai Campus is one of the premier chemical engineering departments in the gulf region. The department's goal is to produce students who will become leaders in their areas.

Chemical Engineering is undoubtedly one of the most versatile engineering disciplines. Through a judicious mix of mandatory & elective courses, the students at Dubai campus gain expertise in various areas of Chemical Engineering such as petroleum and petrochemicals, renewable energy, environmental engineering, biochemical engineering, nanoscience & technology, paper, cement, ceramics & glass, polymers & plastics, food processing and products, paints and dyes, textiles and synthetic fibers, etc. Also, students are enabled to enter interdisciplinary areas like Atomic and Molecular Simulation, Surface Science, Corrosion Engineering, Combustion Engineering and Polymer Technology.

#### Highlights of B.E. Chemical Engineering Programme:

- Courses are designed to encompass both the industrial and computational aspects of Chemical Engineering.
- Engaging classroom sessions include STEM activities and utilize interactive panels.
- Opportunities to get involved in departments, lab projects or design projects.
- Off-Campus thesis options in the final year in any University under the supervision of faculties from both the campuses.



## **CAREER PATHWAYS**

#### **Job Roles**

- Product Engineer
- Process Engineer
- Plant Engineer
- Chemical Engineer
- Project Heads
- Quality control Engineer
- Plant Manager
- Product Sales

#### **Companies Hiring**

- Reckitt Benckiser
- Monaco Engineering Solutions
- Petrofac
- Kingspan
- DNV-GL
- Clear Water Solutions, AI Shirawi

**Higher Studies:** Several graduates have pursued higher studies in Chemical Engineering, Process Engineering, Petroleum Engineering, Management, Environment Engineering, Material Engineering, Food Processing, Biomedical Engineering, Renewable energy from universities like Imperial College of London, University of Toronto, University of Waterloo, University of Melbourne and many more to further specialize.

## **B.E.CHEMICAL ENGINEERING**

#### Semester-wise pattern\*

#### **First Semester** Second Semester Biology Laboratory Mathematics II General Biology Workshop Practice Chemistry Laboratory Computer Programming A U General Chemistry Electrical Sciences Mathematics I **Technical Report Writing** Physics Laboratory Probability and Statistics Mechanics, Oscillations and Thermodynamics Waves Engineering Graphics Mathematics III Principles of Economics Humanities Electives or Principles of Management Fluid Mechanics Humanities Electives YEAR Chemical Process Calculations Heat Transfer Engineering Chemistry Numerical Methods for Chemical Chemical Engineering Engineers Thermodynamics Material Science & Engineering Separation Processes I Environmental Studies Summer Term: Practice School I Open / Humanities Electives Open / Humanities Electives Chemical Engineering Laboratory II Chemical Engineering Laboratory I £ **⊿** ∐ Process Dynamics & Control Separation Processes II Process Design Principles II Kinetics & Reactor Design Discipline Electives Process Design Principles I Discipline Electives YEAR Open Electives Practice School-II / Thesis or Discipline Electives Thesis and Electives

\* This is an operative pattern for the students as approved by the Senate appointed committee, subject to change if the situation warrants

#### **Discipline Elective Courses**

- Advanced Process Control
- Alternate Energy Resources
- Atomic and Molecules Simulations
- Biochemical Engineering
- Chemical Process Technology
- Colloids and Interface Engineering
- Corrosion Engineering
- Energy Conservation and Management
- Environmental Management Systems
- Environmental Pollution Control
- Fluidization Engineering
- Introduction to Nanoscience and Technology
- Modeling and Simulation in Chemical Engineering
- Molecular and Statistical Thermodynamics
- Paper and Pulp Technology
- Petroleum Downstream Processing
- Petroleum Refinery Engineering
- Petroleum Refining and Petrochemicals
- Petroleum Reservoir Engineering
- Polymer Technology
- Process Plant Safety
- Transport Phenomena
- Machine learning in Chemical Engineering

Discipline Core Courses - 45 Units (15 Courses) Discipline Electives - 15 Units (5 Courses) Open Electives - 15 Units (5 Courses) Humanities Electives - 8 Units (3 Courses)

#### BITS Pilani, Dubai Campus 17 Prospectus 2024

Software Tools

- PYTHON
- MATLAB
- MINITAB
- ASPEN HYSYS
- PROMAX

## BACHELOR OF ENGINEERING in CHEMICAL with specialization in ENERGY, ENVIRONMENT AND SUSTAINABILITY

Current market trends globally and in the UAE region emphasize the relevance of energy, environment and sustainability. To keep in line with the Sustainable Development Goals (SDGs) set by the United Nations and the target of "UAE Net Zero" by 2050, the Department of Chemical Engineering, BITS Pilani Dubai offers the program of B.E. Chemical with Specialization in Energy, Environment, and Sustainability.

This program in Energy, Environment and Sustainability connects Chemical Engineering concepts with all-inclusive challenges with the focus on environmental friendly practices, sustainability and generation of clean and affordable energy. To solve the problems inherently associated with energy, environment and sustainability there is an utmost importance to combine the understandings of molecular, chemical, physical, mathematical sciences with a strong foundation in Chemical Engineering principles. This program focuses on developing problem solving skills and scientific knowledge in the fields of energy, environment and sustainability to allow graduates to contribute in their local and global communities through work in a wide range of fields.



## **CAREER PATHWAYS**

#### Job Roles

- Sustainability Consultant
- Sustainability & Energy Engineer
- Environmental Consultant
- Energy Engineer
- Process Engineer
- Quality Engineer
- Waste Management Officer
- Carbon Market Analyst
- Decarbonization and Sustainability Consultant
- Life Cycle Assessment Engineer

#### Job Opportunities In

- Private and Public Organizations
- Constructions Service Providers
- Engineering Consultancies
- Quality Assurance Companies
- Regulatory Boards
- Government Agencies
- Energy Companies

**Higher Studies:** Students may pursue higher studies in Chemical Engineering, Sustainability, Enterprise and the Environment, Energy, Society and Sustainability, Business, Energy, Environment and Sustainability, Environmental Policy and Planning, Sustainable Systems, Process Engineering, Environment Engineering, Material Engineering, Renewable energy from universities around the world.

## **B.E. CHEMICAL** *with specialization in* **ENERGY, ENVIRONMENT AND SUSTAINABILITY**

#### Semester-wise pattern\*

	First Semester	Second Semester	Discipline Elective Courses
I YEAR	<ul> <li>Biology Laboratory</li> <li>General Biology</li> <li>Chemistry Laboratory</li> <li>General Chemistry</li> <li>Mathematics I</li> <li>Physics Laboratory</li> <li>Mechanics, Oscillations and Waves</li> <li>Engineering Graphics</li> </ul>	<ul> <li>Mathematics II</li> <li>Workshop Practice</li> <li>Computer Programming</li> <li>Electrical Sciences</li> <li>Technical Report Writing</li> <li>Probability and Statistics</li> <li>Thermodynamics</li> </ul>	<ul> <li>Sustainable Energy Systems</li> <li>Energy Systems Engineering</li> <li>Environmental Management Systems</li> <li>Environment, Development and Climate Change</li> <li>Energy Storage Technologies</li> <li>Energy Economics and Policy</li> <li>Environmental Pollution Control</li> <li>Laboratory Project or Design Project or Special Project</li> <li>Environmental Sustainability Ventures</li> </ul>
II YEAR	<ul> <li>Mathematics III</li> <li>Fluid Mechanics</li> <li>Chemical Process Calculations</li> <li>Engineering Chemistry</li> <li>Chemical Engineering Thermodynamics</li> <li>Open/Humanities Electives</li> <li>Environmental Studies</li> </ul>	<ul> <li>Principles of Economics Or Principles of Management</li> <li>Heat Transfer</li> <li>Numerical Methods for Chemical Engineers</li> <li>Material Science &amp; Engineering</li> <li>Separation Processes I</li> <li>Open/ Humanities Electives</li> </ul>	Discipline Core Courses - 45 Units (15 Courses) Discipline Electives - 15 Units (5 Courses) Open Electives - 15 Units (5 Courses) Humanities Electives - 8 Units (3 Courses)
	Summer Term: Pract	ice School I	
III YEAR	<ul> <li>Chemical Engineering Laboratory I</li> <li>Separation Processes II</li> <li>Process Design Principles I</li> <li>Kinetics &amp; Reactor Design</li> <li>Discipline Electives</li> <li>Open/Humanities Electives</li> </ul>	<ul> <li>Chemical Engineering Laboratory II</li> <li>Process Dynamics &amp; Control</li> <li>Process Design Principles II</li> <li>Discipline Electives</li> <li>Open/Humanities Electives</li> </ul>	
IV YEAR	<ul><li>Open Electives</li><li>Discipline Electives</li></ul>	<ul> <li>Practice School-II / Thesis or Thesis and Electives</li> </ul>	

Dissipling Floative Courses

\* This is an operative pattern for the students as approved by the Senate appointed committee, subject to change if the situation warrants

## BACHELOR OF ENGINEERING in CIVIL ENGINEERING

## *Civil Engineering: Designing & Building Infrastructures that define Modern Society*

Civil Engineering, a discipline that blends creativity and practicality, stands as one of the oldest, most essential and ever-growing branches of engineering. The Bachelor of Engineering (B.E.) in Civil Engineering is not just an academic program; it's a journey towards becoming a crucial contributor to the development and sustainability of our built environment.

This program is designed to equip students with a robust foundation in engineering principles, coupled with specialized knowledge and skills in designing, constructing, and maintaining the infrastructure that is pivotal to modern society.

#### Highlights of B.E. Civil Engineering Program:

- State-of-the-art curriculum with modular approach taught by eminent faculty
- Frequent educational visits to UAE's major infrastructural projects for hands-on learning
- Guidance from industry through regular expert lectures
- Advanced electives on sustainability and artificial intelligence-based applications
- Opportunity to participate in live projects at leading companies through our Practice School program



## **CAREER PATHWAYS**

#### **Job Roles**

- Project Engineers/ Managers
- Structural Design Engineers
- Geotechnical Specialist
- Sustainability Consultant
- Environmental Engineer
- Transportation and Urban Planners
- Construction Engineers

#### **Companies Hiring**

- Sobha Constructions LLC
- Sobha Realty
- AESG Dubai
- EIC Global
- Asteco Property Management

**Higher Studies:** Several Graduates have opted for higher studies after completion of Civil Engineering from universities like TU Delft, University of Bath, HEC Paris, HTW Dresden, Heriot-Watt University and University of Melbourne etc.

