

AURORA DEEMED
TO BE
UNIVERSITY

**AURORA HIGHER EDUCATION
AND RESEARCH ACADEMY**



Building a gateway to the future...



B.Tech CSE
INFORMATION BROCHURE

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THE AURORA GROUP

Since its establishment in 1989, the Aurora Group has been at the forefront of quality education, dedicated to providing students with an unmatched learning journey that extends far beyond traditional classroom boundaries. Our core mission is to cultivate global citizens equipped with the skills and knowledge essential for success in today's rapidly evolving world. Renowned for our commitment to excellence, innovation and creativity, Aurora stands as a premier institution in professional education. We offer a diverse array of Undergraduate and Postgraduate programs spanning **Architecture, Arts, Commerce, Computer Applications, Engineering, Fine Arts, Law, Management Studies and Sciences.**

With an annual enrollment approaching 4000 students and a vibrant community of over 12,000 learners across our 14 campuses, we take pride in having empowered nearly one lakh alumni who are making significant contributions worldwide. Our dedicated team of 1500 professionals remain steadfast in its mission to continually enhance the quality of our educational offerings, ensuring that Aurora maintains its position at the pinnacle of academic distinction.



THE UNIVERSITY

Aurora, Deemed-to-be-University, established under section 03 of the UGC Act 1956 in 2022, stands as the premier Multi-disciplinary Education and Research-Intensive University in Telangana. Situated across two expansive campuses in **Uppal, Hyderabad** and **Bhongir, Yadadri District**.

Offering a comprehensive array of **Undergraduate, Postgraduate** and **Doctoral programs** spanning diverse disciplines across four schools, Aurora is committed to empower students with the skills, knowledge and competencies to excel in their respective fields and make significant contribution to the society. At the heart of our educational ethos lies a steadfast dedication to cutting-edge research, innovation, entrepreneurship and a global perception, ensuring an unparalleled academic journey.

Our distinguished faculty comprises of renowned scholars, researchers and industry experts committed to nurture academic excellence and intellectual curiosity. With their treasure of experience and expertise, they enrich the learning environment and foster professional growth. The University epitomizes a commitment to academic distinction, research and innovation, setting a standard for excellence in higher education within the region and beyond.

ACADEMIC CALENDAR

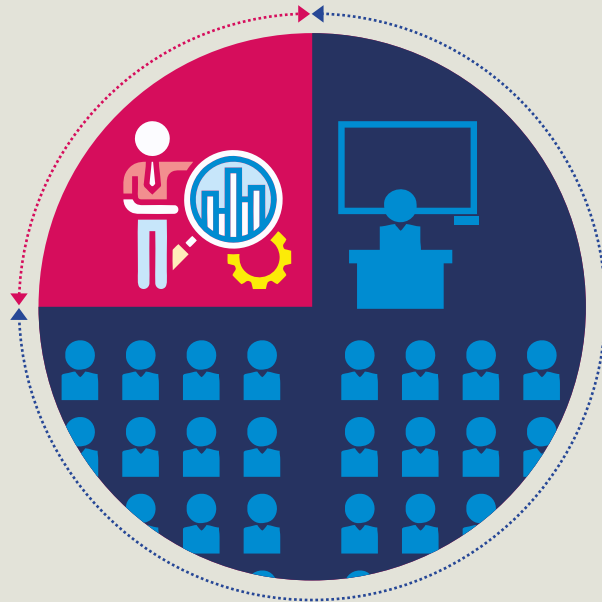
At Aurora, our academic calendar operates on the quarter system of 04 terms, with each term lasting 10 weeks.

First Three Terms

In the first three terms, students engage in a comprehensive academic experience. These terms focus on developing essential skills and competencies through interactive lectures, engaging discussions, laboratory sessions and course projects.

Fourth Term

The fourth term at Aurora University offers dynamic opportunities for exploration, innovation and practical application. This period includes projects, internships, workshops, conferences, research publications, and exchange programs, all designed to deepen knowledge and cultivate essential skills. Also, this term offers flexibility for addressing backlog subjects, ensuring students maintain academic momentum. Personalized support from faculty and advisors helps students maximize their fourth-term experience, paving the way for future success.



PROGRAM STRUCTURE

Aurora's undergraduate program offers a multi-layered framework designed to align with the National Education Policy 2020. The program is structured to provide a holistic and flexible educational experience, preparing students for the demands of the 21st century. It consists of five integrated layers, each aimed at fostering comprehensive student development. This integrated approach ensures that students are well-equipped with the skills, knowledge, and experiences needed to succeed in their chosen fields and navigate the complexities of the modern world confidently.

Core Program Provides foundational knowledge and essential skills through a combination of general courses, discipline-specific modules, and career-oriented tracks.

Research Education Focuses on developing research skills and intellectual curiosity through projects, experiments, and collaborations with faculty and peers. It includes Research learning, independent Research and dissemination.

