Overview of the BSc Honours in Business Information Systems (BIS) Degree

Program Evolution and History

The rapid development in Information Technology (IT) has enabled business organizations to use IT as a tool to gain competitive advantages. A key ingredient for success is having business professionals who can apply Information Technology effectively in management practices. To meet this national requirement, the industry desires graduates who are armed with appropriate knowledge in both Management and IT disciplines.

To meet this demand, the Faculty of Management Studies and Commerce at the University of Sri Jayewardenepura launched a new Special degree program named B.Sc. in Business Administration (Information Systems) in 2001. This program was the first of its kind in Sri Lanka, combining Management and Information Technology disciplines for students from the Advanced Level commerce stream. To provide the necessary organizational infrastructure, the Department of Information Technology and Decision Sciences (IT & DS) was established.

In December 2007, this department was split into two separate entities: the Department of Information Technology and the Department of Decision Sciences, to facilitate the development of each discipline. Subsequently, the degree offered by the Department of Information Technology was renamed the Bachelor of Science Honours in Business Information Systems. This renaming was done to better reflect the course structure and address evolving market needs.

Aims and Objectives of the Programme

The BSc Honours in Business Information Systems degree program is focused on providing sound theoretical and practical knowledge in the two disciplines of Management and Information Systems. By combining these two prominent fields, the program equips students with cutting-edge business management and information systems skills, enabling them to work, manage, and succeed in any business environment. It has been specially designed to meet the aspirations of students seeking a career in either Management or Information Systems.

Graduate Profile and Attributes

A graduate who successfully completes the BSc Honours in Business Information Systems degree is a unique individual possessing a high level of knowledge in both management and information systems domains. They are distinguished by their diversified knowledge, generic and technical skills, positive attitude, flexibility, adaptability, and a desire for

continuous lifelong learning, making them an ideal choice for today's dynamic organizations.

The attributes of a BIS graduate are based on four main domains of learning. These include:

- **Knowledge:** Graduates will have in-depth subject and practical knowledge in Management and Information Systems applicable in local and global contexts.
- **Skills:** Graduates will develop a variety of generic skills useful for starting and advancing their careers.
- **Attitudes, Values, Professionalism, and Vision for life:** Graduates will develop right thinking, behavior, practices, and future goals.
- **Mind-set and Paradigm:** Graduates will be committed to the ongoing acquisition of new knowledge and skills, making them lifelong learners.

Programme Learning Outcomes (PLOs)

Upon successful completion of this degree, a student will be able to:

- Demonstrate knowledge and understanding of primary business disciplines and the field of information systems.
- Apply subject knowledge to business situations in both local and global environments.
- Communicate information, ideas, and arguments effectively, both orally and in writing.
- Work effectively as both a team leader and a team member.
- Apply theory, analysis, research, and creativity to solve problems and make rational decisions.
- Establish rapport and build collaborative relationships with individuals and groups.
- Apply ethical standards with a sense of responsibility in the workplace and community.
- Set and achieve personal and professional goals.
- Engage constructively with local and international businesses and communities.
- Work independently and manage their own learning over a lifelong career.

Programme Structure and Curriculum

The curriculum for the BSc Honours in Business Information Systems degree is designed to meet the requirements of SLQF Level 6. The study program consists of 127 credits distributed over four academic years and includes both an internship training program and a research study. All students enrolled in the Faculty of Management Studies and Commerce follow a common curriculum in management during their first year to provide core business knowledge. The evaluations are based on several assessment strategies.

Curriculum Breakdown by Semester

Year II - Semester I (Total Credits: 16)

- **ITC 2370: Computer Programming** (Core, 3 Credits)
- **FIN 2370: Financial Management** (Core, 3 Credits)
- **MAR 2370: Marketing Management** (Core, 3 Credits)
- **DSC 2370: Operations Management** (Core, 3 Credits)
- **BEC 2370: Macroeconomics** (Core, 3 Credits)
- **ITC 2171: Personality & Skills Development (PSD) 1** (Core, 1 Credit)

Year II - Semester II (Total Credits: 17)

- **ITC 2372: Business Analytics** (Core, 3 Credits)
- **ITC 2373: Database Design and Development** (Core, 3 Credits)
- **ITC 2374: Systems Analysis and Design** (Core, 3 Credits)
- **ITC 2375: Web-based Application Development** (Core, 3 Credits)
- **BUS 2371: Organizational Behavior** (Core, 3 Credits)
- **BCC 2174: Professional Communication** (Core, 1 Credit)
- **ITC 2176: Personality & Skills Development (PSD) 2** (Core, 1 Credit)

