Birla School of Engineering & Technology

LATE BASANT KUMAR BIRLA & LATE SARALA BIRLA

"TO CREATE AND DISSEMINATE KNOWLEDGE IN A GLOBAL CONTEXT WHILE PURSUING EXCELLENCE, INNOVATIONS AND INCLUSIVENESS."

Birla Heritage

Late Syt. Basant Kumar Birla and Late Dr. (Smt.) Sarala Birla, successors of Late Syt. G.D. Birla, are our Founders and Patrons who established the Birla Academy of Art & Culture (BAAC) in Calcutta in 1964 to promote arts, culture, literature and education. The academy has been vital in establishing Birla Global University.

Late Syt. B.K. Birla has been involved in management since he was fifteen. Apart from being associated with management of several companies like Birla Brothers Pvt. Ltd. and Kesoram Industries & Cotton Mills Ltd., he has established many new industries for producing cotton, paper, polyester and nylon yarns, cement, chemical, tea, coffee, and cardamom.

While he was associated with Birla Institute of Technology & Sciences, Pilani, Birla Education Trust, Pilani and BITS, Biwani as trustee, he was also assciated with educational institutions noted below:

- Birla Global University (BGU), Bhubaneswar
- Birla Institute of Management Technology, Greater Noida
- Birla Vidya Vihar Trust, Calcutta
- Birla Sanskriti Trust, Calcutta
- Birla Vidya Mandir, Nainital
- Birla Vidya Niketan, New Delhi
- G.D Birla Memorial School, Ranikhet
- Sarla Birla University, Ranchi

Mission

- To globalize through international collaborations and exchange of students and faculty.
- To strive for excellence in teaching and research.
- To continuously innovate pedagogy and course content.
- To encourage diversity and inclusiveness.

Vision

To create and disseminate knowledge in global context while pursuing Excellence, Innovations and Inclusiveness

Values

Honesty and integrity
We believe in being truthful and adhering to the highest ethical standards in personal and professional conduct.

Empathy
We recognize the needs of human development and respect diverse social, cultural and economic perspectives.

Transparency
We believe in openness and assume responsibility as well as accountability in all our dealings and actions.

Freedom
We value the freedom of thought and expression to develop one's creativity and innovation in pursuit of academic excellence.

Respect
We foster a culture of respecting self and others.

Collaboration
We encourage teamwork and partnership in all endeavors for knowledge creation, acquisition and dissemination

Birla Global University (BGU) is a self-financed private unitary University

About Birla Global University

Birla Global University (BGU) is a self-financed private unitary University and has been established by the enactment of Birla Global University Odisha Act, 2015 with its main campus spread over an area of nearly 30 acres of land situated at IDCO Plot No.2, Gothapatna, Bhubaneswar. As per the Act, the management of the university is carried out by a Board of Governors headed by Smt. Jayashree Mohta, Chairperson, Birla Academy of Art & Culture being the main promoter of Birla Global University. Honorable Governor of Odisha is the Chancellor of the University.

The University has been established with a goal to be the best destination for aspiring new-gen professionals. It is committed to redefine 'quality' in education with state-of-the-art facilities, best of the infrastructure and finest faculty. Presently, the University operates with seven schools i.e. Birla School of Management, Birla School of Communication, Birla School of Commerce, Birla School of Economics, Birla School of Law, Birla School of Applied Sciences, Birla School of Engineering & Technology.

B.Tech. in Computer Science & Engineering

In the era of Industry 4.0 and Education 4.0, the demand for skilled professionals in Computer Science & Engineering (CSE) has reached unprecedented levels. As industries undergo digital transformation and embrace advanced technologies, there is a growing need for graduates who possess the technical acumen and innovative mind-set to drive innovation, solve complex problems, and propel organizations forward. The objective of the four-year, eight-semester BTech program in Computer Science & Engineering is to equip students with the knowledge, skills, and competencies required to thrive in the dynamic landscape of Industry 4.0. Through a comprehensive curriculum and hands-on experience, students will develop expertise in cutting-edge technologies such as artificial intelligence, machine learning, Internet of Things, and Big Data Analytics. The program aims to nurture innovation, critical thinking, and problem-solving abilities, preparing graduates to make meaningful contributions to industry, research, and society in the era of Industry 4.0. The BTech program features a meticulously designed curriculum crafted in partnership with industry leaders to ensure its relevance and practicality in real-world scenarios. Key highlights of the program include project-based learning, internships, and research projects spanning two years or four semesters, enabling students to apply classroom knowledge to solve authentic business challenges. The course structure incorporates industry-standard tools and technologies, with a focus on emerging areas such as Artificial Intelligence, Data Science, Machine Learning, Cloud Computing, and Mobile Applications. This program not only offers a rigorous curriculum crafted to meet industry demands and foster innovation but also provides students with the unique advantage of being associated with the esteemed Birla legacy, further enhanced by our rich corporate relations.