External Certifications Offers opportunities for students to obtain relevant certifications in language proficiency, productivity skills, and industry readiness, enhancing their employability.

Foreign Language Requires students to gain proficiency in one of the foreign languages - French, German, Japanese, Spanish & Arabic, enhancing cross-cultural competence and global communication skills.

Talent & Enrichment Encourages exploration of interests, talent development, and engagement in sports, performing arts, visual arts, hobbies and extracurricular activities to foster essential life skills.



CORE PROGRAM

At our university, each subject is offered through a comprehensive approach that includes theory and project while some include laboratory work. This multi-faceted approach ensures that students gain a deep understanding of their subjects and develop practical skills essential for their future careers. By integrating theory, project and lab, our courses ensure that students receive a well-rounded education that prepares them for both academic and professional success. This approach not only deepens their understanding of the subject matter but also equips them with the skills needed to excel in their chosen fields.

THEORY

- Provides a strong foundational knowledge of the subject matter.
- Includes lectures, discussions and readings to cover fundamental concepts, principles, and theories.
- Helps students develop critical thinking and analytical skills.

PROJECT

- Allow students to apply theoretical knowledge to real-world problems.
- Encourage creativity, innovation, and practical problem-solving.
- Foster collaboration and teamwork as students often work in groups.
- Include surveys, literature studies, project design and presentations to enhance learning and professional skills.

LABORATORY

- Offer hands-on experience with the tools, techniques, and technologies related to the subject.
- Enable students to conduct experiments, simulations, and practical exercises.
- Help reinforce theoretical concepts through practical application.
- Provide an environment for students to develop technical skills and gain confidence in using equipment and software.

RESEARCH EDUCATION

Nestled at the core of our academic ethos, the Centre for Research and Development (R&D) stands as a beacon of innovation, discovery, and intellectual inquiry. Rooted in a steadfast commitment to excellence, our center serves as a vibrant hub where the pursuit of knowledge knows no bounds.

The Centre offers a comprehensive suite of research education courses meticulously crafted to nurture students' research acumen and intellectual curiosity. Our programs immerse students in the dynamic realm of research methodology, experimentation, and collaborative inquiry, fostering a spirit of exploration and innovation. Under the mentorship of seasoned experts, students embark on a transformative journey, delving deep into their areas of interest and contributing to the advancement of knowledge in diverse disciplines. Through hands-on experimentation, data analysis, and scholarly discourse, students hone critical research skills essential for scholarly inquiry and professional growth. Our curriculum is designed to instill a strong foundation in research excellence through a series of mandatory activities. Through these mandatory activities, students develop the critical thinking, analytical prowess, and scholarly rigor necessary to excel as researchers, scholars, and leaders in their chosen fields.

Research Methodology : Equipping students with essential tools and techniques for conducting rigorous research.

Research Publication and Ethics : Nurturing a culture of academic integrity and ethical research conduct.

Hot House : Fostering collaborative problem-solving and interdisciplinary dialogue.

Honour Essay : Encouraging students to explore and articulate their scholarly insights on a chosen topic.

Research Internship/Summer Research/Collaborative Research : Providing hands-on experience in real-world research settings.

Research Project : Empowering students to undertake independent research projects under faculty guidance.

Conference Paper Publication : Facilitating dissemination of research findings through academic conferences.

Journal Paper Publication : Guiding students through the process of scholarly publication in reputable journals.

EXTERNAL CERTIFICATIONS

Students are encouraged to foster continuous learning and personal growth. Through collaborative environments and expert guidance, students realize their potential, emerging as skilled professionals ready to make meaningful contributions in their fields. We prioritize empowering students with the practical skills needed to excel in today's competitive landscape, focusing on language proficiency, IT proficiency, and professional certifications.

English Language Proficiency



CEFR - B1, B2, C1, C2 certifications

Public Speaking Proficiency



Dynamic Public Speaking

Productivity Suit



Word, Excel, PowerPoint

Professional Certifications



Developer
DevOps Engineer
Solutions Architect



Database Administrator
Developer
Data Analyst
Power BI
PowerShell Developer
JavaScript Developer



Android Developer
Cloud Engineer

ORACLE

Database Administrator
Oracle Professional
System Administrator
Java Developer



App Developer



System Administrator
Linux Professional



System Administrator
DevOps Engineer



Developer



Database Developer
Database Administration



System Administrator



Network Associate

FOREIGN LANGUAGES

We recognize the importance of linguistic proficiency in today's globalized society. The centre is dedicated to facilitating the acquisition of proficiency in foreign languages and enriching students' cross-cultural competence, global perspective, and communication skills. Foreign Language acquisition is integral to our students' holistic development and readiness for the challenges of an interconnected world. Through immersive language instruction, interactive activities, and cultural immersion experiences our students embark on a transformative journey of linguistic exploration and cultural understanding.