Year III - Semester I (Total Credits: 19)

Core Courses:

- **ITC 3370: Information Technology Infrastructure** (Core, 3 Credits)
- **ITC 3371: Management Information Systems and ERP Applications** (Core, 3 Credits)
- **ACC 3380: Management Accounting** (Core, 3 Credits)

- **ITC 3172: Personality & Skills Development (PSD) 3** (Core, 1 Credit)

Electives (Select Three):

- **ITC 3373: Object Oriented Programming** (Elective, 3 Credits)
- **ITC 3374: Information Technology Project Management** (Elective, 3 Credits)
- **ITC 3375: Software Engineering** (Elective, 3 Credits)
- **DSC 3373: Project Management** (Elective, 3 Credits)
- **DSC 3371: Data Analysis for Managers** (Elective, 3 Credits)
- **DSC 3370: Operations Research** (Elective, 3 Credits)

Year III - Semester II (Total Credits: 19)

Core Courses:

- **ITC 3376: Enterprise Architecture** (Core, 3 Credits)
- **ITC 3377: Digital Business Management and Enterprise Applications** (Core, 3 Credits)
- **ITC 3378: Research Methodology** (Core, 3 Credits)
- **ITC 3179: Personality & Skills Development (PSD) 4** (Core, 1 Credit)

Electives (Select Three):

- **ITC 3380: Programming applications and Frameworks** (Elective, 3 Credits)
- **ITC 3381: Software Quality Assurance #** (Elective, 3 Credits)
- **ITC 3382: Information Systems Auditing and Control** (Elective, 3 Credits)
- **ITC 3383: User Experience Engineering** (Elective, 3 Credits)
- **ENT 3384: Managing Creativity and Innovation** (Elective, 3 Credits)
- **DSC 3381: Supply Chain Management** (Elective, 3 Credits)

Year IV - Semester I (Total Credits: 12)

Core Course:

- **BUS 4370: Strategic Management** (Core, 3 Credits)

Electives (Select one 6-credit and one 3-credit course):

- **ITC 4670: Research Study in Information Systems** (Elective, 6 Credits)
- **ITC 4671: Information Systems Development Research Project *** (Elective, 6 Credits)
- **ITC 4372: Professional Ethics and ICT Law** (Elective, 3 Credits)
- **ITC 4373: Advanced Enterprise Resource Planning Systems** (Elective, 3 Credits)
- **ITC 4374: Virtualization and Cloud Computing** (Elective, 3 Credits)
- **ITC 4375: Artificial Intelligence Applications** (Elective, 3 Credits)

Year IV - Semester II (Total Credits: 12)

Core Courses:

- **ITC 4676: Internship in Information Systems** (Core, 6 Credits)
- **ITC 4377: Business Process Management** (Core, 3 Credits)

Elective (Select One):

- **ITC 4378: Advanced Business Analytics** (Elective, 3 Credits)
- **ITC 4379: Information Systems Security & Risk Management** (Elective, 3 Credits)
- **BUS 4376: Organizational Change and Development** (Elective, 3 Credits)

(Note on Pre-requisites: The elective '# Software Quality Assurance' requires prior completion of 'Object Oriented Programming' (ITC3373) and 'Software Engineering' (ITC3375). The '

Information Systems Development Research Project' requires prior completion of 'Object Oriented Programming' (ITC3373), 'Software Engineering' (ITC3375), and 'Programming applications and frameworks' (ITC3380).)*

Course Descriptions

ITC 2370: COMPUTER PROGRAMMING This course provides the basics of programming for business applications, covering essential concepts like variables, data types, control statements, loops, functions, and arrays to develop algorithmic thinking.

ITC 2171: PERSONALITY & SKILLS DEVELOPMENT (PSD) 1 This is an introductory, activity-based course focusing on developing fundamental soft skills to help students build strong personalities, maintain better interactions, improve communication, and build confidence.

ITC 2372: BUSINESS ANALYTICS This course provides knowledge on Business Analytics, covering how to transform data into actions by framing business problems, selecting data and methodologies, and building models to offer innovative solutions.

ITC 2373: DATABASE DESIGN AND DEVELOPMENT This course provides specialized knowledge and skills in designing and developing databases, covering the development process, modeling techniques, and data administration, with practical exposure to current database management systems.

ITC 2374: SYSTEMS ANALYSIS AND DESIGN This course provides knowledge and skills to analyze business problems and design information systems using structured and object-oriented techniques, including data and process modeling with UML. A practical component using Microsoft Visio is included.