Employment Opportunity

Upon successful completion of the BTech program in Computer Science & Engineering, students will have access to a plethora of lucrative placement opportunities across diverse sectors. The program's industry-aligned curriculum, combined with hands-on experience and exposure to cutting-edge technologies, prepares graduates to excel in the rapidly evolving job market. Some of the prominent placement opportunities available to students include:

- Software Engineer/Developer: Design, develop, and maintain software applications, systems, and solutions using programming languages and development tools.
- Data Scientist/Analyst: Analyze large datasets, extract insights, and make data-driven decisions using statistical techniques, machine learning algorithms, and data visualization tools.
- Artificial Intelligence/Machine Learning Engineer: Develop AI/ML models, algorithms, and systems to solve complex problems and automate tasks in areas such as image recognition, natural language processing, and predictive analytics.
- Cybersecurity Analyst/Engineer: Protect organizational assets and information systems by identifying and mitigating security threats, vulnerabilities, and breaches through security assessments, monitoring, and incident response.
- Cloud Solutions Architect/Engineer: Design, deploy, and manage cloud infrastructure, platforms, and services to enable scalability, flexibility, and efficiency in cloud-based solutions and applications.
- Mobile Application Developer: Create mobile applications for iOS and Android platforms, utilizing programming languages, frameworks, and development tools to deliver engaging and user-friendly mobile experiences.
- Systems Administrator/Network Engineer: Configure, maintain, and troubleshoot computer systems, networks, and servers to ensure optimal performance, reliability, and security of IT infrastructure.

- Database Administrator: Manage and optimize databases, ensuring data integrity, availability, and security through database design, administration, and maintenance activities.
- IT Consultant: Provide expert advice, solutions, and recommendations to clients on technology-related issues, projects, and initiatives, helping them achieve their business objectives and digital transformation goals.
- Project Manager: Plan, coordinate, and oversee IT projects from initiation to completion, ensuring timely delivery, budget adherence, and stakeholder satisfaction while managing resources, risks, and scope changes.

Program Objective of B.Tech. in Computer Science Engineering

- Equipping with Core Knowledge: Provide students with a strong foundation in core concepts, principles, and theories of computer science and engineering.
- Developing Technical Skills: Foster the development of technical skills required for designing, developing, and implementing software and hardware systems.
- Promoting Problem-solving Abilities: Cultivate analytical and problem-solving abilities to address complex computational problems and challenges effectively.
- Encouraging Innovation and Creativity: Stimulate innovation and creativity by encouraging students to explore emerging technologies, experiment with new ideas, and develop innovative solutions.
- Facilitating Hands-on Experience: Provide hands-on experience through laboratory exercises, projects, and internships to reinforce theoretical concepts and develop practical skills.
- Fostering Teamwork and Collaboration: Promote teamwork and collaboration by engaging students in group projects, discussions, and presentations to enhance communication and interpersonal skills.
- Instilling Ethical Values: Instill ethical values and professionalism by emphasizing the importance of integrity, responsibility, and ethical conduct in the practice of computer science and engineering.
- Preparing for Industry Readiness: Prepare students for successful careers in industry by aligning the curriculum with industry requirements, incorporating industry-relevant tools and technologies, and providing opportunities for industrial exposure through internships and industry projects.

- Encouraging Lifelong Learning: Foster a culture of lifelong learning and professional development by promoting self-directed learning, continuous skill enhancement, and staying abreast of advancements in the field of computer science and engineering.
- Cultivating Leadership Qualities: Nurture leadership qualities and entrepreneurial mindset by providing opportunities for leadership roles, project management, and entrepreneurial activities to empower students to become future leaders and innovators in the field.

