RIT CROATIA

Information Technology
Undergraduate program
course description

Study Abroad
Academic year 2016/2017
at Zagreb campus
Dear students please find on the following pages sample of course descriptions for Information Technology program, offered at RIT Croatia, Zagreb campus in the Freshmen year.

*This is a sample of how your schedule would look like if you enroll in Fall or Spring semester of your Freshman year (please note that you will work individually with your academic advisor on creating your study plan):

<table>
<thead>
<tr>
<th>Term: Fall 1</th>
<th>Check course classification(s)</th>
<th>Term: Spring 1</th>
<th>(Check course classification(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Number &amp; Title</td>
<td>CR</td>
<td>LAS</td>
<td>Maj</td>
</tr>
<tr>
<td>ISTE-120 Comp Prob Solving - Info Domain 1</td>
<td>4</td>
<td>X</td>
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<tr>
<td>ISTE-140 Web 1</td>
<td>3</td>
<td>X</td>
<td></td>
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<tr>
<td>LAS Perspective 1 (Ethical)</td>
<td>3</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>ACSC-010 Year One Seminar</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GE Elective</td>
<td>3</td>
<td>X</td>
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</tr>
<tr>
<td>Term credit total:</td>
<td>17</td>
<td>14</td>
<td>3</td>
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</tbody>
</table>

**Course numbering:** RIT courses are generally referred to by their alphanumeric registration label. The four alpha characters indicate the discipline within the college. The final three digits are unique to each course and identify whether the course is noncredit (less than 099), lower division (100-299), upper division (300-599), or graduate level (600 and above).

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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
<th>Credits</th>
<th>Class hours</th>
<th>Lab hours</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISTE-120</td>
<td>Computer Problem Solving for the Information Domain I</td>
<td>This is the first course in the introductory programming sequence required for all Information Technology students. Topics include elementary data types, arithmetic and logical operations, control structures and error handling, methods, inheritance, reusability, input/output and an object-oriented programming design and implementation. Emphasis is placed on the development of problem-solving skills. Moderately large programming assignments are required. This course will provide students with the foundational skills necessary to do object-oriented programming. Emphasis is placed on program design methodologies and problem solving using commonly available development tools. <strong>Credits 4, Class hours 4, Lab hours 0, Fall</strong></td>
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<tr>
<td>ISTE-190</td>
<td>Foundations of Modern Information Processing</td>
<td>Computer-based information processing is a foundation of contemporary society. This course provides an overview of modern information processing technologies, applications, practices and trends. An emphasis is placed on how these technologies shape information environments and how participants in these environments are able to access, process, and use data and information. Computing at scale is a pervasive course theme. Topics include computing system fundamentals, models for organizing data and information, data exploration and knowledge discovery, Internet and the Web, social computing, information security and privacy, and current trends and futures. <strong>Credits 3, Class hours 3, Lab hours 0, Fall</strong></td>
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</tr>
<tr>
<td>NMDE-111</td>
<td>New Media Design Digital Survey</td>
<td>This project-based course is an investigation of the computer as an illustrative, imaging, and graphical generation tool. It develops foundational design skills in raster and vector image creation, editing, compositing, layout and visual design for online production. Emphasis will be on the application of visual design organization methods and principles for electronic media. Students will create and edit images, graphics, layouts, and typography to form effective design solutions for online delivery. In general, after completing this course, students should: introduce the fundamental creative principles for generating digital content and designs that communicates concise and impactful visual messages; understand the technical principles and tools of digital graphics; introduce principles and methods of visual organization, design and graphic analysis; develop skills that allow the student to decide the best options to generate and output content for digitally based imagery and design; develop visual solutions using observational drawing, sketching, image manipulation as well as photographic techniques and imagination; develop solutions that reflect semiotic concerns of effective communication including aesthetic considerations, appropriate concept development and pragmatic concerns; understand the ethics and copyright issues of digital graphics. <strong>Credits 3, Class hours 2, Lab hours 3, Fall</strong></td>
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<tr>
<td>MATH-131</td>
<td>Discrete Mathematics</td>
<td>This course in an introduction to the topics of discrete mathematics, including number systems, sets and logic, relations, combinatorial methods, graph theory, regular sets, vectors, and matrices. Goals of the Course: to provide students with knowledge of the mathematical concepts needed for understanding and analyzing programming; to discuss the many applications of mathematics to computer science and computer</td>
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</table>
information systems; to stress the applications of theorem results in Information Technology. **Credits 4, Class hours 4, Lab hours 0, Fall**