## **B.E.CIVIL ENGINEERING**

#### Semester-wise pattern\*

#### **First Semester** Biology Laboratory General Biology Chemistry Laboratory YEAR General Chemistry Mathematics I Physics Laboratory Mechanics, Oscillations and Waves Engineering Graphics Mathematics III Humanities Electives Fluid Mechanics EAR Mechanics of Solids Surveying Civil Engineering Materials Principles of Economics or Principles of Management Open / Humanities Electives Design of Reinforced Concrete Structures A E Hydraulic Engineering Foundation Engineering Ξ Discipline Electives YEAR Open Electives

#### Second Semester

- Mathematics II
- Workshop Practice
- Computer Programming
- Electrical Sciences
- Technical Report Writing
- Probability and Statistics
- Thermodynamics
- Humanities Electives
- Analysis of Structures
- Construction Planning &Technology
- Soil Mechanics
- Highway Engineering
- Environmental Studies

#### Summer Term: Practice School I

- Open / Humanities Electives
- Water & Waste Water Treatment
- Design of Steel Structures
- Engineering Hydrology
- Discipline Electives
- Practice School-II / Thesis or Thesis and Electives

\* This is an operative pattern for the students as approved by the Senate appointed committee, subject to change if the situation warrants

#### **Discipline Elective Courses**

- Applications of Artificial Intelligence in Civil Engineering
- Airport, Railways and Waterways
- Green Buildings and Energy Conservation
- **Environmental Impact Assessment**
- Principles of Geographical Information System (GIS)
- **Advanced Foundation Systems**
- Introduction to Finite Element Methods
- Remote Sensing and Image Processing
- Computer Applications in Civil Engineering
- Disaster Management
- Geotechnical Earthquake
- **Engineering & Machine Foundation**
- Introduction to Environmental Engineering
- Introduction to Bridge Engineering
- **Operation Research for Engineers**
- **Design of Foundation Systems**
- Geosynthetics and Reinforced Soil Structure
- Structural Dynamics

#### Software Tools

- Bentley STAAD.Pro Connect
- ArcGIS GIS and Mapping softwares by Esri
- PLAXIS 2D Bentley Systems
- PTV VISSIM Traffic Simulation Software
- AutoCAD Autodesk
- Abagus FEA Simulia
- MATLAB MathWorks
- SketchUp Studio

**Discipline Core Courses - 48 Units (14 Courses) Discipline Electives - 12 Units (4 Courses) Open Electives -15 Units (5 Courses)** Humanities Electives - 8 Units (3 Courses)

## **BACHELOR OF ENGINEERING** *in* **COMPUTER SCIENCE**

The engineering degree in Computer Science at BITS Pilani Dubai Campus is designed to produce worldclass computer engineers with the ability to design and develop computer systems and applications.

The Computer Science curriculum prepares our students with knowledge and skills in computer science and engineering to solve real-world problems. It enables our students to have proficiency in modern hardware devices and software tools to meet the industry requirements.

The courses are designed to provide a comprehensive understanding of computing intricacies, with a focus on hardware, software, and networking. Most courses include both theoretical and practical sessions to improve understanding. The department has a vibrant student body, highly qualified faculty members, and is committed to achieving high standards of excellence in academic and research activities in the coming years.

The students will have opportunities to enhance their skills through professional organizations like ACM, ACM-W, Linux User Group, Google Developer Students Club (GDSC), and Microsoft Tech. Club. Our students have also won prestigious prizes and cash awards in several programming competitions and hackathons in the Middle East.

Our graduates are equipped to succeed in the competitive world of computer science, with expertise in computer hardware design, software development, programming, and computing theory.

At BPDC, we believe that computing offers unlimited opportunities for true creativity and innovation. Join us and unleash your potential with a dynamic and exciting program that will help you achieve your goals.



### **CAREER PATHWAYS**

#### Job Roles

- Agile Applications Development Engineer
- Big Data Engineer
- Blockchain Developer
- Computer Engineer
- Computer Network Architect
- Customer Support Executive
- Cyber Security Specialist
- Data Scientist
- Database Administrator
- Game Developer
- IoT Development Engineer
- Machine Learning Engineer
- Software Engineer
- System & Network Administrator
- System Analyst
- Web and Mobile Applications Development Engineer

#### **Companies Hiring**

- Al Futtaim Systems
- Amazon
- Deloitte
- Emerson
- Emirates
- ESRI
- Google
- Landmark Group
- Microsoft
- Noon
- Oracle
- PWC
- SharafDG
- Standard Chartered Bank

**Higher Studies:** Several graduates have pursued their masters programs in Computer Science, AI & ML, Software Engineering, Software Systems, Information Security, Multimedia & Animation, Gaming, Cyber Security, AI & Data Science, at well-known institutions such as Carnegie Mellon University, University of Southern California, Pennsylvania State University, Trinity College -Dublin, University of California-Los Angeles, University of Leeds, Virginia Tech, University of Edinburgh, Technical University of Munich, University of Toronto, Northeastern University, Purdue University and many more.

## **B.E.COMPUTER SCIENCE**

#### Semester-wise pattern\*

#### **First Semester**

- Biology Laboratory
- General Biology
- Chemistry Laboratory
- General Chemistry
- Mathematics I

YEAR

YEAR

**⊿** ∐

YEAR

- Physics Laboratory
- Mechanics, Oscillations and Waves
   Thermodynamics
- Engineering Graphics
- Mathematics III
- Humanities Electives
- Logic in Computer Science
- Discrete Structures for Computer Science
  - Object Oriented Programming **Digital Design**

- Second Semester
- Mathematics II
- Workshop Practice
- Computer Programming
- Electrical Sciences
- Technical Report Writing
- Probability and Statistics
- Principles of Economics or Principles of Management
- Humanities Electives
- Data Structures & Algorithms
- Microprocessors & Interfacing
- **Database Systems** Environmental Studies

#### Summer Term: Practice School I

- Open / Humanities Electives
- Operating Systems
- Principles of Programming Languages
- Computer Architecture
- Theory of Computation
- Discipline Electives
- Open Electives
- Discipline Electives

- Open / Humanities Electives
- Compiler Construction
- Design & Analysis of Algorithms
- Computer Networks
- **Discipline Electives**
- Practice School-II / Thesis or Thesis and Electives

\* This is an operative pattern for the students as approved by the Senate appointed committee, subject to change if the situation warrants

#### **Discipline Elective Courses**

- Artificial Intelligence
- Blockchain Technology
- Cloud Computing
- **Computer Graphics**
- Cryptography
- Cyber Physical Systems and Security
- Cybersecurity Analytics and Forensics
- Data Mining
- Data Science for Healthcare
- Deep Learning
- Foundations of Data Science
- Generative Artificial Intelligence
- Human Computer Interaction
- Image Processing
- Information Retrieval
- Internetworking Technologies
- Machine Learning
- Natural Language Processing
- **Network Security**
- Neural Networks and Fuzzy Logic
- Number Theory
- Object Oriented Analysis and Design
- Parallel Computing
- Quantum Architecture and Programming
- Quantum Information and Computation
- **Real Time Systems**
- Service Oriented Computing
- Software Engineering
- Software for Embedded Systems
- System Security

**Discipline Core Courses - 48 Units (14 Courses) Discipline Electives - 12 Units (4 Courses) Open Electives - 15 Units (5 Courses)** Humanities Electives - 8 Units (3 Courses)

## **BACHELOR OF ENGINEERING** *in* **ELECTRICAL & ELECTRONICS ENGINEERING**

#### Let's shape the future of technology!

Our cutting-edge curriculum blends the principles of electrical and electronics engineering to give you the skills you need to design and develop the systems that power our world. With specializations in emerging engineering sectors, our undergraduate degree program provides a comprehensive education in the core domains of Electrical and Electronics Engineering.

In **Electrical and Electronics Engineering**, students learn about different fundamental principles of electricity, circuit design, machines, and electronic components, in addition to the generation, transmission, distribution, and protection of power systems. They will delve into areas such as communications systems, electromagnetism, signals and image processing, microelectronics, control systems, and renewable energy technologies to understand how to design, analyse, and optimize electrical and electronic systems and devices.

Whether you are interested in protecting power system components against faults or abnormalities, exploring solid-state electronics, or making a difference in the field of renewable energy systems and solid-state drives, our program has everything you need to succeed.

Through capstone projects, thesis, and practice school programme, you will be able to make a difference that has an impact on the community and the lives of individuals. Apart from academics, students will have the opportunity to be part of international professional organizations such as the Institute of Electrical and Electronics Engineers (IEEE), Women in Engineering (WIE), and the Society of Women Engineers (SWE). Moreover, they can actively participate in institutional clubs like IFOR (Intelligent Flying Object for Reconnaissance) and AOEE (Association of Electronic Engineers).



### **CAREER PATHWAYS**

#### **Job Roles**

- Electrical Engineer
- Project Engineer
- Design Engineer
- Sales and Service Engineer
- Automation & Control Engineer
- Engineering Consultant
- Energy and EV Engineer
- Technical Support Engineer
- Application Engineer
- Power System Engineer

#### **Companies Hiring**

- Emerson
- Schneider Electric
- L&T
- Du Telecom
- Honeywell
- Weidmuller
- OTIS Elevators
- Schindler
- EATON
- TUV Middle East

**Higher Studies:** Several graduates have opted for Higher Education in Electrical Engineering, Computer Control and Automation, Industrial and Systems, Aeronautics, Communications, Digital Signal Processing, Wireless Communications, Biomedical Engineering, Engineering, Business Management etc. with globally reputed universities, such as ETH Zurich, University of Pennsylvania, Carnegie Mellon, University of California, Los Angeles, Columbia University, University of Toronto, Virginia Tech, Harvard Business School, Stanford University and many more.

## **B.E.ELECTRICAL & ELECTRONICS ENGINEERING**

#### Semester-wise pattern\*

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I YEAR	First Semester Biology Laboratory General Biology Chemistry Laboratory General Chemistry Mathematics I Physics Laboratory Mechanics, Oscillations and Waves Engineering Graphics	<ul> <li>Second Semester</li> <li>Mathematics II</li> <li>Workshop Practice</li> <li>Computer Programming</li> <li>Electrical Sciences</li> <li>Technical Report Writing</li> <li>Probability and Statistics</li> <li>Thermodynamics</li> </ul>	<ul> <li>Computer Archite</li> <li>Computer based</li> <li>Data Communica</li> <li>Digital Image Pro</li> <li>Electric Power Ut</li> <li>Fiber Optics &amp; Op</li> <li>Internet of Things</li> <li>Introduction to M</li> <li>Medical Instrume</li> </ul>
II YEAR	<ul> <li>Mathematics III</li> <li>Humanities Electives</li> <li>Electrical Machines</li> <li>Electromagnetic Theory</li> <li>Digital Design</li> <li>Electronic Devices</li> </ul>	<ul> <li>Principles of Economics or Principles of Management</li> <li>Humanities Electives</li> <li>Microprocessors &amp; Interfacing</li> <li>Control Systems</li> <li>Signals &amp; Systems</li> <li>Microelectronic Circuits</li> <li>Environmental Studies</li> </ul>	<ul> <li>Smart Grid for Su</li> <li>Energy Storage S</li> <li>Modern Control S</li> <li>Neural Networks</li> <li>Power System Ar</li> <li>Object Oriented</li> <li>Operating System</li> </ul>
	Summer Term:	Practice School I	Power Apparatus
YEAR	<ul> <li>Open / Humanities Electives</li> <li>Communication Systems</li> <li>Optimization Or Engineering Optimization</li> <li>Analog &amp; Digital VLSI Design</li> </ul>	<ul> <li>Open/Humanities Electives</li> <li>Analog Electronics</li> <li>Power Electronics</li> <li>Power Systems</li> <li>Discipline Electives</li> </ul>	<ul> <li>Satellite Commun</li> <li>Electrical and Ele</li> <li>Wind Electrical S</li> <li>Advanced Power</li> <li>Power Systems L</li> </ul>
٦	<ul> <li>Discipline Electives</li> </ul>		Software Tools
YEAR	<ul><li>Open Electives</li><li>Discipline Electives</li></ul>	<ul> <li>Practice School-II / Thesis or Thesis and Electives</li> </ul>	<ul> <li>cadence</li> <li>CST Microwave St</li> <li>Mutisim</li> <li>PROTEUS</li> </ul>

\* This is an operative pattern for the students as approved by the Senate appointed committee, subject to change if the situation warrants

#### **Discipline Elective Courses**

- tecture
- d Control Systems
- ation Networks
- rocessing
- **Jtilization and Illumination**
- Optoelectronics
- as
- MEMS
- entation
- Sustainable Energy
- Systems
- Systems
- s & Fuzzy Logic
- Analysis and Control
- d Programming
- ms
- us & Networks
- unication
- lectronic Circuits Laboratory
- Systems
- er System
- Laboratory
  - MiPower Studio = MATLAB
- PROTEUS
- LabVIEW

**Discipline Core Courses - 48 Units (14 Courses) Discipline Electives - 12 Units (4 Courses)** Humanities Electives - 8 Units (3 Courses) **Open Electives - 15 Units (5 Courses)** 

## **BACHELOR OF ENGINEERING** *in* **ELECTRONICS & COMMUNICATION ENGINEERING**

#### Let's shape the future of technology!

Electronics and Communication Engineering is among the most vibrant fields of engineering in terms of pushing boundaries, discovering new scientific breakthroughs, creating innovative technologies, and making a real impact on the world.

