



Hindi Vidya Prachar Samiti's

Ramniranjan Jhunjhunwala College

of Arts, Science & Commerce

(Autonomous College)

Affiliated to

UNIVERSITY OF MUMBAI

Syllabus Framework as per LOCF

Program: B.Sc. INFORMATION TECHNOLOGY

Program Code: RJSUIT

(CBCS 2020-21)

Syllabus Framework as per LOCF

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THE PREAMBLE

Why IT?

The world around us is rapidly changing and the change is carried by technology! Information Technology has become the fourth basic need of humans after food, shelter and clothing. Be it buying essentials, connecting to friends and family, online learning or entertainment, IT has become an integral part of our life. IT has really become the '**New Normal**'. The increasing popularity and luxury turning into necessity has created a large number of opportunities in the field of Information Technology.

Information Technology is an application-oriented program where students learn core technologies and apply their skills in developing solutions for different problems in a variety of domains. The applications may lead students to master a niche skill and bag a unique career opportunity. Core technology areas covered are Mathematics, Statistics, Logic, Digital Electronics and Computer Science. To name a few technology areas covered in the UG IT program are– Programming, Digital Logic circuits, Operating Systems, Discrete Mathematics, Database Management systems, Networking, Internet Security, Software Engineering, Embedded Systems, Mobile app development, Project Management, Business Intelligence, GIS etc.

Why IT at R J College?

Department of IT was established in the year 2007-08. Since its inception, IT department has been the center of attention for the vibrant activities and several success stories of their students. Strength of the department is dedicated and experienced faculty members, state of the art laboratories, rich in resource departmental library, hardworking students and a very strong industrial connection. The PG program started in the year 2016 and has received excellent response.

In the journey of 15 years, students of IT department secured top rank in university examinations in both UG and PG programs. Departments of IT and CS jointly have successfully received the DBT Star scheme grant from the Department of Biotechnology (DBT), New Delhi in the year 2018-2019.

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At RJIT, a special attention is given to the overall grooming of the students and making them industry – ready. **SkillUp**, mentor mentee program of the department, facilitates every student to have personal attention from the faculty members, where academic interests and opportunities for the students are discussed on a regular basis. Various options of online learning and certification are discussed with students and they are also mentored about internships available on different authentic platforms.

TechConnect is an initiative of the department where expert alumni members share their expertise and experiences with the students. Focus is given on improving the interpersonal skills of the students through various activities including presentations of case studies and project work. RJIT hosts an intercollegiate techfest, '**Symposium**' every alternate year- where students get a good opportunity to develop leadership qualities, organizing skills and showcase their talent.

Faculty being the core strength of the education system, there have been many collaborations with giants like Patni computers for strengthening our faculty in the past. Faculty members regularly undergo training on different new technologies to keep up with ever changing, dynamic IT field.

Placement of our students is considered most important and they are trained vigorously not only in technical skills but also in communication skill and personality development. A consistent effort from the department, in association with the always proactive placement cell of the college has seen excellent results and our students are placed in most reputed IT companies in India, TCS, Wipro, Capgemini, LTI, Tech Mahindra and Infosys to name a few.

Our Curriculum Your Strength

The Department of IT has been instrumental in incorporating new technologies in the teaching learning process as per the needs and standards of the industry. After receiving autonomy, new tools and techniques are being added, on a regular interval.

The syllabus of the BSc IT program is divided into six semesters and systematically includes

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all aspects of technologies in the field of Information Technology. Semester I and II cover the foundation of most of the technologies covered during the course. Practical components are added with each course, ensuring sound understanding and application of the concepts learnt in theory. A case study or a small project done by the students from time to time ensures thorough knowledge and understanding of the subject.

Value added courses are meticulously designed for the students to gain extra knowledge in new and upcoming technologies. These courses not only make the students rich in knowledge but also give them additional credit points ensuring an edge over other learners.

New practical components like the study of Arduino uno or light weight handy mobile app development using the App inventor make the students agile in the use of latest technologies. The syllabus sees constant upgrade through brainstorming sessions with industry experts and teaching experts from different universities.

We motivate our students and provide them with the required IT infrastructure to learn and explore new technologies. This capability/skill plays an essential role in their career growth in this competitive world of technology.

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Program outcome

Students of all undergraduate degree program at the time of their graduation will acquire skills of -

Critical Thinking

Comprehend the matter they come across and be capable to take a sound viewpoint about things which will highlight their intellectual acumen as well as enable them to look at the world through multiple lenses.

Effective communication

Listen, speak, read and write. They should communicate properly by conveying their thoughts. They will use technology for communication. Will be able to network with people with all available channels. They will be developing communication skills in English, Hindi and a local language would be an added advantage.

Social Interaction

Respect each other and should be able to resolve conflicts and help in reaching amicable solution. They should be able to work in diverse teams. They should be able to distinguish when and what is socially acceptable.

Responsible citizen

Contribute to Nation development through social service. Being empathetic and sympathetic to fellow beings.

Honesty and Integrity, Ethics

Recognize different values and systems and respect them. In decision making moral values should be given prime importance.

Environmental and Sustainability- Environmental issues would be considered and problem solving with sustainable development would be chosen.