### UWRT-100 Critical Reading and Writing

This course is designed to help students improve their critical thinking, reading, and writing skills. Through oral and written presentations, lectures and discussion students will analyze, interpret and evaluate materials from various disciplines. They will discover different methods used by authors in their process of writing. By exploring different genres students learn how writers employ the basic features and strategies of a genre to reflect different rhetorical purposes. Through writing assignments students will develop strategies for creative writing, generating ideas, and revising. Through Peer Response Groups students will learn to critique their own and others’ works in order to become a more independent and competent reader and writer. They will practice appropriate means of documenting their work. Students will master syntax, grammar, punctuation, and spelling feature in an applied way: they will have to immediately apply various structures in conversation or written/oral exercises. The instructor will also organize at least once in a semester writing labs, where students will be correcting each other thus learning from each other’s mistakes. **Credits 3, Class hours 3, Lab hours 0, Fall**

### ACSC-010 Year One

YearOne Seminar is a course for first-year students designed to provide an introduction to college life and to support you as you adjust to your life at RIT Croatia. YearOne meets once per week for 12 weeks during the Fall semester. It includes lecturing, classroom discussions, and many guest speakers from the Zagreb, Dubrovnik, and Rochester campuses and will introduce you to many RIT resources. **Credits 0, Class hours 3, Lab hours 0, Fall**

### ISTE-121 Computational Problem Solving for the Information Domain II

This is the second course in the introductory programming sequence required for all students majoring in Information Technology. Topics include GUI interface development; file I/O, traditional programming data structures, programming utilities and reusability, introductory project design and management concepts and other concepts as time permits. Emphasis is placed on the development of problem-solving skills. Large programming assignments are required. The purpose of this course is to provide students with an introduction to the advanced concepts and skills needed to support the programming requirements of up-stream courses in the IST curriculum. Specifically, this course is intended to encourage students to continue to develop their problem solving skills, to begin building a “logical toolkit” of algorithms and data structures, and to understand the benefits of reusability. Students should also grasp the basics of program analysis, design and project management skills. **Credits 4, Class hours 4, Lab hours 0, Spring**

### ISTE-140 Web & Mobile 1

This class provides an introduction to key Internet, web, and multimedia technologies, as well as familiarity with the Macintosh computer platform. Topics covered include computer-mediated communication, basic Internet applications such as telnet, FTP, and the WWW, basic digital image techniques, and web page development and publishing. This course provides a basic introduction to Internet technologies and web
development. The Internet technology topics (UNIX, FTP, Telnet, email, protocols, etc.) provide a foundation for a variety of IT core courses. The web development and imaging topics provide an introduction to the multimedia and web development topic area within the department, and are a prerequisite for concentration-level courses in the computer-mediated experience area of the curriculum. Credits 3, Class hours 3, Lab hours 0, Spring

MATH-161 Applied calculus
A course stressing applications of calculus concepts to solving problems in business and Allied Health. Topics include the limit concept, differentiation, partial differentiation, and integration. To have students learn the basic definitions, concepts, rules, vocabulary, and mathematical notation of calculus. To provide students with the necessary manipulative skills required for solving problems in calculus. To provide an opportunity for students to obtain a background in mathematics necessary to a study of business, economics and medical sciences. Credits 4, Class hours 2, Lab hours 0, Spring

ISTE-230 Databases and data modelling
A presentation of the fundamental concepts and theories used in organizing and structuring data. Coverage includes the data modeling process, basic relational model, normalization theory, relational algebra, and mapping a data model into a database schema. Structured Query Language is used to illustrate the translation of a data model to physical data organization. Modeling and programming assignments will be required. Provide students with the foundation skill set required to organize and to structure data for subsequent computer processing. The skill set includes the ability to interpret Entity-Relationship data models, to translate an Entity-Relationship data model into a theoretical data model, to apply normalization theory. Credits 3, Class hours 3, Lab hours 0, Spring

