



B.Sc.

**DESIGN &
COMPUTING**

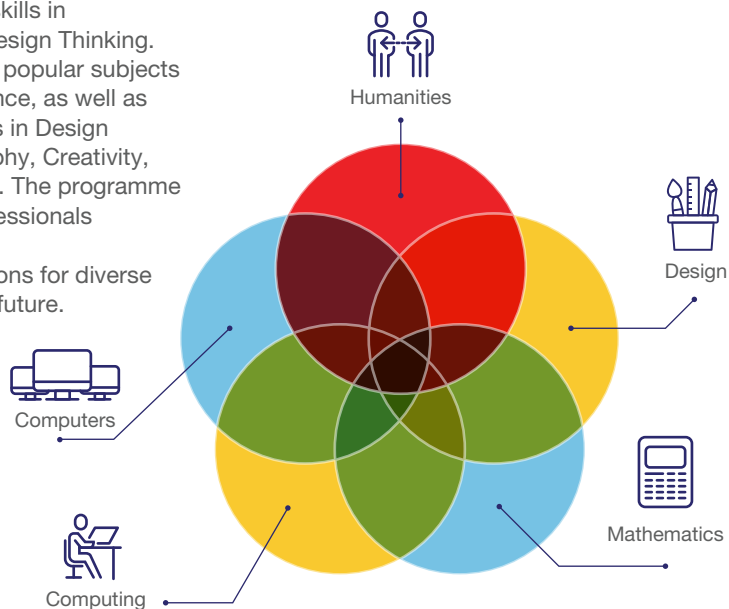


BITS Pilani
Pilani | Dubai | Goa | Hyderabad

HCL



B.Sc. Design & Computing is an eight-semester programme that prepares young IT professionals with 10+2 qualification to take on the challenges of the future by acquiring skills in Computing as well as Design Thinking. The curriculum includes popular subjects in Technology and Science, as well as high-in-demand courses in Design thinking, Logic, Philosophy, Creativity, and Cross-cultural skills. The programme is designed to help professionals conceptualize and build computing-driven solutions for diverse customer needs for the future.



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WHAT ARE THE MAIN HIGHLIGHTS OF THE PROGRAMME?

- ▶ Learn without a career break with online classes conducted mostly on weekends or after business hours.
- ▶ The programme offers a set of courses that allow learners to gain expertise in designing and managing hardware, software, storage & networking systems, and Infrastructure Services management.
- ▶ The programme makes use of Simulation Software, and Deployment Environments. These include CloudSim, NS2, Net-SNMP, CPU-OS Simulator, Amazon's Compute and Storage platforms, Apache cloud suite, and other open-source tools/frameworks.
- ▶ The Dissertation (Project Work) in the final semester enables students to apply concepts and techniques learnt during the programme.
- ▶ The programme uses a Continuous Evaluation System that assesses the learners over convenient and regular intervals. Such a system provides timely and frequent feedback and helps busy working professionals stay on course with the programme.
- ▶ The education delivery methodology is a blend of classroom and experiential learning. Experiential learning consists of lab exercises, assignments, case studies and work-integrated activities.
- ▶ Participants who successfully complete the programme will become members of an elite & global community of BITS Pilani Alumni.



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WHAT ARE THE PROGRAMME OBJECTIVES?

The programme is designed to prepare the next generation of IT professionals who will be able to apply design thinking to build computing-driven solutions for diverse customer needs in a variety of scenarios / environments.



WHAT ARE THE LEARNING OUTCOMES?

Upon successful completion of the programme, participants will be able to:

- ▶ Demonstrate understanding of hardware and software.
- ▶ Demonstrate problem solving skills using programming and software.
- ▶ Apply discrete math and statistics to solve computational problems.
- ▶ Demonstrate an acquaintance with different trajectories of thoughts in the humanities.
- ▶ Demonstrate understanding of design principles and design thinking.
- ▶ Apply design thinking in the context of software.