Electronics and Communication Engineering focuses on understanding the operational concepts and crafting the structure of electronic components, circuits, and systems, encompassing a broad spectrum from mobile phones to wireless networks and satellite communication systems.

In **Electronics and Communication Engineering**, students acquire foundational knowledge and theories essential for their future professional roles, encompassing analysis, system implementation, operation, production, and maintenance within the engineering sector.

Students are provided with opportunities to engage with cutting-edge equipment and software across various domains, including electronic circuits, digital electronics, digital signal processing, microcontrollers, digital communications, microwaves, control systems, optical communications, the Internet of Things, and VLSI design.

Project-based learning, thesis, and practice school program are further opportunities for students to work on real-time projects and obtain practical experience.

The program is particularly suitable for students interested in dynamic industries, including aerospace, automotive, consumer goods, defence, desalination, electronics, IC design, oil and gas, satellite communication stations, and telecommunication.

Apart from academics, students will have the opportunity to be part of international professional organizations such as the Institute of Electrical and Electronics Engineers (IEEE), Women in Engineering (WIE), and the Society of Women Engineers (SWE). Moreover, they can actively participate in institutional clubs like IFOR (Intelligent Flying Object for Reconnaissance) and AOEE (Association of Electronic Engineers).



### **CAREER PATHWAYS**

#### **Job Roles**

- Communication Engineer
- Network Administrator
- IC Design Engineer
- System Administrator
- Deployment & Science Engineer
- Security System Engineer
- Procurement Data Analyst
- Development Operations Engineer
- Data Engineer
- Embedded Systems Analyst
- IoT Engineer

#### **Companies Hiring**

- Intel
- NVIDIA
- Microsoft
- Micron
- QualcommSamsung
- IBM
- AMD
- ARM
- L&T
- Google
- SanDisk

**Higher Studies:** Several graduates have pursued Higher Education in Electronics and Communication Engineering specializing in the areas such as Aeronautics, Communications, Digital Signal Processing, Wireless Communications, Biomedical Engineering, Computer Control and Automation, Industrial and Systems Engineering, Business Management etc. with globally reputed Universities, such as California Institute of Technology, University of Pennsylvania, Carnegie Mellon, University of California, Los Angeles, Columbia University, University of Toronto, Virginia Tech, Harvard Business School, Stanford University and many more.

## **B.E.ELECTRONICS & COMMUNICATION ENGINEERING**

#### Semester-wise pattern\*

 •		
First Semester Biology Laboratory General Biology Chemistry Laboratory General Chemistry Mathematics I Physics Laboratory Mechanics, Oscillations and Waves Engineering Graphics	<ul> <li>Second Semester</li> <li>Mathematics II</li> <li>Workshop Practice</li> <li>Computer Programming</li> <li>Electrical Sciences</li> <li>Technical Report Writing</li> <li>Probability and Statistics</li> <li>Thermodynamics</li> </ul>	<ul> <li>Computer Architecture</li> <li>Computer based Control Systems</li> <li>Cryptography</li> <li>Reconfigurable Computing</li> <li>Machine Learning for Electronics E</li> <li>Object Oriented Programming</li> <li>Operating Systems</li> <li>Internet of Things</li> <li>Analog &amp; Digital VLSI Design</li> </ul>
<ul> <li>Mathematics III</li> <li>Humanities Electives</li> <li>Electrical Machines</li> <li>Electromagnetic Theory</li> <li>Digital Design</li> <li>Electronic Devices</li> </ul>	<ul> <li>Principles of Economics or Principles of Management</li> <li>Humanities Electives</li> <li>Microprocessors and Interfacing</li> <li>Control Systems</li> <li>Signals &amp; Systems</li> <li>Microelectronic Circuits</li> <li>Environmental Studies</li> </ul>	<ul> <li>Analog &amp; Digital VLOI Design</li> <li>Digital Image Processing</li> <li>Antenna Theory and Design</li> <li>EM Fields and Microwave Enginee</li> <li>Telecommunication Switching Syst</li> <li>Introduction to MEMS</li> <li>Medical Instrumentation</li> <li>Mobile Telecommunication Network</li> </ul>
Summer Term:	Practice School I	<ul> <li>Modern Communication Technolog</li> </ul>
<ul> <li>Open / Humanities Electives</li> <li>Communication Systems</li> <li>Electromagnetic Fields &amp; Microwave Engineering</li> <li>Digital Signal Processing</li> <li>Discipline Electives</li> </ul>	<ul> <li>Open / Humanities Electives</li> <li>Analog Electronics</li> <li>Communication Networks</li> <li>Information Theory &amp; Coding</li> <li>Discipline Electives</li> </ul>	<ul> <li>Satellite Communication</li> <li>Electronic Devices Simulation Labor</li> <li>Digital Communication</li> <li>Data Communication Networks</li> <li>FPGA Based System Design Labor</li> </ul>
<ul><li>Open Electives</li><li>Discipline Electives</li></ul>	<ul> <li>Practice School-II or Thesis or Thesis and Electives</li> </ul>	Software Tools cadence MiPower CST Microwave Studio MATLAB Mutisim LabVIEW

\* This is an operative pattern for the students as approved by the Senate appointed committee, subject to change if the situation warrants

#### **Discipline Elective Courses**

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- PROTEUS

**Discipline Core Courses - 48 Units (14 Courses) Discipline Electives - 12 Units (4 Courses)** Humanities Electives - 8 Units (3 Courses) **Open Electives - 15 Units (5 Courses)** 

## **BACHELOR OF ENGINEERING** *in* **ELECTRONICS & COMPUTER ENGINEERING**

There is a growing demand for the professionals in the field of IoT (Internet of Things), Industrial Internet of Things (IIoT), Embedded System Design, Artificial Intelligence and Machine learning-based Technologies, Robotics and Drone Technology, Computer Vision based Intelligent Systems, Design of Computer hardware and Integrated Circuits (ICs). This curriculum, which is jointly offered by the departments of Electrical and Electronics Engineering and Computer Science, is designed to meet industry requirements by providing students with knowledge and skills in both computer hardware and software applications.

The students will get hands on experience in the software and hardware tools like Amazon Web Services (AWS), Python programming tools, Raspbian OS, MATLAB, Intel FPGA Kits, Semiconductor IC Design using Cadence, Raspberry pi, NVIDIA GPU kits, Embedded Systems Development using PROTEUS, CST Studio, Cisco Packet Tracer, RTOS Simulator and LabVIEW. Along with this, students will be provided with high end computing systems for Artificial Intelligence and Machine Learning applications.

Apart from academics, students will get an opportunity to be a part International professional organizations such as Institute of Electrical and Electronics Engineers (IEEE), Women in Engineering (WIE), Society of Women Engineers (SWE), Association for Computing Machinery (ACM) and Institutions of Engineers India (IEI). Moreover, they can actively participate in institutional clubs like, IFOR (Intelligent Flying Object for Reconnaissance), AOEE, (Association of Electronic Engineers), Linux user group, Google Developer Students Club (GDSC) and Microsoft Tech Club.



## **CAREER PATHWAYS**

#### **Job Opportunities**

- Computer Systems Engineer
- Software Engineer
- Program Analyst
- System Administrator
- Firmware Engineer
- IoT Engineer
- Network Engineer
- Processor Designer
- IC Design Engineer
- Embedded System Engineer
- Database Administrator

## Higher Studies Opportunities in the field of:

- Artificial Intelligence
- Machine Learning
- Data Science
- Computer Vision
- IC Design
- Communication and networking
- Cyber Security
- Robotics
- Embedded Systems
- Mechatronics

## **B.E. ELECTRONICS & COMPUTER ENGINEERING**

#### Semester-wise pattern\*

First Semester	Second Semester	Discipline Elective Courses
<ul> <li>Biology Laboratory</li> <li>General Biology</li> <li>Chemistry Laboratory</li> <li>General Chemistry</li> <li>Mathematics I</li> <li>Physics Laboratory</li> <li>Mechanics, Oscillations and Waves</li> <li>Engineering Graphics</li> </ul>	<ul> <li>Mathematics II</li> <li>Workshop Practice</li> <li>Computer Programming</li> <li>Electrical Sciences</li> <li>Technical Report Writing</li> <li>Probability and Statistics</li> <li>Thermodynamics</li> </ul>	<ul> <li>Robotics</li> <li>Blockchain Technology</li> <li>Neural Networks and Fuzzy Log</li> <li>Artificial Intelligence for Robotics</li> <li>Control System Laboratory</li> <li>FPGA Based System Design La</li> <li>Internet of Things (IoT)</li> <li>Computer Based Control System</li> </ul>
<ul> <li>Mathematics III</li> <li>Humanities Electives</li> <li>Object Oriented Programming</li> <li>Electronic Devices</li> <li>Digital Design</li> <li>Discrete Structures for Computer Science</li> </ul>	<ul> <li>Principles of Economics (or) Principles of Management</li> <li>Data Structures and Algorithms</li> <li>Microprocessors and Interfacing</li> <li>Control Systems</li> <li>Signals and Systems</li> <li>Microelectronic Circuits</li> <li>Environmental Studies</li> </ul>	<ul> <li>Medical Instrumentation</li> <li>Digital Signal Processing</li> <li>Machine Learning for Electronic</li> <li>Embedded System Design</li> <li>Digital Image Processing</li> <li>VLSI Design</li> <li>Database Systems</li> <li>Artificial Intelligence</li> </ul>
Summer Term: Pract	ice School I	Parallel Computing
<ul> <li>Open / Humanities Electives</li> <li>Analog and Digital VLSI Design</li> <li>Computer Architecture</li> <li>Communication Networks</li> <li>Discipline Electives</li> </ul>	<ul> <li>Open / Humanities Electives</li> <li>Real Time Operating Systems</li> <li>Network Programming</li> <li>Discipline Electives</li> </ul>	<ul> <li>Software for Embedded System</li> <li>Network Security</li> <li>Cloud Computing</li> <li>Software Engineering</li> <li>Human Computer Interaction</li> <li>Quantum Architecture and Prog</li> <li>Data Storage Technologies and</li> </ul>
<ul> <li>Open Electives</li> <li>Discipline Electives</li> </ul>	<ul> <li>Practice School-II / Thesis or Thesis and Electives</li> </ul>	Discipline Core Courses - 48 U Discipline Electives - 12 Units ( Humanities Electives - 8 Units Open Electives - 15 Units (5 Co