Life-Long learning- Enjoy learning in every situation.

Syllabus Framework as per LOCF**Program Specific Outcome B.Sc. Program with Information Technology**

Information Technology has become the new normal in the modern world. All disciplines of learning are supported by Information Technology. Our day-to-day activities are getting rapidly automated. Information Technology plays a vital role in analysis, design and implementation to formulate digitally automated solutions to perform these activities. From use of mobile applications to electronic gadgets, from online ticket reservation to e-commerce; Information Technology is the answer to every challenge.

Information Technology being crucial in all fields, provides a great deal of opportunities. The syllabus is designed, keeping in mind the latest trends and tools used in the industry.

PSO1:	The program will facilitate learners to explore and expertise in different streams of Information Technology, giving them the opportunity to learn new edge technologies.
PSO2:	The learners will be able to understand and build fundamental programming logic and implementation skills and will be able to write programs using trending programming language and techniques as per the industry needs and standards.
PSO3:	The learner will be able to understand the concepts of statistics and will be able to apply skills in data science and business intelligence suits.
PSO4:	The learner will be able to understand and implement basic networks for use of technology and resource sharing. They will also have full knowledge and skills to design databases, software applications, mobile applications and web-based applications
PSO5:	The learner will be able to build hardware tools and automate them using the concepts learned in the areas of "Microprocessor Architecture", "Embedded Systems" and "IOT"

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Table of mapping course learning outcomes to program learning outcomes

PROGRAM OUTCOME	F. Y. B. Sc. - IT																			
	First Year Sem-I										First Year Sem-II									
	RJSUIT101	RJSUIT102	RJSUIT103	RJSUIT104	RJSUIT105	RJSUITP101	RJSUITP102	RJSUITP103	RJSUITP104	RJSUITP105	RJSUIT201	RJSUIT202	RJSUIT203	RJSUIT204	RJSUIT205	RJSUITP201	RJSUITP202	RJSUITP203	RJSUITP204	RJSUITP205
Core Competen cy	√	√	√	√		√	√	√	√		√	√	√	√		√	√	√	√	√
Critical Thinking	√	√		√	√	√	√		√	√	√	√	√	√	√	√	√	√	√	√
Analytical Reasoning	√	√		√		√	√		√		√	√	√	√	√	√	√	√	√	√
Research Skills		√	√	√	√		√	√	√	√		√	√		√		√		√	√
Problem Solving	√	√	√	√		√	√	√	√		√	√	√	√	√	√	√	√	√	√
Team Work		√			√	√	√			√					√			√		√

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PROGRAM OUTCOME	S. Y. B. Sc. - IT																			
	Second Year Sem-III										Second Year Sem-IV									
	RJSUIT301	RJSUIT302	RJSUIT303	RJSUIT304	RJSUIT305	RJSUITP301	RJSUITP302	RJSUITP303	RJSUITP304	RJSUITP305	RJSUIT401	RJSUIT402	RJSUIT403	RJSUIT404	RJSUIT405	RJSUITP401	RJSUITP402	RJSUITP403	RJSUITP404	RJSUITP405
Core Competen cy	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓
Critical Thinking	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Analytical Reasoning	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Research Skills		✓	✓		✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Problem Solving	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Team Work			✓	✓		✓		✓	✓	✓	✓	✓	✓		✓	✓		✓		

PROGRAM OUTCOME	T. Y. B. Sc. - IT																			
	Third Year Sem-V										Third Year Sem-VI									
	RJSUIT501	RJSUIT502	RJSUIT503	RJSUIT504	RJSUIT505	RJSUITP501	RJSUITP502	RJSUITP503	RJSUITP504	RJSUITP505	RJSUIT601	RJSUIT602	RJSUIT603	RJSUIT604	RJSUIT605	RJSUITP601	RJSUITP602	RJSUITP603	RJSUITP604	RJSUITP605
Core Competen cy		✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓
Critical Thinking	✓	✓	✓		✓	✓		✓		✓		✓	✓	✓	✓		✓	✓	✓	✓
Analytical Reasoning		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Research Skills	✓	✓		✓	✓		✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓
Problem Solving	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Team Work	✓	✓	✓			✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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Teaching Learning Process

The teaching learning process in the learning outcome-based curriculum framework in the subject of Information Technology is designed to develop the cognitive skills of every learner. The course offers the requisite skills for a professions and jobs in various IT sectors. All courses have practical as an integral part which promotes the learner to acquire the requisite skills for employment by experiential learning.

Project development is made part of the curriculum, which provides the most needed opportunity for each student to learn in the process of implementation of the project.

An interesting combination of teaching learning processes is adopted in which the teacher and learners are actively involved.

Some of the salient teaching learning processes are

- Class lectures
- Presentations
- Group Discussion, workshops
- Peer teaching and learning
- Flipped classroom, project based learning, quiz, seminars, exhibitions, posters.
- Hands on learning with practical assignments carefully designed
- Technology enabled self-learning
- Internships

The effective teaching strategies would address the requirements of learner to learn at their own pace. The teaching pedagogy adopted to ensure inculcate higher order skills in the learner. The entire program is also designed to foster human values, environmental consciousness for an equable society. The teaching learning processes adopted would aim at participatory pedagogy.