Our comprehensive language programs cover a diverse range of languages - Spanish, French, German, Japanese and Arabic.

By mastering a foreign language, students not only enhance their communication skills but also gain invaluable insights into diverse cultures, traditions, and perspectives. This immersive linguistic experience prepares students to navigate global contexts with confidence, empathy, and respect, fostering meaningful connections and collaborations across borders.

Spanish
French
German
Japanese
Arabic

TALENT ENRICHMENT

Dedicated to fostering holistic growth and personal enrichment, the Center for Talent & Enrichment offers a diverse array of opportunities for students to explore their interests, develop their talents, engage in extracurricular activities, and excel in sports. This centre serves as a dynamic space where students can discover their passions and cultivate essential life skills that extend beyond the classroom. Students are empowered to pursue their passions, expand their horizons, and cultivate skills that transcend disciplinary boundaries. By engaging in experiential learning opportunities and immersive activities, students emerge as well-rounded individuals equipped with the creativity, adaptability, and resilience necessary to thrive in an ever-evolving world. Our students explore the rich array of courses offered where they have an opportunity to pursue their passions and expand their horizons. From sports, performing arts, visual arts and tourism to culinary arts and hobbies, our diverse curriculum is designed to cultivate creativity, hone skills, and foster personal growth.



Sports

Our sports department offers students an opportunity to engage in physical activity, develop teamwork skills, and foster a healthy lifestyle. From team sports like basketball, volleyball, cricket and football to individual pursuits, students can explore a range of athletic interests and abilities.



Performing Arts

The Performing Arts curriculum invites students to explore the realm of music and dance through a series of immersive courses. From introductory sessions in music appreciation and dance techniques to advanced studies in music production and contemporary dance forms, students develop proficiency in performance, composition, and industry insights, fostering a deep appreciation for the arts.



Visual Arts

In the Visual Arts domain, students unleash their creativity and artistic expression through a comprehensive series of courses. Beginning with foundational studies in Graphic Design and Fine Arts, students progress through intermediate courses in UI Design Principles and Digital Animation, ultimately specializing in Typography, Typeface Design, and Fashion Photography, exploring the intersection of art and technology.



Tourism

Delving into the vibrant world of Tourism and Hospitality Management, students embark on a journey structured across four progressive levels. From introductory courses exploring the fundamentals of Tourism Management to specialized studies in Ecotourism and Sustainable Development, students gain insights into industry practices, marketing strategies, and destination management, preparing them for dynamic careers in the field.



Culinary Arts

For aspiring culinary enthusiasts, our Culinary Arts and Gastronomy program offers a rich tapestry of courses designed to hone culinary techniques and culinary innovation. Starting with introductory courses in Culinary Arts, students progress through levels exploring international cuisines, pastry arts, and gastronomic tourism, culminating in specialized studies in Molecular Gastronomy and Culinary Innovation.

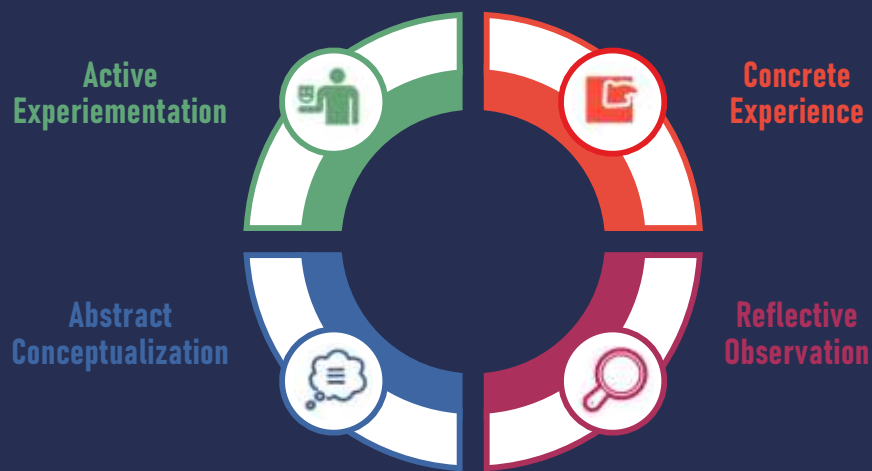


Hobbies

In addition to academic pursuits, our center offers hobby-based courses that allow students to explore interests outside of their academic field. From gardening and photography to creative writing and language learning, students have the opportunity to pursue hobbies that enrich their lives and broaden their horizons.

TEACHING LEARNING

At Aurora, we embrace a "Reflective Teaching-Learning" approach, guided by Kolb's cycle. Our curriculum prioritizes critical thinking, enabling students to apply knowledge in diverse contexts. This method involves four stages:



Concrete Experience

Hands-on activities and discussions for immersive learning.

Reflective Observation

Critical analysis of teaching experiences to foster self-awareness.

Abstract Conceptualization

Synthesis of experiences with educational theories for deeper understanding.