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WHAT IS THE PROGRAMME CURRICULUM?

The curriculum offers an innovative confluence of knowledge and skills highly valued by the industry and includes popular subjects in Technology and Science, and areas such as Design thinking, Logic, Philosophy, Creativity, and Cross-cultural skills.

The curriculum includes 24 core courses and 4 electives. The 24 core courses comprise of 10 courses in Computers and

Computing, 4 courses in Mathematics, 5 courses in Design, and 5 courses in Humanities.

The 4 electives^[1] will be chosen from a pool of 28 elective courses shared with the employer organisation. This pool of electives comprises of 9 courses in Computers and Computing, 2 courses in Mathematics, 6 courses in Design, and 11 courses in Humanities.



[1] Choice of 4 electives will be mutually made by BITS Pilani and the employer organization depending on factors such as student preferences, business needs, and feasibility.

*Electives finally offered will be at the discretion of the BITS Pilani, and will be decided in consultation with HCL.
Offered electives will be made available to enrolled students at the beginning of each semester.*

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PROGRAMME STRUCTURE

Year	First Semester	Units	Second Semester	Units
I	Writing Practice	3	Dynamics of Social Change	3
	Symbolic Logic	3	Computer Programming	4
	Electrical Sciences	3	Discrete Structures for Computer Science	3
	Probability & Statistics	3	Environmental Studies	3
	Total	12	Total	13
II	Digital Design	4	Computer Org and Architecture	4
	Data Structures	4	Object Oriented Programming and Design	4
	Linear Algebra & Optimization	3	Cultural Studies	3
	Creative Thinking	3	Evolution of Design	3
	Total	14	Total	14
Summer Term: Design Project - 5 Units				
III	Algorithm Design	3	Software Design Principles	4
	Critical Analysis of Literature and Cinema	3	Computing and Design	3
	Humanities and Design	3	Statistical Inferences and Applications	3
	Elective	3/4	Elective	3/4
	Total	12/13	Total	13/14
IV	Information Security	3	Capstone Project	15
	Human Computer Interaction	3		
	Elective	3/4		
	Elective	3/4		
	Total	12/14	Total	15

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Offered electives will be made available to enrolled students at the beginning of each semester.

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WHAT IS THE EDUCATION DELIVERY METHODOLOGY?



CLASSROOM SESSIONS

- Classes will be conducted by BITS Pilani faculty over weekends. A typical weekend classroom session per subject is of 1.5-2 hours duration. Since students typically pursue 4 courses in a semester, they will be expected to attend approximately 4 classroom sessions over a weekend. These classroom sessions will be typically scheduled over 16 weekends per semester.
- Classroom sessions for each course will be conducted through live online sessions which can be accessed by the learners from any location using a computer and a high-speed internet connection. Even for courses that will be taught through live online sessions, learners will get an opportunity to interact with expert faculty using interactive, technology-enabled virtual classrooms. These online classrooms offer similar levels of interactivity as regular classrooms.

The schedule of the classroom sessions will be announced at the beginning of each semester.



EXPERIENTIAL LEARNING & LABS

The programme emphasises on Experiential Learning that allows learners to apply concepts learnt in classroom in simulated and real work situations. This is achieved through Simulations, Online Labs, Case Studies, Group Discussions, and Assignments, etc.

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PROJECT WORK

During the final semester participants carryout a semester-long intensive project work applying the various concepts learnt throughout the program guided by the organisation mentor and supervisor. Participants are provided access to virtual labs where applicable, and faculty expertise to support the project work.



DIGITAL LEARNING

Learners can access engaging learning material at their own pace which lecture videos, student notes, curated content etc. for select courses, through a learning management platform that is engaging and mobile-friendly.



EXAMINATIONS & CONTINUOUS ASSESSMENT

The learners' performance is assessed continuously throughout the semester using various tools such as quiz, assignments, mid-semester and comprehensive exams. The assessment results are shared with the learners to improve their performance.