ITC 2375: WEB-BASED APPLICATION DEVELOPMENT A specialized course providing comprehensive knowledge on developing web-based applications, covering both theory on internet communication and fundamentals, and practical skills for designing effective web pages and applications.

ITC 2176: PERSONALITY & SKILLS DEVELOPMENT (PSD) 2 This second PSD course uses an activity-based approach to sharpen interpersonal and intrapersonal skills, teaching students how to work in teams, be adaptable, and develop their personal portfolio.

ITC 3370: INFORMATION TECHNOLOGY INFRASTRUCTURE This course provides knowledge on key IT infrastructure elements like computing and networking infrastructure, which are essential for the operation of Information Systems that organizations increasingly rely on.

ITC 3371: MANAGEMENT INFORMATION SYSTEMS AND ERP APPLICATIONS This course provides hands-on experience with ERP systems and knowledge on how information systems and technology affect individuals, businesses, and society, equipping students to become effective managers.

ITC 3172: PERSONALITY & SKILLS DEVELOPMENT (PSD) 3 This third PSD course is designed to increase student success by providing a better understanding of business conversations, personal grooming, social etiquette, creativity, negotiation, and conflict resolution.

ITC 3373: OBJECT ORIENTED PROGRAMMING This course offers in-depth knowledge of object-oriented programming, covering advanced concepts like user-defined classes, inheritance, polymorphism, and GUI applications through theoretical and practical modules.

ITC 3374: INFORMATION TECHNOLOGY PROJECT MANAGEMENT This course teaches how to apply project management theories and techniques to IT projects, based on the project management framework and its knowledge areas like scope, time, cost, and risk management.

ITC 3375: SOFTWARE ENGINEERING This specialized course focuses on the principles of software engineering for constructing large-scale software systems, covering topics like software life cycle models, requirement analysis, design, testing, and maintenance.

ITC 3376: ENTERPRISE ARCHITECTURE This course focuses on the interrelationships between enterprise goals, data, applications, and technology, exploring the design, selection, and management of enterprise IT solutions using frameworks like TOGAF and COBIT.

ITC 3377: DIGITAL BUSINESS MANAGEMENT AND ENTERPRISE APPLICATIONS This course equips future managers with the knowledge to navigate their organization towards digital business by analyzing markets and deploying innovative digital technologies and ERP systems.

ITC 3378: RESEARCH METHODOLOGY This course provides knowledge on how quantitative, qualitative, and design science methods are used in Information Systems research, teaching students how to formulate research questions, conduct literature reviews, and analyze data.

ITC 3179: PERSONALITY & SKILLS DEVELOPMENT (PSD) 4 The final PSD course helps students plan their future careers by providing guidance on facing interviews, developing convincing CVs, and improving public speaking, teamwork, and leadership skills.

ITC 3380: PROGRAMMING APPLICATIONS AND FRAMEWORKS This course provides practical knowledge on contemporary application development frameworks, including those for mobile development, and demonstrates how development teams collaborate using CASE tools.

ITC 3381: SOFTWARE QUALITY ASSURANCE # This course discusses the fundamentals of SQA, aiming to prevent and detect software errors early through principles of testing, test design techniques, and automation testing frameworks, with practical sessions from industry experts.

ITC 3382: INFORMATION SYSTEMS AUDITING AND CONTROL This course provides knowledge on the risks that may impact Information Systems and how they can be managed by controls, giving students familiarity with IS Audit Procedures as per assurance practices.

ITC 3383: USER EXPERIENCE ENGINEERING This course delivers in-depth, skill-based knowledge on designing user interfaces and enhancing user experience, covering principles of interaction design, UX fundamentals, and visual design to create usable applications.

ITC 4670: RESEARCH STUDY IN INFORMATION SYSTEMS This course requires students to conduct an independent, in-depth research study in an area related to information systems under the close supervision of a faculty member.

ITC 4671: INFORMATION SYSTEMS DEVELOPMENT RESEARCH PROJECT * In this course, students identify a real-world problem that can be solved by applying their Information System Design and Development skills, enhancing their abilities in analysis, design, development, and quality assurance.

ITC 4372: PROFESSIONAL ETHICS AND ICT LAW This course educates students on the responsibilities of computer professionals and provides the necessary knowledge to face ethical challenges and make critical decisions while understanding the legal aspects of IT.