Active Experimentation

Refinement of teaching methods and application of concepts in practical projects.

Peer collaboration and feedback facilitate shared learning

CONTINUOUS ASSESSMENT

Our assessment system adopts a dynamic approach, fostering critical thinking, creativity, and practical proficiency. Integrating Kolb's cycle, it enables continuous learning and self-improvement for students, preparing them for academic and professional success.

Theory

Evaluated across three phases of Kolb's cycle, ensuring a deep understanding of the theoretical concepts through pre-learning, reflective journals, assignments, interactive sessions, class presentations, learning activity reports, reflective essays and quizzes.

Project

Integrates Kolb's cycle, focusing on real-world problem-solving and application of concepts. Assessment methods include precedent studies, literature surveys, project design, demonstration and presentation, nurturing practical skills and innovative thinking.

Laboratory

Emphasizes hands-on learning, allowing students to apply theoretical knowledge in practical settings, enhancing their skills and analytical abilities.



ACADEMIC PROGRESSION

We take pride in our robust promotion system, meticulously crafted to maintain academic rigor while nurturing student growth and success. Through a structured framework of holds including Academic Warning, Probation, Suspension, and Dismissal, we provide clear pathways for students to navigate their academic journey.

Academic Warning serves as an initial alert, indicating areas where improvement is needed, with the opportunity for remediation.

Academic Probation offers a focused period for intervention and guidance to students who require further support, emphasizing the importance of meeting prescribed credits and achieving minimum grades.

Academic Suspension provides a temporary pause for those facing persistent challenges, allowing time for reflection and reevaluation.

However, we believe in second chances, and our promotion system is designed to be supportive yet firm, with avenues for appeal and readmission for those who demonstrate a commitment to improvement.

Throughout this process, our dedicated faculty and advisors stand ready to offer personalized assistance, from tutoring to academic planning, ensuring that no student is left behind.

REFLECTIVE COURSE PROFILE

Every term student receive a Course Profile for each course they register, comprising of the following. It ensures they engage deeply with the material, develop critical thinking skills, and apply their knowledge to real-world contexts.

Course Objectives

Clear goals and what students are expected to achieve by the end of the course.

Learning Outcomes

Specific skills and knowledge students will gain.

Syllabus

Module-wise outline of topics and contents

Structured Learning Plans

Module-based learning plans outlining topics, readings, and activities.

Project and Lab Components

Description of practical projects and lab work included in the course.

Module-wise Assessment Guidelines

Detailed criteria and methods for evaluating student performance.

Academic Integrity Expectations

Standards and policies for maintaining honesty and ethics in academic work.

Schedules

Details of class presentations, industry engagement activities, Timeline for project milestones etc.

SMALLER CLASSES

With a class size limit of 30 students, we prioritize an intimate learning environment at Aurora, ensuring that each student receives the personalized attention they need to thrive. In smaller classes, students benefit from more direct interaction with professors and peers, fostering a deeper understanding of the coursework. This intimate setting allows for comprehensive feedback on assignments, as instructors have the time and resources to provide detailed insights tailored to each student's needs. Moreover, smaller classes promote active class participation, creating a dynamic learning atmosphere where students feel comfortable engaging with course material and expressing their ideas. By limiting class sizes, we uphold our commitment to academic excellence and student success, providing an enriching educational experience that prepares students for the challenges of the future.



DIGITAL EVOLUTION

In the digital age, education undergoes a profound transformation, embracing innovative technologies to redefine the learning experience. At Aurora, we lead this evolution with pioneering initiatives harnessing digitalization's power to enhance education. From e-assessments revolutionizing evaluation methods to smart classrooms fostering dynamic learning, our commitment to digital transformation shapes a future-centric approach. With a focus on equitable access, personalized learning, and tech literacy, Aurora empowers all stakeholders in an interconnected world driven by digital innovation.



The Aurora **mLibrary** revolutionizes access to information with a vast repository of digital resources. Featuring e-books, scholarly articles, and multimedia content, our e-library caters to diverse interests and academic pursuits. User-friendly interfaces and advanced search functionalities facilitate efficient research and knowledge acquisition, empowering exploration and discovery.



Our **e-assessments** redefine traditional evaluation methods, offering flexibility, efficiency, and scalability. Leveraging cutting-edge technologies, we provide real-time feedback and monitor student progress within virtual environments. Seamlessly integrated into the learning process, our e-assessment platform cultivates a culture of innovation and excellence.



In our **e-classrooms**, education transcends boundaries through technological innovation. Equipped with audiovisual systems, interactive whiteboards, and high-speed internet, our e-classrooms foster immersive and engaging learning tailored to diverse styles. Interactive presentations, real-time collaboration tools, and access to digital resources promote critical thinking and creativity.



We facilitate **e-portfolios** to students, a digital platform to showcase their academic achievements and skills. By compiling evidence of their learning journey, students reflect on their progress and demonstrate capabilities to potential employers or academic institutions.

