Why study Information Systems at the Sarajevo School of Science and Technology?

The Master’s Programme in Information Systems curriculum brings together business and technology education with intention to prepare students for careers as business technologists, and underlines the importance of the interconnections across technology and business management. Information Systems department research focuses on the development and use of information technologies in organizational contexts, due to the fact that organizations around the world have become increasingly dependent on the rapidly evolving set of information, computing, and telecommunications technologies. This dependence is so great that the average organization today spends about 4% of its revenue on IT, and this figure seems to be increasing, not decreasing.

Required Courses

The Master program, starting in October 2014, is run by the Information Systems department at SSST in collaboration with SSST’s partner, the University of Buckingham in the United Kingdom. The duration of the programme is four semesters (two years). Students will be required to take eight courses in total with two courses per semester (total number of ECTS for all courses: 64) and produce a research-based thesis (total number of ECTS for thesis: 56). After successful completion of all coursework and thesis submission (including an oral defense), students will be awarded a Masters of Science degree in Information Systems by both the SSST and the University of Buckingham (total number of ECTS: 120).

Courses:

- Business Process Modeling
- Object Oriented and Agile Approach to Systems Analysis and Design
- Business Analytics and Business Intelligence
- Advanced Procedural Database Programming
- Geographic Information Systems
- Enterprise Systems
- Health Informatics
- Information Systems Security
Teaching and Assessment

Each course will meet once a week for 2.5 hours over a 15-week period. During each week students will learn and critically engage with different types of materials such as academic papers, lectures, movies, case-studies, students’ presentations etc. Students will be assessed on several components (written assignments-term papers; presentations; debates; case-study analysis; final exams; and a research-based thesis).

Research Topics

During the program students will have to choose one topic of their interest for which they will produce a research-based master dissertation. Possible research topics include but are not limited to the following areas:

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<tr>
<th>Research Area: Business Process Modeling</th>
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<td>Business process modelers are mainly focused on how to create representations of business processes which can be translated to computer software and still remain understandable to business stakeholders. However in practice, business process models rarely meet these high demands. Sometimes models are too informal to be interpreted by a computer or beyond understanding to business stakeholders. This research topic aims at underlining the need to link the description of business problem with information systems modeling, and assess why these problems occur and whether it is fundamentally feasible to create models that meet these demands.</td>
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<th>Research Area: Comparative Study of Systems Analysis and Design Techniques</th>
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<td>Different methods for object oriented systems analysis have recently emerged and keep appearing since the area is still evolving. Although for some methods well documented real-world projects experience exist, software managers are still facing a difficult task when trying to select the best method. This research topic aims at evaluating recently published object-oriented methods to identify truly innovative contributions, and recognize advantages and weaknesses of each method.</td>
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<th>Research Area: Business Analytics and Business Intelligence</th>
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<td>Business analytics is a hot topic, and the business press is full of examples of leading organizations competing better through analytics. In fact, a study by researchers at MIT and Wharton finds that “firms that adopt data-driven decision making have output and productivity that is 5-6% higher than the competition.” Extracting meaningful, actionable insight from corporate business systems is not option—it is a requirement in order to compete effectively. Those organizations that adopt a data-driven decision making culture are those best enabled to compete. [Oracle] This research topic aims at extracting meaningful insights from business systems in order to model outcomes, run what-if scenarios, design easy-to-read dashboards and reports, visualize data, integrate diverse corporate sources of information into an enterprise view, and make it accessible on the mobile platforms.</td>
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<th>Research Area: Automatic Database Tuning and Administration</th>
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<td>In recent years, with the commercialization of large-capacity storage devices, hardware cost significantly decreased and emergence of numerous applications (eg. social networks, large enterprise companies) business started capturing large amounts of different types of data (text, sound, images, video, etc.) thus providing opportunities for a multimedia computer processing and application. Due to the low cost of hardware, human labor significantly dominates cost of improving the performances on a given query workload. This research topic aims at reducing cost of database tuning by providing automated processes for database tuning and administration.</td>
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### Research Area: Optimizing Indexes and Queries for Retrieving Spatio - Temporal Databases

The emergence of applications for tracking moving objects (eg. mobile computing, flight control systems, etc.) made spatio-temporal databases very important now days. Those applications need to store into database data with spatial and temporal characteristics, but managing spatio-temporal behavior with RDBMS systems turns to be too complex and in-efficient task. This research topic aims at combining the spatial and temporal data models with the traditional RDBMS systems in order to develop new techniques to manage spatio-temporal information systems.

### Research Area: Challenges in Implementing Enterprise Resource Planning (ERP) system in Large Organizations

Enterprise resource planning is business process management software that allows an organization to use a system of integrated applications to manage the business and automate many back office functions related to technology, services and human resources. ERP software integrates all facets of an operation, including product planning, development, manufacturing, sales and marketing. ERP software is considered an enterprise application as it is designed to be used by larger businesses and often requires dedicated teams to customize and analyze the data and to handle upgrades and deployment [Webopedia]. Despite ERP’s promises to benefit companies and a substantial capital investment, not all ERP implementations have successful outcomes. This research topic aims at identifying, understanding and resolving the main risk factors when implementing enterprise systems.

### Research Area: Dental Insurance Information Systems

Improving and maintaining dental health of the population is considered as a part of the entire health care system in any country. Dental health care in BiH is organized through the two sectors: insurance funded public health services and private practice. Dental insurance is designed to pay a portion of the costs associated with dental care. Unfortunately, the public sector is has no sufficient resources (human, financial and material) to meet the needs for dental health care services while private sectors in too expensive and remains affordable only for some. This research topic aims at creating an information system to manage the network of private dental care providers and offer services to larger segment of the population at low monthly fee.

### Research Area: Information Systems Security

Information Systems Security is a well-known and increasing concern affecting all areas of society, given that all organizations became increasingly dependent on various software systems, sometimes having a critical mission for the enterprises. Facing the potential losses businesses and organizations that rely on all these hardware and software systems have have invested resources to properly secure their information systems from the outset. In order to understand how well the systems are protected a set of metrics have to be introduced. This research topic aims at examining to what extent information security metrics are used, how they are used in the large business in BiH and how organizations benefit from it. Result of the research will help organizations to improve their security management capabilities and attain and sustain an adequate level of security.
**Tuition and Fees**

Tuition and fees are **5200 EUR** per academic year, including all required text books and reading material.

**Requirements**

Bachelor degree in the information systems or computer science.

Demonstrated proficiency in English (minimum requirement level 5).

**Admission**

The application process is open until September 11\(^{st}\), 2015. We strongly encourage early application.

Applications received after the deadline will be considered on a space-available basis.

Please contact Ms. Anela Lemes at admissions@ssst.edu.ba or anela.lemes@ssst.edu.ba regarding the application process.

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**DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION SYSTEMS**

[www.ssst.edu.ba](http://www.ssst.edu.ba)

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