PHIL-101 Introduction to Philosophy
An introduction to some of the major problems, methods and insights of philosophy with readings from both classical and contemporary sources. Satisfies a Liberal Arts core requirement. Course objectives are: to help the student develop the habit of careful analysis and critical evaluation of beliefs; to help the student become aware of the importance of basic assumptions in his thinking and acting; to help the student become aware of some of the philosophical assumptions he ordinarily makes; to encourage the student to examine those assumptions critically in light of the reasons or evidence that could be offered both for and against them; to make the student aware of alternative assumptions he might make together with reasons for choosing or rejecting them; to encourage the student to develop a more reasonable and coherent view of himself or herself in relation to others and to the universe in which he or she lives; to acquaint the student with some of the major philosophers. Credits 3, Class hours 3, Lab hours 0, Spring
YEAR 2

Dear students please find on the following pages sample of course descriptions for Information Technology program, offered at RIT Croatia, Zagreb campus in the Sophomore year.

*This is a sample of how your schedule would look like if you enroll in Fall or Spring semester of your Sophomore year (please note that you will work individually with your academic advisor on creating your study plan):

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<table>
<thead>
<tr>
<th>Term: Fall 2</th>
<th>Check course classification(s)</th>
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<th>CR</th>
<th>LAS</th>
<th>Maj</th>
<th>New</th>
<th>Prerequisite(s)</th>
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<tr>
<td>NSSA-290 Networking Essentials for Developers</td>
<td>3</td>
<td>X</td>
<td>ISTE-121</td>
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<tr>
<td>ISTE-240 Web II</td>
<td>3</td>
<td>X</td>
<td>ISTE-140, ISTE-121</td>
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<tr>
<td>ISTE-260 Designing the User Experience</td>
<td>3</td>
<td>X</td>
<td>ISTE-140</td>
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<tr>
<td>STAT-145 Introduction to Statistics I</td>
<td>3</td>
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<td>LAS - Perspective 3 (Global)</td>
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<tr>
<td>ISTE-340 Client Programming</td>
<td>3</td>
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<td>ISTE-240</td>
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<tr>
<td>STAT-145 Introduction to Statistics II</td>
<td>4</td>
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<td>STAT-145</td>
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<tr>
<td>SWEN-383 Software Design Principles</td>
<td>3</td>
<td>X</td>
<td>ISTE-230</td>
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<tr>
<td>ISTE-330 Database Connectivity and Access</td>
<td>3</td>
<td>X</td>
<td>ISTE-230</td>
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<tr>
<td>LAS Immersion 1</td>
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<td>Term credit total</td>
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</table>
ISTE- 240  Web & Mobile II
This course builds on the basics of web page development that are presented in Web I and extends that knowledge to focus on theories, issues, and technologies related to the design and development of web sites. An overview of web design concepts, including usability, accessibility, information architecture, and graphic design in the context of the web will be covered. Introduction to web site technologies, including HTTP, web client and server programming, and dynamic page generation from a database also will be explored. Development exercises are required. (Prerequisite: ISTE-120 & ISTE-140, Co-requisite: ISTE-260). Credits 3, Class hours 3 Lab hours 0, Fall

ISTE- 260  User Experience
The user experience is an important design element in the development of interactive systems. This course presents the foundations of user-centered design principles within the context of human-computer interaction (HCI). Students will explore and practice HCI methods that span the development lifecycle from requirements analysis and creating the product/service vision through system prototyping and usability testing. Leading edge interface technologies are examined. Group-based exercises and design projects are required. Credits 3, Class hours 3, Lab hours 0, Fall