\* This is an operative pattern for the students as approved by the Senate appointed committee, subject to change if the situation warrants

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Units (14 Courses) (4 Courses) s (3 Courses) ourses)

## **BACHELOR OF ENGINEERING** *in* **MATHEMATICS & COMPUTING**

The B.E. Mathematics and Computing is an ideal choice for the students who are interested in the interplay between mathematical & statistical theory and modern computational tools for applications in Data Sciences, Computational Finance, and Scientific Computing. It is designed to equip students with an appropriately strong foundation in Mathematics & Statistics, and required Computer Science basics for computational thinking and enables them to develop and apply analytical and problem-solving skills in a variety of fields in Engineering including IT industry, Finance sector and Scientific organizations. With a focus on both theoretical and computational aspects of mathematics and computing, this program prepares students for a wide range of careers in industry, academics, and research & development.

**Higher Studies:** Numerous opportunities for Masters & PhD in this field in leading universities in USA, UK, Germany, Australia, India, China, Japan etc



## **CAREER PATHWAYS**

#### **Job Roles**

- Data Scientist
- Finance Analyst
- Regulatory Model
   Developer
- R&D Engineer
- Software Engineer

#### **Job Opportunities In**

- Banking Industry
- Insurance Companies
- Business Consulting
- IT Companies
- Trading Companies
- Government Agencies
- Quality Assurance
- Audit Firms
- Tax and Advisory Services

## **B.E. MATHEMATICS & COMPUTING**

#### Semester-wise pattern\*

	First Semester	Second Semester	Discipline Elective Courses	AutoCAD
I YEAR	<ul> <li>Mathematics I</li> <li>Biology Laboratory</li> <li>General Biology</li> <li>Chemistry Laboratory</li> <li>General Chemistry</li> <li>Physics Laboratory</li> <li>Mechanics, Oscillations, and waves</li> </ul>	<ul> <li>Mathematics II</li> <li>Workshop Practice</li> <li>Computer Programming</li> <li>Electrical Sciences</li> <li>Technical Report Writing</li> <li>Probability and Statistics</li> <li>Thermodynamics</li> </ul>	<ul> <li>Image Processing</li> <li>Cryptography</li> <li>Machine Learning</li> <li>Artificial Intelligence</li> <li>Data Mining</li> <li>Deep Learning</li> <li>Graph Mining</li> <li>Network Security</li> <li>Derivatives and Risk Management</li> </ul>	<ul> <li>Autocal</li> <li>CATIA</li> <li>SOLIDWA</li> <li>ANSYS</li> <li>MSC ADA</li> <li>MATLAB</li> </ul>
II YEAR	<ul> <li>Mathematics III</li> <li>Linear Algebra and Applications</li> <li>Object Oriented Programming</li> <li>Discrete Mathematics</li> <li>Elementary Real Analysis</li> <li>Open/ Humanities Electives</li> <li>Environmental Studies</li> </ul>	<ul> <li>Numerical Analysis</li> <li>Data Structures &amp; Algorithms</li> <li>Numerical Optimization</li> <li>Stochastic Calculus and Application to Finance</li> <li>Scientific Computing Laboratory</li> <li>Open/ Humanities Electives</li> </ul>	<ul> <li>Computer Graphics</li> <li>Computation of Option Pricing Models</li> <li>Introduction to Statistical Inference</li> <li>Applied Stochastic Process</li> <li>Mathematical Theory of Finite Elemer</li> <li>Time Series Analysis and Forecasting</li> <li>Study/Lab/Design Project</li> </ul>	nt Methods
	Summer Term: Pra	actice School I	Discipline Core Courses - 48 Units ( Discipline Electives - 12 Units (4 Co	
III YEAR	<ul> <li>Algebra I</li> <li>Foundations of Data Science</li> <li>Statistical Data Analysis</li> <li>Mathematical Modelling</li> <li>Humanities/ Discipline Elective</li> </ul>	<ul> <li>Design and Analysis of Algorithms</li> <li>Computational Partial Differential Equations</li> <li>Humanities/ Discipline Electives</li> </ul>	Humanities Electives - 8 Units (3 Co Open Electives - 15 Units (5 Courses	ourses)
IV YEAR	<ul><li>Open Electives</li><li>Discipline Electives</li></ul>	<ul> <li>Practice School-II / Thesis or Thesis and Electives</li> </ul>		

\* This is an operative pattern for the students as approved by the Senate appointed committee, subject to change if the situation warrants

#### 31

Software Tools

SOLIDWORKS

AutoCAD

ANSYS MSC ADAMS MATLAB

Discipling Elective Courses

## **BACHELOR OF ENGINEERING** *in* **MECHANICAL ENGINEERING**

## Mechanical Engineering is the broadest of the engineering professions.

As one of the multidisciplinary core engineering field, our world-class Mechanical Engineering department is dedicated to providing students with a comprehensive education that combines theoretical learning with practical hands-on experience. Mechanical Engineering offers students the chance to develop transferable skills and critical thinking abilities to solve complex industry and global problems.

Mechanical Engineers learn to solve Engineering Problems in Design, Optimization, Manufacturing, Thermo-fluids and Engineering Management. Our curriculum is designed to cover all the core topics of Mechanical Engineering, as well as specialized areas such as Robotics and Automation, Mechatronics, Energy Conversion, Energy Management, Materials and 3D Printing, HVAC, and Aeronautics. With hands-on training in industry-standard softwares our students are prepared to take on real-world challenges.

At BITS Pilani Dubai Campus, we provide opportunities for our students to be associated with professional organizations like the Mechanical Engineering Association (MEA), American Society of Mechanical Engineers (ASME), Society of Automotive Engineers (SAE), American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE), and the BITS Aerospace Society (BAEROS). Our faculty is also engaged in cutting-edge research in Robotics, Energy Management, and Material Testing through well-equipped labs.

Join us and be part of the next generation of Mechanical Engineers shaping the future!



## **CAREER PATHWAYS**

#### **Job Roles**

- Design Engineer
- Production Engineer
- Quality Control Engineer
- Consultants
- Estimation Engineer
- Technology Specialist
- Mechatronics Engineer
- Aerospace Engineer
- Automotive Engineer

#### **Companies Hiring**

- Akzo Nobel
- The Armored Group
- Schindler Group
- Seimens
- Lucy Electric
- Al Shirawi
- Taurani Group
- Hydro Middle East
- Channeline International
- Fractal Systems
- Daikin McQuay

**Higher Studies:** Several graduates have gone abroad for doing their Masters program in Mechanical Engineering, Aerospace Engineering, Industrial Engineering, Automobile Engineering, Materials Science, Design Engineering, Robotics and Automation, Manufacturing Engineering, Mechatronics, Energy Management & Business Administration from globally recognized universities such as Stanford, Georgia Tech., Carnegie Mellon, ETH Zurich, Hong Kong University of Science & Technology, Purdue University, CU Boulder, University of Glasgow & IIMs in India.

## **B.E. MECHANICAL ENGINEERING**

#### Semester-wise pattern\*

I YEAR	First Semester Engineering Graphics Biology Laboratory General Biology Chemistry Laboratory General Chemistry Mathematics I Physics Laboratory Mechanics,Oscillations and Waves	<ul> <li>Second Semester</li> <li>Thermodynamics</li> <li>Technical Report Writing</li> <li>Computer Programming</li> <li>Electrical Sciences</li> <li>Mathematics II</li> <li>Probability and Statistics</li> <li>Workshop Practice</li> </ul>	<ul> <li>Automotive Vehicles</li> <li>Combustion</li> <li>Composite Materials a</li> <li>Computer Aided Manu</li> <li>Finite Element Method</li> <li>Flight Mechanics and</li> <li>Fuel Cell Science and</li> <li>Gas Dynamics</li> <li>Heating and Cooling of</li> <li>Mechanisms and Rob</li> </ul>
II YEAR	<ul> <li>Mathematics III</li> <li>Mechanics of Solids</li> <li>Fluid Mechanics</li> <li>Materials Science &amp; Engineering</li> <li>Applied Thermodynamics</li> <li>Humanities Electives</li> </ul>	<ul> <li>Environmental Studies</li> <li>Principles of Economics / Management</li> <li>Advanced Mechanics of Solids</li> <li>Manufacturing Processes</li> <li>Heat Transfer</li> <li>Mechanisms and Machines</li> <li>Humanities Electives</li> </ul>	<ul> <li>Mechatronics and Auto</li> <li>Material Characterizati</li> <li>Power Plant Engineeri</li> <li>Principles of Aerodyna</li> <li>Quality Control, Assura</li> <li>Refrigeration and Air C</li> <li>Renewable Energy</li> <li>Reverse Engineering a</li> <li>Rocket and Spacecraft</li> </ul>
	Summer Term: Prac	<ul> <li>Solar Thermal Process</li> <li>Total Product Integration</li> </ul>	
AR III YEAR	<ul> <li>Open / Humanities Electives</li> <li>Design of Machine Elements</li> <li>Advanced Manufacturing Processes</li> <li>Manufacturing Management</li> <li>Engines, Motors and Mobility</li> <li>Discipline Electives</li> </ul>	<ul> <li>Open / Humanities Electives</li> <li>Computer-Aided Design</li> <li>Vibrations and Control</li> <li>Engineering Optimization</li> <li>Prime Movers &amp; Fluid Machines</li> <li>Discipline Electives</li> </ul>	<ul> <li>Wind Energy</li> <li>Data Mining in Mechan</li> <li>Energy Storage Techn</li> <li>Introduction to Sports</li> <li>Aircraft Structures</li> <li>Energy Management</li> <li>Lean Manufacturing</li> <li>Supply Chain Manage</li> <li>Industry 4.0 in Manufa</li> </ul>
IV YEAR	<ul><li>Open Electives</li><li>Discipline Electives</li></ul>	<ul> <li>Practice School-II / Thesis or Thesis and Electives</li> </ul>	Computational Fluid D Discipline Core Course
* Thi	s is an operative pattern for the students a	Discipline Electives - 1	

\* This is an operative pattern for the students as approved by the Senate appointed committee, subject to change if the situation warrants

#### **Discipline Elective Courses**

Software Tools

SOLIDWORKS ANSYS MSC ADAMS

AutoCAD

MATLAB

CATIA

- Aircraft Propulsion
- Artificial Intelligence for Robotics
- and Design
  - nufacturing
- ods
- Control
- d Technology
- of Buildings
- botics
- tomation
- ation
- ring
- amics
- rance and Reliability
- Conditioning
- and Rapid Prototyping
- aft Propulsion
- ss Engineering
- tion Engineering
- anical Sciences
- nologies
- Engineering
- ement
- acturing
- Dynamics

ses - 48 Units (16 Courses) 12 Units (4 Courses) Humanities Electives - 8 Units (3 Courses) **Open Electives - 15 Units (5 Courses)** 

## **BACHELOR OF ENGINEERING** *in* **MECHANICAL** *with specialization in* **AEROSPACE**

The Mechanical Engineering program with specialization in Aerospace aims to expose the students to the fields of aerodynamics, propulsion, structures, and flight mechanics and controls for airborne vehicles and systems. The program is designed to cover the thrust areas such as Aerodynamics (low- and high-speed), Biofuels and Propulsion Systems, Aircraft Structures, light-weight Composite Materials, and Spacecraft Design. We aim to promote "a new scientific and technical culture", contributing to the development of a skilled, knowledgeable workforce in the field of aerospace technologies.