Each course will entail a minimum of 1 Assignment / Quiz, a mid-semester exam and a final comprehensive exam. Your semester calendar will clearly indicate the dates of the mid-semester and comprehensive exams. Typically, a mid-semester or comprehensive examination for a course is of 2-3 hours duration. The examinations are typically conducted over a weekend, i.e. Saturday and Sunday. These exams will be conducted either at the learners' office premises, or at another suitable location. Details regarding the exam location will be communicated at the beginning of the semester.

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WHAT ARE THE ELIGIBILITY CRITERIA?

Trainees / Employed professionals who have completed their 10+2 (in Science stream Including Mathematics and Physics as subjects) or equivalent educational qualification with minimum 60% aggregate marks (including minimum 60% marks each in Mathematics and Physics) and minimum one year of relevant work experience within HCL are eligible to apply.

Note the following exceptions:

1. In case an applicant studied Business Mathematics, it will not be considered

equivalent to having studied Mathematics at 10+2. The type of Mathematics studied by the applicant will be evaluated by the BITS Pilani Admission Cell to ascertain if an applicant meets the eligibility requirements.

2. The above are only the minimum criteria to apply. The final decision to offer admission to an applicant rests with BITS Pilani which will be made based on an overall review of your application information.

FEE STRUCTURE

The following fees schedule is applicable for candidates seeking new admission during the academic year 2023-24.

Application Fees
(one time) :INR 500

Admission Fees
(one time) :INR 5,500

Semester Fees
(per semester) :INR 29,500

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HOW TO APPLY

- ▶ [Click here](#) to visit the Online Application Center. Create your login at the Online Application Center by entering your official HCL Email ID only and create a password of your choice. Once your login has been created, you can anytime access the Online Application Center using your official email ID and password.
- ▶ Begin by clicking on Step 1 - 'Fill/ Edit and Submit Application Form'. This will enable you to select the programme of your choice. After you have chosen your programme, you will be asked to fill your details in an online form. You must fill all details and press 'Submit' button given at the bottom of the form.
- ▶ Now, click on 'Pay Application Fee' to pay INR 500/- using Netbanking/ Debit Card/ Credit Card.
- ▶ Finally, click on 'Upload & Submit All Required Documents'. This will allow you to upload one-by-one all the mandatory supporting documents such academic certificates and transcripts, photograph, etc. and complete the application process. Acceptable file formats for uploading these documents are .DOC, .DOCX, .PDF, .ZIP and .JPEG.
- ▶ Upon receipt of your Application Form and all other enclosures, the Admissions Cell will scrutinise them for completeness, accuracy and eligibility.
- ▶ Admission Cell will intimate selected candidates by email within two weeks of submission of application with all supporting documents. The selection status can also be checked by logging in to the Online Application Centre.

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DISCLAIMER

Ever since it was declared as a Deemed to be University in 1964, BITS Pilani has been offering higher education programmes in science and technology, and has earned an enviable reputation for its innovations in this sphere. The Work Integrated Learning Programmes (WILP) of BITS Pilani constitutes a unique set of educational offerings for working professionals. These programmes, which BITS began to offer in 1979, have, over the years, evolved along the lines envisaged in the National Policy on Education, 1986.

The WILP are rigorous higher education programmes in technology areas, designed keeping the evolving needs of industry in view, and meant for working professionals in their respective domains. The very intent is to deliver the education at the workplace, in order that the greatest degree

of work integration of the education is achieved, and thus the WILP are very distinct in philosophy and pedagogy from open, distance learning programmes. Though it is incorrect and improper, at times the WILP are compared to ODL programmes. Accordingly, it has been our constant endeavor to engage with the regulator, and provide all necessary information about these programmes.

The WILP have been well received, and accepted by industry, because of the high quality of the programmes in terms of the curriculum and the instruction, and also because of the high degree of work integration, which results not only in up gradation of knowledge, but also in up skilling, and productivity increase.

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