STAT- 145  Introduction to Statistics 1
This course will study the statistical methods of presenting and analyzing data. Topics covered include descriptive statistics and displays, random sampling, the normal distribution, confidence intervals, and hypothesis testing. The statistical software MINITAB is used to reinforce these principles and to introduce the use of technology in statistical analysis. This is a general introductory statistics course and is intended for a broad range of programs. Note: This course may not be taken for credit if credit is to be earned in STAT-205. (MATH-101 College Algebra or equivalent). Goals of the Course are: to have students learn the basic definitions, concepts, rules, vocabulary, and mathematical notation of Data Analysis; to provide students with the necessary manipulative skills required for solving problems; to provide an opportunity for students to obtain a background in mathematics necessary to a study of business, economics and medical sciences. Credits 3, Class hours 3, Lab hours 0, Spring

MLGR- 201  Beginning German I
This is the first course in a two-course sequence. The sequence provides students without prior exposure to the language with a sound basis for learning German as it is used today in its spoken and written forms. The goal of the sequence is proficiency in communication skills with an emphasis on oral proficiency. The sequence also acquaints students with contemporary culture and life in the German-speaking countries. Students must take a placement exam if this is their first RIT class in German and they have some prior study of German. The primary aim of this course is to provide students with a sound basis for learning to communicate effectively and accurately in German as it is spoken and written today. Practice is given in all four basic skills - listening, speaking, reading, and writing – with many opportunities for student-student interaction and self-expression in realistic situations. A second important aim of the course is to introduce students to contemporary life and culture in German speaking countries. Credits 4, Class hours 4, Lab hours 0, Fall
Beginning Italian I
This is the first course in a two-course sequence. The sequence provides students without prior exposure to the language with a sound basis for learning Italian as it is used today in its spoken and written forms. The goal of the sequence is proficiency in communication skills with an emphasis on oral proficiency. The sequence also acquaints students with contemporary culture and life in the Italian-speaking countries. Students must take placement exam if this is their first RIT class in Italian and they have some prior study of Italian. The primary aim of this course is to provide students with a sound basis for learning to communicate effectively and accurately in Italian as it is spoken and written today. Practice is given in all four basic skills - listening, speaking, reading, and writing – with many opportunities for student-student interaction and self-expression in realistic situations. A second important aim of the course is to introduce students to contemporary life and culture in Italy and Italian speaking countries. Credits 4, Class hours 4, Lab hours 0, Fall

Beginning Spanish I
This course introduces the Spanish language and the culture of Hispanic countries to beginners, and provides a basic foundation in all skills in Spanish (speaking, listening, reading, writing, culture) through intensive practice in a variety of media. Language work progresses from autobiographical information, through the present tense, to preliminary work in the past tenses. Students must take placement exam if this is their first RIT class in Spanish and they have some prior study of Spanish. The primary aim of this course is to provide students with a sound basis for learning to communicate effectively and accurately in Spanish as it is spoken and written today. Practice is given in all four basic skills - listening, speaking, reading, and writing – with many opportunities for student-student interaction and self-expression in realistic situations. A second important aim of the course is to introduce students to contemporary life and culture in Spain and Spanish speaking countries. The dialogues, readings, and cultural notes have been written to depict what life is like there today. Credits 4, Class hours 4, Lab hours 0, Fall

Beginning French I
This is the first course in a two-course sequence. The sequence provides students without prior exposure to the language with a sound basis for learning French as it is used today in its spoken and written forms. The goal of the sequence is proficiency in communication skills with an emphasis on oral proficiency. The sequence also acquaints students with contemporary culture and life in French-speaking countries. Students must take placement exam if this is their first RIT class in French and they have some prior study of French. The primary aim of this course is to provide students with a sound basis for learning to communicate effectively and accurately in French as it is spoken and written today. Practice is given in all four basic skills - listening, speaking, reading, and writing – with many opportunities for student-student interaction and self-expression in realistic situations. A second important aim of the course is to introduce students to contemporary life and culture in French speaking countries. The dialogues, readings, and cultural notes have been written to depict what life is like in French speaking countries today. Credits 4, Class hours 4, Lab hours 0, Fall
**SWEN- 383 Software Design Principles and Patterns**

SWEN-383 Software Design Principles & Patterns Quality software designs and architectures reflect software engineering principles that represent best contemporary practice. This course focuses on explicating these fundamental principles, examining a set of design and architecture patterns that embody the principles, and applying patterns appropriate to a design problem in a given context. Not open to those taking SWEN-262. (ISTE-330, ISTE-340, coreq: ISTE-341) **Class 3, Credit 3, Fall**