With hands-on training, through well-equipped industrystandard laboratory facilities and softwares, our students are prepared to take on real-world challenges. Our faculty is also engaged in cutting-edge research in several areas of mechanical and aerospace engineering.

Students can also be associated with the following professional organizations:

- American Society of Mechanical Engineers (ASME)
- American Society of Heating, Refrigeration, and Air
- Conditioning Engineers (ASHRAE)
- Society of Automotive Engineers (SAE)
- Mechanical Engineering Association (MEA)
- BITS Aerospace Society (BAEROS)



## **CAREER PATHWAYS**

#### **Job Roles**

- Aerospace Engineer
- Principal Engineer (Aerodynamics)
- Structural Engineer
- Design Engineer
- Production Engineer
- Quality Control Engineer
- Consultants
- Estimation Engineer
- Technology Specialist
- Mechatronics Engineer
- Automotive Engineer

#### **Job Opportunities In**

- Military Logistics Services
- Aircraft Maintenance Companies
- Airline Companies
- Aircraft Manufacturing
- Aerotech Companies
- Space Labs
- Space Tech Start Ups
- Space Space Organizations
- Defence Tech Companies

**Higher Studies:** Numerous Opportunities for Masters and PhD in this field in leading universities such as Stanford, Georgia Tech., Carnegie Mellon, ETH Zurich, Hong Kong University of Science & Technology, Purdue University, CU Boulder, University of Glasgow & IIMs in India.

## **B.E. MECHANICAL** *with specialization in* AEROSPACE

#### Semester-wise pattern\*

committee, subject to change if the situation warrants

	First Semester	Second Semester	Disc	
I YEAR	<ul> <li>Engineering Mechanics</li> <li>Biology Laboratory</li> <li>General Biology</li> <li>Chemistry Laboratory</li> <li>General Chemistry</li> <li>Mathematics I</li> <li>Physics Laboratory</li> <li>Mechanics, Oscillations and Waves</li> </ul>	<ul> <li>Thermodynamics</li> <li>Technical Report Writing</li> <li>Computer Programming</li> <li>Electrical Sciences</li> <li>Mathematics II</li> <li>Probability and Statistics</li> <li>Workshop Practice</li> </ul>	<ul> <li>Prir</li> <li>Airci</li> <li>Flig</li> <li>Intro</li> <li>Airci</li> <li>Gas</li> <li>OR</li> <li>Roci</li> <li>Gor</li> <li>Spatial</li> <li>Softv</li> <li>Auto</li> <li>CAT</li> <li>SOI</li> <li>ANS</li> <li>MS0</li> </ul>	
II YEAR	<ul> <li>Mathematics III</li> <li>Mechanics of Solids</li> <li>Fluid Mechanics</li> <li>Material Science &amp; Engineering</li> <li>Applied Thermodynamics</li> <li>Humanities Electives</li> </ul>	<ul> <li>Environmental Studies</li> <li>Principles of Economics / Management</li> <li>Advanced Mechanics of Solids</li> <li>Manufacturing Processes</li> <li>Heat Transfer</li> <li>Mechanisms and Machines</li> <li>Humanities Electives</li> </ul>		
Summer Term: Practice School I				
III YEAR	<ul> <li>Open/Humanities Electives</li> <li>Design of Machine Elements</li> <li>Advanced Manufacturing Processes</li> <li>Manufacturing Management</li> <li>Engines, Motors &amp; Mobility</li> <li>Discipline Electives</li> </ul>	<ul> <li>Open/Humanities Electives</li> <li>Computer-Aided Design</li> <li>Vibrations and Control</li> <li>Engineering Optimization</li> <li>Prime Movers &amp; Fluid Machines</li> <li>Discipline Electives</li> </ul>	MA Rica Disci Disci Huma Oper	
			Ope	

#### **Discipline Elective Courses**

- nciples of Aerodynamics
- craft Propulsion
- ght Mechanics and Control
- roduction to Flight
- craft Structures
- s Dynamics
- ocket and Spacecraft Propulsion
- mposite Materials and Design
- acecraft Systems

#### ware Tools

- toCAD
- AIT
- LIDWORKS
- ISYS
- C
- AMS
- TLAB
- ardo WAVE

cipline Core Courses - 48 units (16 courses) cipline Electives - 12 units (4 courses) nanities Electives - 8 units (3 courses) n Electives - 15 units (5 courses)

## **M.Sc. PHYSICS** *with specialization in* **SPACE SCIENCE & TECHNOLOGY**

The degree program in Space Science and Technology, opens up a world of possibilities to student aspiring for exciting career in the world of unknown realms. It provides students with a solid foundation in scientific principles and technological advancements related to space exploration. The UAE's ambitious space programs, such as the Mars Mission and satellite launches is bound to create numerous job opportunities in this domain. By pursuing a degree in Space Science and Technology, students can position themselves for exciting careers in areas such as space engineering, astrophysics, satellite technology and space research.

**Higher Studies:** Numerous opportunities for Master & PhD in this field in leading institutes/universities in USA, UK, Germany, Australia, India, China, Japan etc



## **CAREER PATHWAYS**

#### **Job Roles**

- Space Data Analyst
- GIS Analyst
- Satellite/Spacecraft Technology
   Space Research Scientist
- Atmospheric Scientist
- Astronaut

#### **Job Opportunities In**

- Satellite Manufacturing
- Satellite Craft Manufacturing
- Space Research Organization
- Space Exploration Centre
- Aerospace Industry
- Satellite Communication Companies
- Defense Reconnaissance Centers

## M.Sc. PHYSICS *with specialization in* SPACE SCIENCE & TECHNOLOGY

#### Semester-wise pattern\*

2

	I YEAR	First Semester <ul> <li>Biology Laboratory</li> <li>General Biology</li> <li>Chemistry Laboratory</li> <li>General Chemistry</li> <li>Mathematics I</li> <li>Physics Laboratory</li> <li>Mechanics, Oscillations and Waves</li> <li>Engineering Graphics</li> </ul>	<ul> <li>Second Semester</li> <li>Mathematics II</li> <li>Workshop Practice</li> <li>Computer Programming</li> <li>Electrical Sciences</li> <li>Technical Report Writing</li> <li>Probability and Statistics</li> <li>Thermodynamics</li> </ul>		
	II YEAR	<ul> <li>Mathematics III</li> <li>Humanities Electives</li> <li>Classical Mechanics</li> <li>Electromagnetic Theory I</li> <li>Optics</li> <li>Electricity, Magnetism &amp; Optics Laboratory</li> <li>Environmental Studies</li> </ul>	<ul> <li>Principles of Economics Or Principles of Management</li> <li>Humanities Electives</li> <li>Electromagnetic Theory II</li> <li>Quantum Mechanics I</li> <li>Mathematical Methods of Physics</li> <li>Modern Physics Laboratory</li> </ul>		
		Summer Term: Practice School I			
III YEAR		<ul> <li>Open/Humanities Electives</li> <li>Quantum Mechanics II</li> <li>Statistical Mechanics</li> <li>Computational Physics</li> <li>Discipline Electives</li> </ul>	<ul> <li>Open/Humanities Electives</li> <li>Solid State Physics</li> <li>Atomic &amp; Molecular Physics</li> <li>Nuclear &amp; Particle Physics</li> <li>Advanced Physics Laboratory</li> <li>Discipline Electives</li> </ul>		
	V YEAR	<ul><li>Open Electives</li><li>Discipline Electives</li></ul>	<ul> <li>Practice School-II / Thesis or Thesis and Electives</li> </ul>		

\* This is an operative pattern for the students as approved by the Senate appointed committee, subject to change if the situation warrants

#### **Discipline Elective Courses**

- Space physics
- Spacecraft systems
- Satellite Communication
- Rocket and Spacecraft Propulsion
- Introduction to Astronomy and Astrophysics
- Scientific Computing and Data Analysis
- Remote Sensing and Image processing
- Introduction to Radio Astronomy
- General Theory of Relativity and Cosmology
- Space Science Instrumentation
- Cosmology

Discipline Core - 45 Units (15 Courses) Discipline Electives - 15 Units (4 Courses) Humanities Electives - 8 Units ( 3 Courses) Open Electives - 15 Units ( 5 Courses)

BITS Pilani, Dubai Campus 37 Prospectus 2024

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## **PRACTICE SCHOOL (INTERNSHIP)**

### BITS is a pioneer in the field of university industry collaboration and its innovative, bold and radical internship program called the Practice School has no parallel.

We are a leader in the university-industry partnerships, setting the standard with our approach that presents the students a platform to transfer their theoretical knowledge to practical settings. The Practice School (PS) program is indeed a unique opportunity for students to bridge the gap between the classroom and the real world. Over the course of 7.5 months, students work as employees of real organizations, applying their knowledge and skills to real-life challenges under the supervision of faculty and professional experts.

The PS program includes two components: PS I, a 2-month summer internship after the second year, and PS II, a 51/2 - month semester-long internship in the final year. During this time, students will participate in daily activities, work on assigned projects, and be evaluated on their interdisciplinary approach, decision-making skills, leadership, teamwork, and more.

The PS program has opened the door for fruitful collaborations between faculty and industry. providing students with an unparalleled educational experience that prepares them for success in the professional world.

Over 30% of our students get job offers from the companies where they complete their Practice School commitment.

### **COLLABORATION WITH OVER 300 COMPANIES** FOR INTERNSHIP

- Emerson Automation Solutions
- PwC Middle Fast
- Atkins
- Zutari
- Lamprell
- Siemens
- ESBI
- Reckitt Benckiser (Arabia) FZE
- Thyssen Krup
- Schindler
- Schneider Electric
- Dubai Islamic Bank
- Sharaf Retail
- SEMEA Electrical & Automation FZE

- The Emirates Group
- Al Shirawi
- MSD DIC
- Bosch
- Aster Hospital Group
- Star Cement
- Flv Dubai
  - Carrier Middle Fast Limited
- Landmark Group
- **GRUNDFOS Gulf Distribution FZE**
- Lucy Switchgear FZE
- **TUV Rheinland**
- Organon Casamia
- - Agar Landscape LLC

- Daikins
- - Petrofac
  - Redinaton

  - Voltas
  - Savills LLC
  - Lloyd's Register EMEA
  - **Emirates Hospital Group**
- Wipro
- **Civil Matrix Contracting LLC**
- Al-Bawadi and many more

### EMPLOYERS SPEAK

"When it comes to recruitment, we always look for excellence. That is why we partnered with BITS Pilani, Dubai as their students are professional, full of hunger and have all the drive that we look for in new recruits".