ITC 4373: ADVANCED ENTERPRISE RESOURCE PLANNING SYSTEMS This course equips students with knowledge of ERP systems to recognize their need and integrate business activities, covering ERP technology, process mapping, and key functionalities like financial, supply chain, and human capital management.

ITC 4374: VIRTUALIZATION AND CLOUD COMPUTING This course provides a practical exposure to the management of cloud resources, introducing major concepts in cloud computing and how virtualization creates cloud infrastructure, with hands-on skills in managing IaaS offerings.

ITC 4375: ARTIFICIAL INTELLIGENCE APPLICATIONS This course introduces AI applications for problem-solving, covering topics like knowledge representation, reasoning, pattern recognition, fuzzy logic, and neural networks, with hands-on experience to create awareness of applying AI in business.

ITC 4676: INTERNSHIP IN INFORMATION SYSTEMS This internship provides students an opportunity to apply classroom knowledge in a real work setting, working closely with Organisational Information Systems under the guidance of both an external and internal supervisor.

ITC 4377: BUSINESS PROCESS MANAGEMENT An advanced course dealing with aligning organization objectives with client needs, covering theories like Six Sigma and Business Process Reengineering (BPR), and providing a methodology to implement BPM.

ITC 4378: ADVANCED BUSINESS ANALYTICS This course gives learners practical skills in using prescriptive data analytics models to extract and manipulate data, suggesting decision options to take advantage of opportunities or mitigate risks through mathematical modeling and simulation.

ITC 4379: INFORMATION SYSTEMS SECURITY & RISK MANAGEMENT This course deals with securing information assets by maintaining their confidentiality, integrity, and availability, discussing the technologies, controls, and mechanisms needed to safeguard against risks.

Teaching, Learning, and Assessment

The study program utilizes a variety of teaching and learning strategies to be effective, including large and small group teaching, demonstrations in computer labs, team-based learning, case studies, role-plays, problem-based learning, and work-based learning through industrial training. Student performance is measured using several assessment strategies such as mid-semester and end-semester examinations, group work, presentations, dissertations, software projects, and continuous assessments.

Practical Training and Professional Links

Practical training is a compulsory component of the degree, allowing students to gain work experience during their final year. The aim is to expose them to a working environment where they can apply theoretical knowledge, develop skills, and gain experience.

The department maintains strong professional links, including a Memorandum of Understanding with Microsoft Sri Lanka (Pvt) Ltd., which provides students with selected Microsoft software free of charge for research purposes under the Microsoft Developer Network Academic Alliance Programme. The department also maintains close links with other private sector organizations for industrial placements and with key professional associations in the IT industry.

Employment Opportunities

Graduates have two main career avenues: the information systems field or the general management field. Those opting for a career in information systems can expect positions such as Business Analyst, Systems Analyst, IS Manager, IT/ERP Consultant, Quality Assurance Manager, or Project Manager. With further enhancement of IT skills, positions like Software Engineer, Database Administrator, and Network Administrator become accessible. Graduates who prefer general management can find positions in functional areas like Accounting, Marketing, Finance, or Human Resource Management, where their logical thinking and IT application skills will be an advantage.

Awards, Scholarships, and Student Activities

Microsoft Sri Lanka (Pvt) Ltd. awards a gold medal at the convocation to the student with the highest GPA over the entire degree program. Scholarships can be arranged for students with financial difficulties upon their request.

The department organizes the

Business Information Systems Student Symposium (BISSS), an annual event to promote research and development capabilities among students and encourage collaboration between students, staff, and industry.

The

Student Association of Information Technology (S@IT) organizes the annual Design-a-thon competition named **D-HACK**. This event was initiated to improve students' innovative capabilities in business and UI/UX development and has since been extended to the entire university. It provides a platform for students to make their innovative ideas a reality.

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Alumni Association of the Department of Information Technology was formed in 2014 for graduates of the department. Its objectives are to create and maintain a good relationship between alumni, the department, and the corporate sector.

Facilities and Contact Details

The Department of Information Technology is located at the Soratha Building. The department office is well-equipped to support both lecturers and students, and each staff member has their own room for study, research, and meetings. Students have access to a resource centre for group activities and a dedicated Computer Lab with thirty state-of-the-art workstations for their exclusive use for software development, internet access, and research.

For inquiries, the Department of Information Technology can be reached at University of Sri Jayewardenepura, Gangodawila, Nugegoda, Sri Lanka. The telephone is +94 112802069, the E-mail is office.it@sjp.ac.lk, and the website is mgt.sjp.ac.lk/itc.