GLOBAL PERSPECTIVE

At Aurora, we prioritize Internationalization as a core aspect of our academic mission, aiming to cultivate global citizenship, intercultural understanding, and academic excellence. Through diverse initiatives and programs, we create an inclusive learning environment that prepares students for success in an interconnected world.

Exchange Programs

Students can study abroad at partner institutions worldwide, enhancing language skills and gaining cross-cultural experiences.

Study Abroad

Tailored programs allow students to pursue academic interests in international settings, broadening perspectives and earning credits towards their degree.

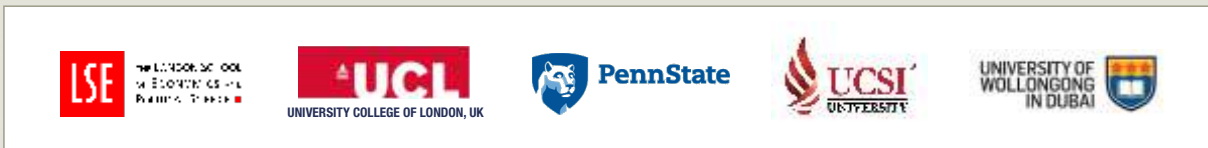
Global Immersion Programs

Transformative experiences include visits to foreign universities, engaging with faculty, and experiential learning activities.

International Collaborations

Partnerships with institutions and industry leaders foster mutual learning, research innovation, and interdisciplinary collaboration, preparing students to address global challenges.

Our Global Partner institutions





SCHOOL OF ENGINEERING

The School of Engineering is a vibrant hub of cutting-edge Engineering & Technology, showcasing the latest advancements and state-of-the-art facilities. Under the guidance of eminent faculty and industry experts, the School offers an immersive educational journey emphasizing hands-on learning, critical thinking and collaboration to prepare students for success in the field. Our mission is anchored in innovation, research and fostering a culture of exploration and discovery. By offering a diverse array of Undergraduate, Postgraduate and Doctoral Programs, the school equips students with the requisite skills and competencies to thrive in the fast-paced and ever-evolving landscape of Engineering and Technology. Committed to nurturing the next generation of engineers, our comprehensive curriculum and dynamic learning environment enable them to push boundaries and contribute to the advancement of their field by tackling complex challenges.

“

We promise all of you an excellent atmosphere, which shall enable you to discover your latent potential. We guide you through the process of building your competencies that are required for taking up professional and career-related challenges.

”

DISTINGUISHED FACULTY

At the School of Engineering, we pride ourselves on having a world-class faculty dedicated to academic excellence, innovative research, and student success. Our faculty members are leaders in their fields, holding advanced degrees from prestigious universities worldwide. They bring a wealth of knowledge, experience, and a passion for teaching to the classroom, ensuring that our students receive a rigorous and relevant education.



Expertise and Innovation

Our professors are at the forefront of engineering research, contributing to cutting-edge advancements in areas such as artificial intelligence, renewable energy, biomedical engineering, and more. Their work is regularly published in top-tier journals and presented at international conferences.



Industry Connections

Many of our faculty members have substantial industry experience, providing students with insights into real-world engineering challenges and opportunities. These connections often lead to internships, collaborative projects, and job placements for our graduates.



Student Mentorship

Beyond their roles as educators, our faculty serve as mentors, guiding students through their academic journey and helping them achieve their career goals. They are committed to fostering a supportive and inclusive environment where every student can thrive.

B.TECH CSE PROGRAM

B.Tech Computer Science and Engineering program is designed to offer students a deep and comprehensive understanding of fundamental computer science principles, algorithms, and programming languages. It provides a solid foundation in both theoretical concepts and practical applications.



Curriculum

The curriculum covers a wide range of subjects including fundamental courses, multi disciplinary, design courses, programming languages and advanced technology oriented courses catering the industry demands.



Hands-on Experience

The program emphasizes hands-on experience in software development, system design and data engineering. Students engage in real time projects, coding exercises and laboratory sessions to enhance their technical competencies applying the theoretical knowledge gained.



Exposure to Emerging Technologies

Students are exposed to emerging technologies and trends such as Artificial Intelligence, Machine Learning, Data Science, Cyber Security, Internet of Things, Block Chain Technologies, Cloud Computing, AR&VR, Robotics, Quantum Computing etc.



Industry-Relevant Skills

The curriculum is designed to equip students with industry-relevant skills that are in high demand such as Full Stack Development, Power BI, Tableau, DevOps, UI/UX, Java, Python, Shell Scripting, Visual Studio, AWS, Azure, Weka, SQL etc.

Career
Prospects

Software Engineer - Develop applications and systems across industries such as finance, healthcare, entertainment, and telecommunications.

Web Developer - Design and build websites, web applications, and e-commerce platforms for clients worldwide.