#### Jide Ore

Talent Acquisition Manager, Emerson Middle East & Africa

#### "Our experience with BITS Pilani has been very rewarding and satisfying as an organisation, we see the quality of talent to be sustainable and strategic investment to us when we host their internship program".

Rainier Tayao HR Director, Schindler Group, U.A.E.

"The students have positively added to the projects that we are working on by taking active development, testing and QA roles. They exhibited good sense of teamwork. academic acumen and were eager to learn and assimilate new technologies".

#### Satish Kumar Menon

Chief Operations Manager, ESRI Global Inc, Sharjah, U.A.E.

Prospectus 2024 38 **BITS Pilani**, Dubai Campus

- - Protiviti Member Firm
  - Middle Fast
  - TUV Nord
  - Weidmueller
  - Sharaf DG.

## **EXTRA CURRICULAR ACTIVITIES**



Extracurricular Activities at BPDC provide a refreshing symphony to the students involved in the rigors of academic activities. We understand the importance of a comprehensive education and hence we provide a dynamic environment with ample opportunities for students to pursue their interests and showcase their talents through a diverse range of extra-curricular and co-curricular activities. Whether you are looking to develop your social skills, embrace your cultural heritage, or strengthen your interpersonal relationships, we have something for everyone.

#### **INTER-UNIVERSITY EVENTS & FESTS**

Some of our popular inter-university events include

- JASHN The Cultural Extravaganza
- BITS Sports Festival
- BITS Tech Fest

#### **STUDENT CLUBS**

The rich mosaic of student life is enhanced by the student clubs. Student clubs add a vibrant and diverse dimension to campus life. With active clubs focused on dance, astronomy, music, art, sports, photography, drama, public speaking, literary, wall street, quiz, fashion design, and social and environmental issues, there is something for everyone.

The aim of each club is to enrich the social and cultural experience on campus, offering students a platform to showcase their talents, pursue their interests, and make meaningful connections. Join the community and discover how student clubs can bring new energy and excitement to your college experience.

#### **PROFESSIONAL ASSOCIATIONS**

Experience the best of both worlds with opportunities to engage with professional organizations and academic disciplines. Join a community of like-minded individuals and gain valuable insights into your field. Our student chapters offer a unique platform to connect with industry leaders, build your professional network, and stay ahead of the curve in your academic pursuits. Take your education to the next level and explore the limitless possibilities of professional growth and development.

We are one of the few institutions in the Middle East which have student chapters of renowned professional bodies, such as IEEE, AIChE, ASHRAE, ASME, SAE, ACM, and SWE. A wealth of resources and opportunities, are provided to the students including distinguished lectures, conferences and seminars, international competitions and other activities throughout the semester.

Student Clubs and Professional Bodies play an active role in various campus events that provide an opportunity for all students to build lifelong memories.

## **INTERNATIONAL STUDENT SERVICES**

### **STUDENT VISA**

We have a dedicated International Student Services Division which facilitates the student visa process for non-residents of the UAE through Dubai International Academic City (DIAC) as required by BPDC and the Government of the UAE.

This facility is also extended to UAE resident students who require BPDC to sponsor their visa.

#### **INSURANCE**

Dubai's Health Insurance Law mandates that all residents must maintain a level of health insurance that either meets or exceeds the minimum benefits outlined by the Dubai Health Authority (DHA). All students are required to have a valid medical insurance policy covered in the UAE, which includes direct billing. This mandatory medical insurance ensures that every student has access to healthcare services. Possessing valid medical insurance, students can feel assured about receiving the necessary medical care. To facilitate this process, we have partnered with a leading insurance company to provide comprehensive medical insurance coverage for our students. Students who are already insured must furnish evidence of coverage that is valid in the UAE.

### **ON-CAMPUS ACCOMMODATION**

BITSians experience a well-rounded student life, complete with comfortable and convenient on campus housing options. Our hostel facilities provide students with everything they need to thrive in a supportive and nurturing environment.

BPDC offers separate hostel facilities for male and female students. Living on campus is mandatory for students who are non-residents of the UAE and are on University visa.

Our hostels are designed to provide a safe, secure, and comfortable living environment. Each hostel building is staffed with a resident warden, who is a BPDC staff and other essential personnel, ensuring the well-being of our students.

The rooms are fully air-conditioned and single occupancy, offering students a private and comfortable space to study and rest. Each room is equipped with a bed, cupboard, and study table. The hostels provide Wi-Fi access, recreational rooms, a laundromat, a gymnasium, first-aid facilities, and sports equipment.













#### **DINING HALLS**

The caterers provide quality meals daily which includes breakfast, lunch, snack and dinner complying with the health and safety regulation as stipulated for food preparation and distribution.Students choose the menu items from multiple diet options that cater to the diverse dietary needs of our students including strictly vegetarian meals.

Students enjoy special menu during festivals and special events. During the month of Ramadan, kitchen staff ensures that special fasting meals are available for those who need it.

The hostel fee includes all the meals and utilities.

#### **MAHA MALL**

The one-stop shop for exclusive BPDC merchandise.

From mugs to sweatshirts, take home a piece of the BPDC spirit.



### **CAFETERIA**

Coffee, tea, mouth-watering snacks or a meal...our cafeteria serves it all! Visitors and students have access to our cafeteria food and drinks throughout the day.









### **MINI MART**

The campus Mini Mart serves all students, staff and visitors during regular working hours. One can easily purchase many items including food and stationery items.

Strategically placed vending machines offer snacks and beverages throughout the campus, ensuring that everyone has convenient access to refreshments at all times.

With a variety of dining options available, we strive to make it easy for students and faculty to take breaks, grab a bite, and recharge for the rest of the day. The campus has it all to make sure you have what you need to stay focused and productive.

## **STUDENT WELL-BEING**



#### **COUNSELING SERVICES**

BPDC is mindful of the effects of separation from family, loneliness, stress, etc. that students may experience during their transition into the university. We understand the importance of mental health and well-being.

A professional Counselor is available on campus for students and staff. Those requiring support and guidance can approach the Counselor who is available Monday through Friday during the working hours on campus and through email and phone at other times.

The counseling sessions are completely confidential, ensuring that students can feel comfortable and safe when discussing their concerns. Our goal is to provide students with the support they need to succeed both academically and personally, and our on-campus counseling services play an important role in achieving this.



### **HEALTH SERVICES**

Student's health and safety is of utmost importance to all of us. We offer 24 hours on campus paramedical facilities to all students.

There is a clinic on campus and a doctor is available for consultation during stipulated hours. A male nurse stays on campus and is available for first aid and emergency care. A female nurse visits the campus on Mondays.

In the event of a serious emergency, students are promptly transported to the hospital for further treatment.

#### SAFE AND INCLUSIVE ENVIRONMENT

BITS Pilani Dubai Campus has a zero-tolerance for violence, drug abuse, ragging, sexual harassment, and any other form of unacceptable behavior. Any act of misconduct will result in disciplinary action, up to and including suspension or expulsion. University is committed to fostering a safe and inclusive learning environment for all students.



#### **FACULTY ADVISORS**

Our goal is to provide a personalized and supportive academic experience, equipping students with the tools they need to succeed. Every student at the time of admission is assigned a faculty member who will be the Advisor for the entire program of study.

Faculty Advisors at BPDC provide the support to students in reaching their full potential. Advisors work closely with students to help them overcome any educational and vocational challenges. Through regular check-ins and discussions, students receive guidance on their performance, reducing stress and maximizing opportunities for academic success.

In addition to one-on-one advising, students also have the opportunity to meet with their course faculty during designated consultation hours. Here, they can clarify any doubts and receive help in their studies.

## **CAMPUS FACILITIES**

#### LIBRARY

Whether you are an early bird or a night owl, BPDC's library is designed to accommodate your needs, providing a supportive and inspiring environment for learning and growth.

BPDC's library is a modern and welcoming space that provides students with the resources they need to succeed. Spread over two floors, the library offers a variety of study areas, including reading halls, reference sections, stacking areas, discussion rooms, and individual study carrels, as well as a faculty lounge. Additionally, students have access to a digital library and internet browsing center.

The library is open seven days a week, with hours from 7:30 am to 10:00 pm during the week. During crucial times, such as comprehensive exams and tests, the library extends its hours, staying open until midnight to support students in their academic pursuits.

### **CENTER OF HIGHER EDUCATION**



The Center for Higher Education at BITS Pilani, Dubai Campus was founded with a vision to provide comprehensive advising, knowledge, and skills essential for students to successfully pursue their international education aspirations. Established in partnership with Scoreplus Education, an esteemed collaborator of Princeton Review and a renowned entity in test preparation and higher education counseling, the Center stands as a testament to our commitment to academic excellence.

Our primary objective is to equip our students with the necessary tools and insights to make well-informed decisions regarding their higher education pathways. Serving as a focal point for various activities, the Center offers:

- Personalized Higher Education Counseling through both one-on-one consultations and group sessions
- Expert guidance on graduate program applications and admissions processes
- Preparation sessions for GMAT/GRE examinations
- Informative sessions tailored to specific universities
- Opportunities to engage with representatives from colleges through organized fairs

### LABORATORIES

#### We have well-equipped laboratories of international standards for different lab-based courses.

- Advanced Molecular Biology Lab
- Analog Electronics Lab
- **Biology Lab**
- Chemical Engineering Lab I & II
- Chemistry Lab
- Communication Lab
- Computer Aided Design Lab
- Computer Programming Lab
- Concrete Lab
- Creative Lab
- **Digital Design Lab**
- Electrical Machines Lab
- Engineering Graphics Lab
- Environmental Lab
- Fluid Mechanics Lab
- Genetic Engineering Lab
- Heat Transfer Lab
- Industrial Microbiology & Bioprocess Engineering
- Lab Instrumental Methods of Analysis Lab
- Instrumentation Lab
- Intelligent Computing Lab
- Mechatronics & Robotics Lab
- MEMS Lab
- Materials Testing Lab
- Microbiology Lab
- Microprocessor Programming & Interfacing Lab
- Petroleum Lab
- Physics Lab
- Power Electronics Lab
- Prime Movers and Fluid Machinery Lab
- Process Control Lab
- Production Technique I & II Lab
- Signal and Simulation Lab
- Software Systems Lab
- Soil Mechanics and Foundation Engineering Lab
- Surveying Lab
- Transportation Engineering Lab
- Workshop

## **FACILITIES & SUPPORT**



#### IT INFRASTRUCTURE FACILITIES AND SUPPORT SERVICES

Our campus is equipped with the latest in networking technology, providing students with both wired and wireless connectivity to meet their computing needs. We have a Cisco-sponsored networking research lab and a state-of-the-art data center, complete with servers, storage, and the latest Cisco network components.