Eligibility

- Passes Class XII (or equivalent) in Science stream (Physics, Chemistry, Mathematics), with at least 60% marks in aggregate.
- Final year +2 students, who are expecting their results, can also apply.
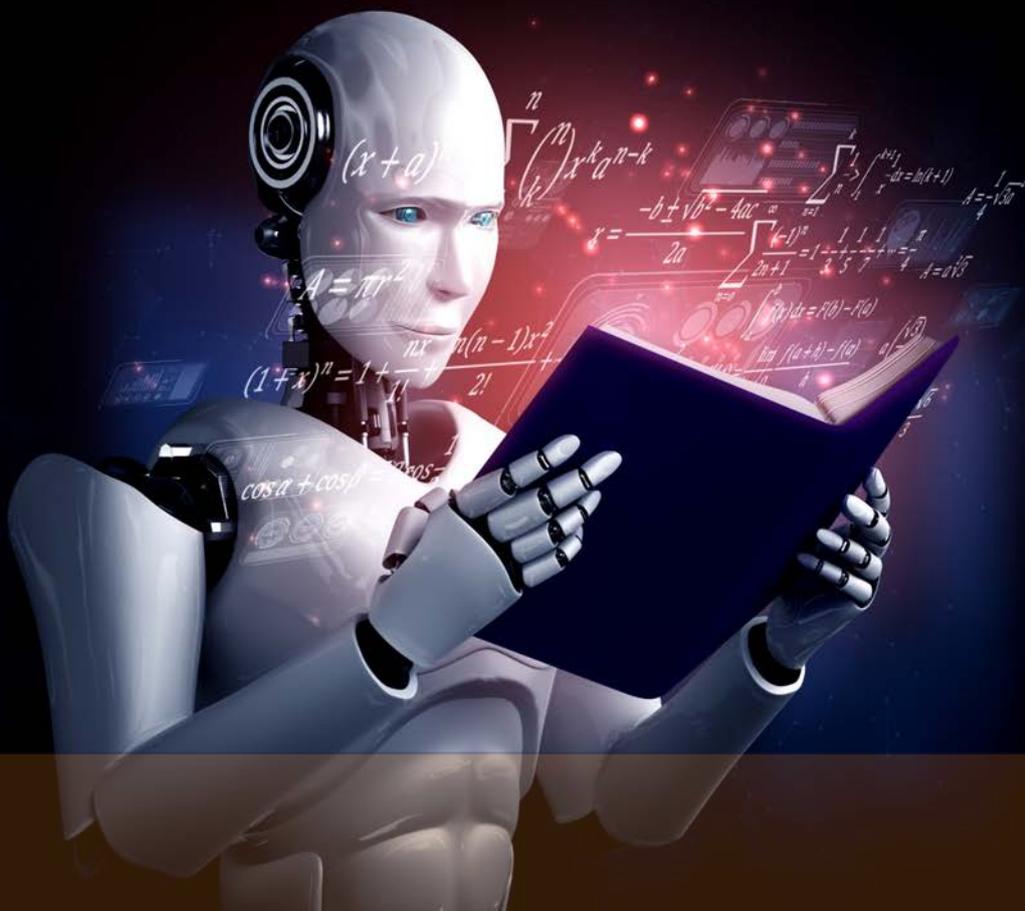
Program Duration

4 Years (Full Time, 8 Semesters)

Syllabus Structure Highlights

The B.Tech program in Computer Science & Engineering at Birla Global University is designed to provide students with a comprehensive education that combines theoretical knowledge with practical experience. The curriculum spans eight semesters and is structured to foster experiential learning, professional development, and specialization in key areas of interest. The following highlights key components of the proposed syllabus structure:

- Experiential Learning through Hands-On Projects: Throughout the program, students will engage in hands-on projects that allow them to apply theoretical concepts to real-world scenarios. These projects will be integrated into coursework and culminate in a final-year project where students will work on a substantial, independent project under the guidance of faculty mentors.

- Summer Internships: Students will have the opportunity to participate in summer internships with leading industry partners. These internships provide invaluable hands-on experience, expose students to industry best practices, and allow them to network with professionals in the field. Internship experiences will complement classroom learning and enhance students' employability upon graduation.

- Choice-Based Credit System through Electives: The curriculum includes a range of elective courses that enable students to tailor their education to align with their interests and career goals. Students can choose elective courses from specialized areas such as artificial intelligence, cybersecurity, data science, software engineering, and more. The choice-based credit system empowers students to customize their learning experience and delve deeper into areas of personal interest.

- Provision of Honors in Thrust Areas: To recognize academic excellence and specialization in specific thrust areas, the program offers the option for students to pursue honors in designated fields. Students who demonstrate exceptional proficiency and achievement in specialized areas of study will be awarded honors upon graduation, enhancing their credentials and competitiveness in the job market.

- Skill Enhancement through Preplacement Technical Training: In preparation for the transition to the workforce, students will undergo preplacement technical training to enhance their professional skills and readiness for employment. This training program will cover technical skills, communication skills, interview preparation, and other essential competencies required for success in the workplace.

Birla Global University

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