Database Administrator - Manage and maintain crucial data assets in sectors like education, government, and retail.

System Analyst - Evaluate and enhance information systems and technology infrastructure in manufacturing, logistics, and consulting sectors.

Cybersecurity Specialist - Protect systems, networks, and data from cyber threats in industries such as banking, defense, and technology, both domestically and internationally.

Research and Development - Engage in innovative projects and contribute to advancements in computer science and technology.

IT Consultant - Provide expert advice to organizations on optimizing their IT infrastructure and strategies.

Project Manager - Oversee and coordinate technology projects, ensuring they meet deadlines and budgets.

Artificial Intelligence/Machine Learning Engineer - Develop and implement AI and ML algorithms for various applications across industries.

Cloud Solutions Architect - Design and manage cloud computing systems and solutions for businesses.

Mobile App Developer - Create and maintain applications for mobile devices, catering to a growing market.

Technical Support Engineer - Offer support and troubleshooting for IT systems and software.

Game Developer - Design and develop interactive games for entertainment and education.

COURSE STRUCTURE

FRESHMAN YEAR

S.No	Layer	Course Code	Course/Activity	Hours per Week		Credits
				L	P	
TERM I						
1	Core Education	MA101	Calculus	3	0	3
2	Core Education	CH101	Chemistry	3	2	4
3	Core Education	CS101	Computer Essentials	3	2	4
4	Foreign Language	FL10X	Foreign Language(Elective)-A1	3	0	0
5	External Certification	EC101	Cambridge English B1	0	0	0
6	External Certification	EC102	Microsoft Office Specialist : Word 2013	0	0	1
7	Talent & Enrichment	TE101	Elective-I	0	2	0
Total				12	6	12
TERM II						
1	Core Education	MA102	Differential Equations	3	0	3
2	Core Education	PH101	Physics I	3	2	4
3	Core Education	BY101	Biology	2	0	2
4	Core Education	CS102	C Programming	2	4	4
5	Core Education	ME101	Design Drafting	0	6	3
6	Foreign Language	FL10X	Foreign Language(Elective)-A1	3	0	0
7	External Certification	EC101	Cambridge English B1	0	0	0
8	External Certification	EC202	Microsoft Office Specialist : Excel 2013	0	0	1
9	Talent & Enrichment	TE101	Elective-I	0	2	0
Total				13	14	17
TERM III						
1	Core Education	MS101	Managerial Economics and Financial Accounting	3	0	3
2	Core Education	MA103	Linear Algebra	3	0	3
3	Core Education	PH102	Physics II	3	2	4
4	Core Education	CS103	Data Structures	2	4	4
5	Core Education	ME102	Engineering Practice	0	6	3
6	Foreign Language	FL10X	Foreign Language(Elective)-A1	3	0	1
7	External Certification	EC101	Cambridge English B1	0	0	1
8	External Certification	EC302	Microsoft Office Specialist : Power Point 2013	0	0	1
9	Talent & Enrichment	TE101	Elective-I	0	2	0
Total				14	14	20
TERM IV						
1	Core Education	HY101	Indian Heritage and Culture	2	0	2
2	Core Education	IE301	Internship-I	0	8	4
3	Foreign Language	FL20X	Foreign Language(Elective)-A2	3	0	0
4	External Certification	EC104	Dynamic Public Speaking-1&2	0	0	1
5	External Certification	EC201	Cambridge English B2	0	0	0
6	Talent & Enrichment	TE101	Elective-I	0	2	3
Total				5	10	10