Our Cisco Telepresence system, with a classroom capacity of 160 seats, allows students to participate in online classroom sessions from anywhere.

We provide students with smart print solutions, Microsoft Office 365 facilities, and a variety of software tools, including AUTOCAD, MATLAB, CATIA, SYNOPSYS, ANSYS, SPSS, ASPEN and more. Join us and experience a world-class education, equipped with the technology and resources you need to succeed.

#### **VIRTUAL STUDY SPACE**

With the ever-changing landscape of education, it is important to stay ahead of the curve and provide students with the tools they need to succeed. Hence we have adopted a range of online platforms to continue education uninterrupted, even in the face of pandemic situations.

Our institution utilizes platforms such as Impartus, Webex, Google Meet, Zoom, Google Classroom, and Microsoft Teams to keep students engaged and learning. We have also incorporated online evaluation platforms, including CodeTantra, Socrative, and WebEx, for conducting exams with ease. And for laboratory and lab comprehensive exams, we use virtual lab platforms like Platify and Cisco Webex hands-on Lab.



#### **TELEPRESENCE ROOM**



#### **CREATIVE LAB**

BPDC's Creative Lab is a haven for our enterprise-driven students! This on-campus facility is open 24X7 all throughout the year!! Students past and present test their ideas, create prototypes, work on their projects etc. at the Creative Lab.

#### **INCUBATION CENTRE**

BPDC has a vibrant entrepreneurial ecosystem that encourages innovation and start-ups. This entrepreneurial ecosystem took a further leap forward by joining the Dubai Business Incubator Network (DBIN) through partnership with Dubai SME as a certified business incubator.

The setting up of the Incubation Centre with this partnership has transformed the university into an entrepreneurial hub by supporting students with access to mentors, business experts and legal advisors, thereby creating new opportunities for the student entrepreneurs to make significant contributions to the society and intellectual capital of the country.



### **SPORTS AND FITNESS**

Our commitment to providing a well-rounded student experience extends to our sports facilities, giving students the opportunity to stay healthy and active. Whether you prefer indoor or outdoor sports, our facilities have you covered.

BPDC offers a wide range of indoor and outdoor sports facilities, Our indoor sports complex includes facilities for badminton, table tennis, carrom, chess, etc

For those who look for engaging in outdoor sports, we offer tennis, basketball, volleyball, throwball, football, handball, and cricket practice nets. We also have a turf cricket ground, a grass football field, and a professional synthetic track for athletics. In addition to these facilities, BPDC provides a separate gymnasium for boys and girls.







#### **TRANSPORT SERVICES**

BPDC provides transportation services on a semester basis within Dubai, as well as to Sharjah and Ajman. The pickup and drop locations within each emirate are evaluated and approved by our transport department to ensure feasibility.

Hostel students are also given the added convenience of a free shuttle service during the weekends, providing them with easy access to the nearest metro station or local mall. Additionally, students participating in our Practice School program who are staying in the hostel are provided with free transportation to their designated workstation.



## **CAREER SERVICES**



### **EMPLOYMENT & HIGHER EDUCATION SUPPORT**

The Career Services at BITS Pilani, Dubai Campus empowers students to explore and pursue meaning and fulfilling career paths by providing comprehensive **Career Services**.

Our Campus Placement Program (CPP) ensures students abundant opportunities to secure their ideal job. All the key activities of the program is designed to empower students with the skills and confidence needed to make well-informed career decisions.

Some of the these activities are:

- Career Counselling
- Soft skill Trainings
- Domain Expert Sessions
- Mentorship Programs

The division coordinates a multitude of placement initiatives, encompassing both on-campus and off-campus Career Fairs, fostering connections with esteemed local and international corporations. Our campus is furnished with all requisite facilities for companies to seamlessly conduct pre-placement presentations, interviews, and screening tests.

Through the **Center for Higher Education**, Career services team provides essential guidance and support for students aspiring for Higher Education. It serves as a central hub for various activities including Higher Education Counselling, College Fairs, Admission Guidance, on-campus GRE and GMAT Preparation sessions.



### EARN WHILE YOU LEARN

At BPDC, we prioritize the transformative impact of hands-on experience and recognize the significant value of an earningsbased learning approach. Our institution proudly extends the opportunity for students in their junior, and senior years to engage in the prestigious Earn-While-You-Learn Scheme.

This initiative empowers students to assume roles as Professional Assistants, actively contributing to laboratory work, academic initiatives, and administrative activities. They actively contribute to various areas, including software development, website creation and maintenance, feedback monitoring, and more Participants receive a well-deserved honorarium and a certificate of recognition.

Embark on a journey of gaining invaluable hands-on experience, honing your skills, and making meaningful contributions to the academic landscape with BPDC. Several Graduates have opted for further studies and have completed or pursuing Masters and Ph.D. from reputed universities across the world. Some of the reputed Universities are:

- Harvard University, U.S.A.
- IIM Calcutta, India
- IIM Bangalore, India
- Illinois Institute of Technology,U.S.A.
- McMaster University, Canada
- MIT Sloan School of Management, U.S.A.
- New Jersey Institute of Technology,U.S.A.
- Rutgers-State University of NewJersey, U.S.A.
- Stanford University, U.S.A.
- Texas A&M University, U.S.A.
- University at Buffalo,NewYork,U.S.A.
- University of California,U.S.A.
- University of Cambridge,U.K.
- University of Leicester, U.K
- University of Manchester, U.K
- University of Pennsylvania, U.S.A.
- University of Texas, Dallas&Austin, U.S.A.
- University of Toronto, Canada and many more...



## **REPUTED COMPANIES HIRING OUR STUDENTS**

- ABB,U.A.E.
- Accenture Middle East, U.A.E.
- BAIN & Company, U.A.E.
- Bosch,U.A.E.
- Careem,U.A.E.
- Dell International Services, India
- DNVGL,U.A.E.
- Dubizzle,U.A.E.
- EMERSON,U.A.E.
- Emirates Industrial Gases Co.,U.A.E.
- Emirates Sky Cargo, U.A.E.
- Ernst & Young India
- ESRI,Sharjah,U.A.E.
- ETAMELCO(Mitsubishi), U.A.E.
- Etisalat,U.A.E.
- Fly Dubai,U.A.E.
- Halliburton,K.S.A.
- Honeywell Middle East, U.A.E.
- HSBC,India
- IBM,India
- JRay Mc Dermott, Middle East, U.A.E.
- Johnson Controls, U.A.E.
- L&T,U.A.E.
- Lucy Switchgear, U.A.E.
- Maersk,U.A.E.
- Mc Kinsey India

- Microsoft,U.S.A.
- Nestle,U.A.E.
- Oracle,U.S.A.
- Panasonic–Middle East,U.A.E.
- Petrofac International, U.A.E.
- Procter & Gamble Gulf FZE, U.A.E.
- Protiviti,U.A.E.
- PWC, U.A.E.
- Qualcomm,U.A.E.
- Reckitt Benckiser, U.A.E
- Redington Gulf
- RTA Dubai, U.A.E.
- Schindler, U.A.E.
- Schneider Electric, U.A.E.
- Siemens LLC,U.A.E.
- Sony Ericsson,NC,U.S.A.
- Standard Chartered Bank, U.A.E.
- Talabat, U.A.E
- Tanfeeth-Emirates NBD Group Company, U.A.E.
- Tata Consultancy Services, India
- Tetra pak,U.A.E.
- W.S.Atkins,U.A.E.
- Wipro,India
- Worley Parsons, U.A.E.
- Zomato-U.A.E and many more...

## **FLEXIBILITIES IN FIRST DEGREE PROGRAMME**

### **✓ DUAL DEGREE**

Our flexible educational structure allows students to earn two degrees in a reasonable period of time, giving you a competitive edge in your chosen fields. All admitted students have the opportunity to participate in this exciting programme, which is based on their performance during the first year of study. By taking an additional 2-3 semester and paying the additional semester's fee, they will receive two degrees in their chosen disciplines, opening up a world of possibilities for their future.

Imagine the potential you will unlock by earning a degree in Chemical Engineering & mastering Computer Science, both at the same time!

### ✓ MINOR PROGRAMMES

Expand your education with BPDC's Minor Programme. Choose an area of your interest from the list below and graduate with a minor in:

- Data Science
- Aeronatics

- Entrepreneurship
- Materials Science and Engineering
- Robotics and Automation
   Finance
- Philosophy, Economics and Politics
   Computing and Intelligence

You can enroll at the end of your first year and use your open elective slots to fulfill the Minor program requirements.

## ✓ ADMISSION WITH ADVANCED STANDING

BPDC offers "Admission with Advanced Standing" for students with preparation higher than the minimum entrance requirement having studied one year or two of the undergraduate degree program in some other recognized university. This allows them to receive credit for coursework completed at the previous university with good academic performance matching with the course requirements of the program to which they seek admission. Thus, the students avoid repeating classes, and their hard work and efforts elsewhere are recognized.

Eligibility criteria for admission with advanced standing is available in the Admission Bulletin

### ✓ ADMISSION IN BOTH SEMESTERS

Join the elite cohort of students at BPDC with flexible admission intake periods. Start in either semester!

If you missed the deadline for September intake, then our second-semester admissions for February intake offer a chance to become a BITSian. Benefit from our 4-year, well-rounded program including Practice School and a diverse student body

### ✓ CASUAL STUDENT PROGRAMME

BITS Pilani Dubai Campus is proud to offer a unique opportunity for students and community members to deepen their expertise and stay ahead of the curve by registering as casual students. With a wide range of courses available for auditing, you will have access to top-notch faculty, state-of-theart resources, and engaging learning experiences that will take your skills and knowledge to new heights.

### ✓ TRANSFER BETWEEN DISCIPLINES

BPDC allows you to transfer to a different discipline that aligns with your goals and interests by applying at the end of first year.Exceptionally meritorious students in a limited number of cases can expect to compete for transfer to another program based on the availability of seats. The students are given credit for what they have studied till then towards the requirements of the program to which they seek the transfer. This allows you to take control of your education and reach your full potential.

## **READY TO APPLY?**

### **APPLICATION PROCEDURE**

Here is a step-by-step guide for the online application process.

- Visit the BITS Pilani Dubai Campus Admission page: www.bits-pilani.ac.in/dubai or scan the QR code given below to access the online admission portal.
- Access the application form by clicking on "Apply Online"
- Fill in the form with your personal and academic details, program preference & few additional details.
- Pay application fee of AED 220
- Upload a copy of your passport, 10<sup>th</sup> and 12<sup>th</sup> grade marksheets.



The estimated time to complete the online application process is approximately 20 minutes.

Note: The admission process may vary depending on the program and the specific requirements of BITS Pilani, Dubai Campus.

### **ELIGIBILITY CRITERIA**

For admission to all first degree programmes, candidates must have passed the requisite qualifying examination, which is the General Secondary Education Certificate Examination of Ministry of Education, U.A.E. or All India Senior School Certificate Examination of the Central Board of Secondary Education (CBSE) or A Level from Cambridge International examinations / Edexcel or IB Diploma or its equivalent from any recognized State, National or International board.