SOPHOMORE YEAR

S.No	Layer	Course Code	Course/Activity	Hours per Week		Credits
				L	P	
TERM I						
1	Core Education	DT101	Design Thinking	0	4	2
2	Core Education	MA104	Probability and Statistics	3	0	3
3	Core Education	EE101	Basic Electrical and Electronics Engineering	3	2	4
4	Core Education	CS203	Computer Organization and Architecture	3	0	3
5	Core Education	CS201	Python Programming	2	4	4
6	Foreign Language	FL20X	Foreign Language(Elective)-A2	3	0	0
7	Research Education	RE101	Research Methodology	2	0	2
8	External Certification	EC201	Cambridge English B2	0	0	1
9	External Certification	EC204	Dynamic Public Speaking-3&4	0	0	1
10	Talent & Enrichment	TE201	Elective-II	0	2	0
Total				16	12	20
TERM II						
1	Core Education	MA105	Discrete Mathematics	3	0	3
2	Core Education	CS202	Java Programming	2	4	4
3	Core Education	EL101	Digital Electronics	3	2	4
4	Core Education	CS304	Theory of Computation	3	0	3
5	Core Education	CS206	Data Base and Information Systems	3	2	4
6	Foreign Language	FL20X	Foreign Language(Elective)-A2	3	0	1
7	Research Education	RE102	Research Publication & Ethics	2	0	2
8	External Certification	EC301	Cambridge English C1	0	0	0
9	External Certification	EC103	Professional Certification - 1	0	0	0
10	Talent & Enrichment	TE201	Elective-II	0	2	0
Total				19	10	21
TERM III						
1	Core Education	MS102	Start-up Management	3	0	3
2	Core Education	CS205	Operating Systems	3	2	4
3	Core Education	OE-1	Open Elective - 1	3	0	3
4	Core Education	CS207	Computer Networks	3	2	4
5	Core Education	CS204	Design and Analysis of Algorithms	3	2	4
6	Foreign Language	FL30X	Foreign Language(Elective)-B1	3	0	0
7	Research Education	RE103	Theory of Knowledge	2	0	2
8	External Certification	EC301	Cambridge English C1	0	0	0
9	External Certification	EC103	Professional Certification - 1	0	0	0
10	Talent & Enrichment	TE201	Elective-II	0	2	0
Total				20	08	20
TERM IV						
1	Core Education	HY102	Constitution of India	2	0	2
2	Core Education	HY103	Gender Sensitisation	2	0	2
3	Core Education	IE302	Internship-II	0	8	4
4	Foreign Language	FL30X	Foreign Language(Elective)-B1	3	0	0
5	Research Education	RE201	Hot House - 1	0	0	1
6	External Certification	EC301	Cambridge English C1	2	0	2
7	External Certification	EC103	Professional Certification - 1	0	0	2
8	Talent & Enrichment	TE201	Elective-II	0	2	3
Total				09	10	16

JUNIOR YEAR

S.No	Layer	Course Code	Course/Activity	Hours per Week		Credits
				L	P	
TERM I						
1	Core Education	CS301	Software Engineering	3	2	4
2	Core Education	CS302	Artificial Intelligence	3	2	4
3	Core Education	CS303	Introduction to Data Science	3	2	4
4	Core Education	OE-2	Open Elective - 2	3	0	3
5	Core Education	EL201	Signals and Systems	3	0	3
6	Foreign Language	FL30X	Foreign Language(Elective)-B1	3	0	0
7	External Certification	EC401	Cambridge English-C2	0	0	0
8	External Certification	EC203	Professional Certification - 2	0	0	0
9	Talent & Enrichment	TE301	Elective-III	0	2	0
			Total	18	08	18
TERM II						
1	Core Education	CS305	Machine Learning	3	2	4
2	Core Education	CS306	Web Technologies	3	2	4
3	Core Education	CS307	Embedded Systems	3	0	3
4	Core Education	PE-1	Professional Elective - 1	3	0	3
5	Core Education	CS308	Digital Image Processing	3	2	4
6	Foreign Language	FL30X	Foreign Language(Elective)-B1	3	0	1
7	External Certification	EC401	Cambridge English-C2	0	0	0
8	External Certification	EC203	Professional Certification - 2	0	0	0
9	Talent & Enrichment	TE301	Elective-III	0	2	0
			Total	18	08	19
TERM III						
1	Core Education	CS309	Compiler Design	3	2	4
2	Core Education	CS310	Data Mining	3	2	4
3	Core Education	CS311	Cryptography and Network Security	3	2	4
4	Core Education	PE-2	Professional Elective - 2	3	0	3
5	Core Education	CS406	Quantum Computing(H)	3	0	3
6	Foreign Language	FL40X	Foreign Language(Elective)-B2	3	0	0
7	External Certification	EC401	Cambridge English-C2	0	0	0
8	External Certification	EC203	Professional Certification - 2	0	0	0
9	Talent & Enrichment	TE301	Elective-III	0	2	0
			Total	18	08	18
TERM IV						
1	Core Education	HY104	Human Values and Professional ethics	2	0	2
2	Core Education	HY105	Indian Classical Text - Elective	2	0	2
3	Core Education	IE303	Internship-III	0	8	4
4	Foreign Language		Foreign Language (Elective)-B2	3	0	0
5	Research Education	RE202	Hot House - 2	0	0	1
6	Research Education	RE401	Conference Paper Publication	0	0	1
7	External Certification	EC401	Cambridge English-C2	0	0	2
8	External Certification	EC203	Professional Certification - 2	0	0	2
9	Talent & Enrichment	TE301	Elective-III	0	2	3
			Total	7	10	17