- The candidates must have obtained a minimum 60% overall aggregate of marks in the qualifying examination and a minimum aggregate of 60% in Physics, Mathematics and Chemistry / Biology / Computer Science or any other vocational subjects with at least 50% marks in each subject. However, for admission to B.E. Biotechnology, candidates without Mathematics in Grade 12 will also be accepted with a minimum aggregate of 60% in Physics, Biology and Chemistry or any other vocational subject with at least 50% marks in each subject.
- Candidates opting for a program in Biotechnology who have not taken Mathematics and Chemistry in the high school (Grade 12 or equivalent) will be required to complete bridging courses in Mathematics and Chemistry in the first semester. Candidates opting for any programme, who have not taken Chemistry in higher secondary curricula will be required to complete bridging course in Chemistry in their first semester.
- If instead of marks any letter grades or GPA are awarded (or any other system of evaluation), their equivalences in marks will be decided by the Admissions Committee. If a Candidate has secured less than 50% marks in any one of these subjects Physics, Mathematics /Biology, but has passed in the subjects and meets the aggregate criteria mentioned above, he/she may be considered for provisional admission. The admission will be confirmed only upon the successful completion of a foundation course in that subject with a minimum grade of " C ", offered by the university preferably before the commencement of the first semester.
- English is the medium of instruction and a good proficiency in English is essential for admission. Hence, candidates who have completed their qualifying examination from a Non-English medium school must have a TOEFL Score of 500 in paper based test or 61 in internet based test or have an IELTS Score of 6. If required, they may also be assessed by the Admission committee for English comprehension.

## **FEE STRUCTURE**

### FEE STRUCTURE FOR ACADEMIC YEAR 2024-25 FIRST DEGREE (B.E.PROGRAMMES)

The normal duration of the program is 4 years (8 Semesters) First Semester: September - January Second Semester: February - June

PARTICULARS	AMOUNT
A. One-time Fee (payable at the time of Admission)	
Application Fee**	AED 220
Admission Fee*	AED 2,000
Activity Fee*	AED 1,200
Caution Deposit <sup>s</sup>	AED 5,000
B. Tuition Fees	
Tuition Fee*(payable in 2 installments)	AED 25,650 per semester
Practice School I (PS I) Fee*	AED 5,750
(One-time fee payable after second year for the summer term)*	
C.Visa and Insurance Fee (For students availing Visa/Insurance)	
Visa Fee (For Students on Visa provided by the institute)	
Fresh Visa Fee**	AED 2,900
Visa Renewal Fee**	AED 2,150 per annum
Medical Insurance Fee*	AED 2,700 per annum
(Current prevailing Visa & Insurance Fee, subject to change)	
D. Hostel Fee (For students availing Hostel)	
Hostel Fee***	AED 15,000 per semester
Facility Fee*	AED 850 per annum
Summer Term (if availing) ***	AED 5,200 per term
Hostel Caution Deposit <sup>®</sup>	AED 2,000
*Laundry charges and Service charge for using refrigerator in room are additional	
E. Transport Fee** (For Day Scholars availing Institute Transport)	
For Dubai	AED 2,500 per semester
For Sharjah & Ajman	AED 2,800 per semester
(Current prevailing Transport Fee, subject to change)	

Note: A fee of AED 4000 per course plus VAT is applicable for casual students registering for any course on auditonly during any semester apart from a one-time admission fee. \*VAT of 5% is applicable on this fee;\*\*VAT of 5% is included in this fee;\*\*\*VAT of 5% will be charged on the food cost of this fee. \$ Refundable on graduation or on leaving the institute, after due adjustment for damages, breakages caused by the student, if any.

## FINANCIAL ASSISTANCE

Achieve your dreams with ease, thanks to BITS Pilani Dubai Campus' student loan options. Our University has teamed up with leading financial institutions, including SBI, ICICI, HDFC Credila, Axis Bank in India, and Emirates NBD in UAE, to provide comprehensive student loans.

Cover the full cost of your education and most of your living expenses with competitive interest rates and flexible repayment options. Repay your loan after graduation with some Indian banks.

#### 0% INTEREST FREE INSTALLMENT PLAN FOR FEE PAYMENT BY



#### **ADDITIONAL ADVANTAGES:**

- 1. Attractive Tax benefits (Banks in India)
- 2. Easy, Convenient & Flexible
- 3. Cost of education + Living expenses taken care of
- 4. Repayment period of 10-15 years

## **IMPORTANT DATES**

#### FOR FIRST DEGREE ADMISSION 2024-25

EVENT	First Semester	Second Semester
Last Date for receipt of Application	25 June 2024	16 December 2024
Finalization of admission list	28 June 2024	20 December 2024
Reporting for Admission	27 August 2024	30 January 2025
Orientation	27 Aug - 30 Aug 2024	30-31 January 2025
Registration	30 August 2024	31 January 2025
Classwork begins	2 September 2024	3 February 2025

Applications received after the last date will be considered as 'Late Applications' and will be accepted for admissions, subject to merit and availability of seats.

## **SCHOLARSHIPS & CONCESSIONS**

#### **MERIT SCHOLARSHIPS**

#### **1.1 Board Toppers**

Students who secure the top position in their grade 12 exams in their respective school board, (Ministry of Education, UAE, CBSE India, or any other State, National, or International boards) are eligible for a **50%** scholarship on their first-year tuition fee. To receive this scholarship, candidates must have a minimum overall aggregate of 90% or equivalent in their qualifying exam.

#### **1.2 UAE School Topper**

Candidates who have secured one of the top two positions in the 12th Grade examination in their respective schools are given a merit scholarship of **50%** of the first year tuition fee. This scholarship is limited to students studying in the U.A.E. Schools only and the overall aggregate of the candidate must be a minimum of **90%** or equivalent in the qualifying exam to avail the scholarship.

#### **1.3 Excellence in the Qualifying Examination**

Receive a merit scholarship & hostel concession at BITS Pilani Dubai Campus based on your school leaving qualifying exam as given below:

Qualifying Examination overall aggregate	Scholarship on I -Year Tuition Fee	Hostel Concession For 4 Years
95% & above	40%	25%
90% to 94.9%	25%	25%
80% to 89.9%	15%	25%
70 % to 79.9%	10%	25%

#### 1.4 Merit in BITSAT (BITS Admission Test)

#### Tuition fee scholarship:

Earn a merit scholarship for your first year tution fee & hostel concession with a BITSAT score as given below:

SI.NO	BITSAT Score	Scholarship on 1 <sup>st</sup> year tuition fee	Hostel Concession For 4 Years
1	>260	75% of Tuition Fee*	25%
2	216 - 259	50% of Tuition Fee*	25%
3	175 - 215	25% of Tuition Fee	25%
4	150 - 174	-	25%

This scholarship only applies to the first-year tuition fees and students will be eligible for the merit scholarships in subsequent semesters as mentioned under 1.5 below.

\*Note: Students who receive this scholarship will not be eligible for any other scholarship or concession in the first year.

#### BITSAT is not needed for admission to BITS PILANI DUBAI CAMPUS

#### 1.5 Merit Scholarship for Continuing Students:

Students with a CGPA of 8.0 or above on a 10.0 scale at the end of previous semester will be given the following merit scholarship on the tuition fee for the current semester, based on the CGPA secured for the normal duration of the programme:

CGPA	Scholarship on Tuition fee	
≥9	25%	
8.5 to 8.99	15%	
8.0 to 8.49	10%	

#### **1.6 Sports Concession**

a. ENTRY LEVEL: Students who have participated and won medals in the International championship by representing their Country are given a **scholarship of 50% of the first year tuition fee** and students who have participated in the International Championships are given **scholarships of 20% of first year tuition fee**. The Sport and the eligibility criteria of all applicants will be evaluated on a case by case basis and the scholarship will be awarded based on the committee's recommendation.

b. CONTINUING STUDENTS: Students who participate and win in three inter-university tournaments at the end of one academic year will be considered **for a scholarship of 20% of the tuition fee** for the current year for the normal duration of the program based on the committee's recommendation.

#### **FEE CONCESSIONS**

#### 2.1 For GCC/Arab Nationals

GCC/Arab Nationals with exceptional academic performance may receive up to 100% concession on their tuition fee for the normal duration of the programme. This discount is based on their Grade 12 performance and their ability to maintain a minimum CGPA of 4.5 throughout the programme. Limited scholarships are available under this category.

## 2.2 For the sudden bereavement of earning member of the family

The University provides support for students who experience financial hardship due to the sudden demise of the sole earning family member of the family. In such a case, the tuition fee for that semester will be fully waived. In subsequent semesters, a reduction of up to 75% of tuition fee may be offered based on individual circumstances, need, conduct and academic performance of the student.

#### 2.3 People of Determination

All students with special needs who meet the admission requirements are eligible for a 15% reduction in tuition fee throughout the programme, provided they maintain satisfactory academic performance in each semester.



#### 2.4 For Siblings

Families who have more than one child enrolled concurrently are eligible for a 25% tuition fee concession for the second child until the first child graduates.

Please note ;

All students must pay their specified fee at the time of Admission and any amount awarded as scholarship will be adjusted in the subsequent fee payment.

At any given time, a student can avail more than one scholarship/ concession unless otherwise mentioned, provided the total scholarship/concession amount does not exceed more than 50% of the tuition fee amount of that semester including all or any scholarship/concession availed by the student.

A student can avail hostel fee concession under one category only.

The decision of the university shall be final and cannot be contested on all matters of scholarships and concessions at BITS Pilani, Dubai Campus. The university has the right to discontinue the scholarship/concession at any time in case the student is found guilty in any disciplinary case.

While Scholarship based on "Merit in Qualifying Examination" will be given automatically based on the Grade 12 marks of the student, application for scholarship under all other categories must be submitted within one month from the date of registration to the Admissions Office. Any application received after one month will not be considered.

## **INNOVATION & ENTREPRENEURSHIP**

BITS Pilani, Dubai has taken a leap forward to encourage innovation & entrepreneurship skills among students by taking the following Initiatives

#### **INITIATIVES BY BITS PILANI, DUBAI**

- Incubation Centre Powered by Dubai SME
- 24x7 Creative Lab
- Minor program offered in Entrepreneurship with courses such as Entrepreneurship, New Venture Creation, Business Management and more
- Seed funding support through Alumni and Dubai SME
- Meeting and interactions with experts and investors
- Mentor allocation to all start-ups through alumni & Dubai SME
- Encouraging students participation in various events, pitching sessions and **B-Plan competitions**

#### **MORE THAN 50 STARTUPS INITIATED IN THE LAST 5 YEARS**







**PRESENTING AT INNOVATION HUB**  24X7 **CREATIVE LAB** 

# FALCONX MASER

Falcon X, started by Mr. Prabhakar Reddy, and MASER, started by Mr. Prateek Suri, both alumni of BITS Pilani, Dubai campus, have achieved Unicorn status.

Prospectus 2024

BITS Pilani, Dubai Campus

بيرلا إينستيتيوت أوف تكنولوجي الد ساينس بيلاني .دبي كامبس Birla Institute of Technology & Science, Pilani - Dubai Campus

#### **ADMISSIONS OFFICE:**

**Dubai International Academic City** P.O.Box: 345055, Dubai,UAE Tel: +971 42753700 / 3711

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