SENIOR YEAR

S.No	Layer	Course Code	Course/Activity	Hours per Week		Credits
				L	P	
TERM I						
1	Core Education	CS401	Cloud Computing	3	2	4
2	Core Education	CS402	Internet of Things	3	2	4
3	Core Education	PE-3	Professional Elective - 3	3	0	3
4	Core Education	PE-4	Professional Elective - 4	3	0	3
5	Core Education	CS407	Robotics(H)	1	4	3
6	Foreign Language	FL40X	Foreign Language(Elective)-B2	3	0	0
7	External Certification	EC303	Professional Certificate-3	0	0	0
			Total	16	08	17
TERM II						
1	Core Education	MS103	Intellectual Property Rights	2	0	2
2	Core Education	PE-5	Professional Elective - 5	3	0	3
3	Core Education	CS408	Computer Graphics (H)	3	2	4
4	Core Education	CS409	Mobile Application Development (H)	3	2	4
5	Core Education	OE-3	Open Elective - 3	3	0	3
6	Foreign Language	FL40X	Foreign Language(Elective)-B2	3	0	1
7	External Certification	EC303	Professional Certificate-3	0	0	0
			Total	17	4	17
TERM III						
1	Core Education	PE-6	Professional Elective - 6	3	0	3
2	Core Education	CS410	Full Stack Development (H)	3	2	4
3	Core Education	IE401	Major Project - I	0	16	8
4	Research Education	RE203	Honours Essay	0	0	1
5	External Certification	EC303	Professional Certificate-3	0	0	0
			Total	6	18	16
TERM IV						
1	Core Education	CH102	Environmental Science	2	0	2
2	Core Education	IE402	Major Project - II	0	32	16
3	Research Education	RE403	Journal Publication	0	0	2
4	External Certification	EC303	Professional Certificate-3	0	0	2
			Total	2	32	22

SPECIALIZED STREAMS

For B.Tech in Computer Science and Engineering, we offer a unique approach to elective courses by allowing students to choose any two specialized streams from a selection of five. Each stream comprises carefully curated subjects designed to align with current market demands and industry relevance. This flexibility empowers students to tailor their education to their interests and career aspirations, ensuring they acquire in-depth knowledge and skills in areas that are highly sought after in the professional world. Through these specialized streams, students are well-prepared to excel in their chosen fields, making them highly competitive and industry-ready upon graduation.



Artificial Intelligence & Machine Learning

- Deep Learning
- Natural Language Processing
- Applied Machine Learning
- Expert Systems
- Computer Vision
- Reinforcement Learning
- Explainable AI



Internet of Things

- Sensor Technologies
- IoT System Architecture
- IoT Device Programming
- FoG Computing
- Edge Computing
- IoT Security
- Industrial IoT



Data Science

- Information Retrieval Systems
- Data Analytics
- Data Visualization
- Distributed Database Systems
- Big Data Technologies
- Cloud Computing for Big Data
- Social Network Analysis



Cyber Security

- Digital Forensics
- Malware Analysis
- Information Security
- Blockchain Technologies
- Ethical Hacking
- Cloud Security



Software Engineering

- Software Architecture and Design Patterns
- Software Project Management
- Software Testing Methodologies
- Software Reliability Techniques
- Software Risk Management
- Software Quality Assurance



Honors Courses

- Quantum Computing
- Robotics
- Computer Graphics
- Mobile App Development
- Full Stack Development

INDUSTRY COLLABORATIONS

Our B.Tech in Computer Science and Engineering program is enriched by strong industry collaborations. We partner with leading tech companies and organizations to provide students with real-world exposure, hands-on experience, and insights into the latest industry trends. Through internships, joint research projects, guest lectures, and industry-sponsored workshops, students gain practical skills and networking opportunities that are crucial for their professional growth. These collaborations ensure that our curriculum remains relevant and aligned with the dynamic demands of the tech industry, preparing our graduates to excel in their careers.



CAREER GUIDANCE SERVICES

Internships

Internships are gateway to the corporate world to experience the real time exposure. Each "Aurorian" is provided with ample opportunity to pursue multi-disciplinary internships during the final term of each year. Through our robust industry interface our students engage in diverse internship experiences. These Internship providers include, Corporate Firms, Research Institutes, Govt Agency and many more. This exclusive Internship program offers students flexibility to explore different domains and attain practical real time exposure, thereby laying a rock solid foundation to their dream career.

Higher Education

Aspirants who are dreaming their career abroad are nurtured with elementary orientation sessions delivered by International University delegates. These sessions throw light on global career avenues, pre requisites, application process and training to clear the entrance test. Our Cambridge University Certification Program plays a vital role in earning the candidature of a foreign university. Hence globally competent technocrats are crafted here.

OUR MAJOR RECRUITERS



Placements

We adopt a Campus to corporate transforming approach in shaping and crafting the career span of our student. An exclusively dedicated team works round the year to foster career opportunities and this team is back-end by extensive career grooming services, that includes Technical and Non Technical Training (Campus Recruitment Training). These services are customized to enhance a three dimensional skill-set i.e. Language Proficiency, IT Proficiency, Aptitude Skills Expertise and training to get professional certifications. We are partnered with market leaders for skill enhancement initiatives and CRT Programmes. Our Robustic Client Connect and alumni network enables us to invite Top-Notch MNCs to bag placement opportunities in trending or emerging technologies. Hence, we not only teach them how to fly but provide them wings to fly and shine across the globe. .



AURORA HIGHER EDUCATION AND RESEARCH ACADEMY

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