**ISTE- 340 Client Programming**

The goal of this course is to explore the issues involved in the design and implementation of client-side programming – both web and desktop application based. Topics include standards, browser and Document Object Model manipulation issues, design and deployment of both Web-based and desktop-based clients targeting multiple browsers, operating systems, and platforms. Use of specific Application Programming Interfaces and libraries where appropriate. The course will focus in the design, development, and implementation of usable, effective clients and client interfaces, both desktop and mobile, using multiple technologies. This course will explore the analysis, design, development, and implementation of client-side programming in the context of Internet technologies, mobile devices, Web-based client systems and desktop applications. Students will learn to design and build usable and effective interactive systems, clients, and interfaces. Key features addressed will include browser and platform compatibility, object reusability, bandwidth and communications issues, development environments, privacy and security, and related technologies and APIs. Programming is required. **Credits 3, Class hours 3, Lab hours 0, Spring**

**NSSA- 290 Network Essen for Developers**

This is a course in the basics of network communication for software developers. Topics will include the OSI 7-layer model and its realization in the TCP/IP protocol stack. Students will also learn about naming and name resolution as it is used in the internet, plus the basics of routing and switching. The focus in all of this will be on an analysis of how name resolution, routing and switching operate from the developer's perspective. The specifics of how the socket transport layer appears to the programmer and operates will be a key topic. Finally, an overview of authentication mechanisms and number of examples of the security vulnerabilities of existing communication protocols will be provided to instruct students on the inherent risks of communication via the internet. (Pre-requisite: one year of programming in a high level language). This course will provide students with the network knowledge needed to develop and design software applications. **Credits 3, Class hours 3, Lab hours 0, Spring**

**STAT- 146 Introduction to Statistics II**

An elementary introduction to the topics of regression and analysis of variance. The statistical software package Minitab will be used to reinforce these techniques. The focus of this course is on business applications. This is a general introductory statistics course and is intended for a broad range of programs. To have students learn the basic definitions, concepts, rules, vocabulary, and mathematical notation of Data Analysis. To provide students with the necessary manipulative skills required for solving problems. To provide an opportunity for students to obtain a background in
mathematics necessary to a study of business, economics and medical sciences. **Credits 4, Class hours 3, Lab hours 0, Spring**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLGR-202</td>
<td>Beginning German II</td>
<td>This is the second course in a two-course sequence. The sequence provides students without prior exposure to the language with a sound basis for learning German as it is used today in its spoken and written forms. The goal of the sequence is proficiency in communication skills with an emphasis on oral proficiency. The sequence also acquaints students with contemporary culture and life in the German-speaking countries. The primary aim of this course is to provide students with a sound basis for learning to communicate effectively and accurately in German as it is spoken and written today. Practice is given in all four basic skills - listening, speaking, reading, and writing – with many opportunities for student-student interaction and self-expression in realistic situations. A second important aim of the course is to introduce students to contemporary life and culture in German speaking countries. The dialogues, readings, and cultural notes have been written to depict what life is like in German speaking countries today. (MLGR-201 Beginning German I or equivalent; students must take the placement exam if this is their first RIT German class, and they have some prior study of German). <strong>Credits 4, Class hours 4, Lab hours 0, Spring</strong></td>
</tr>
<tr>
<td>MLIT-202</td>
<td>Beginning Italian II</td>
<td>This is the second course in a two-course sequence. The sequence provides students without prior exposure to the language with a sound basis for learning Italian as it is used today in its spoken and written forms. The goal of the sequence is proficiency in communication skills with an emphasis on oral proficiency. The sequence also acquaints students with contemporary culture and life in the Italian-speaking countries. The primary aim of this course is to provide students with a sound basis for learning to communicate effectively and accurately in Italian as it is spoken and written today. Practice is given in all four basic skills - listening, speaking, reading, and writing – with many opportunities for student-student interaction and self-expression in realistic situations. A second important aim of the course is to introduce students to contemporary life and culture in Italian speaking countries. The dialogues, readings, and cultural notes have been written to depict what life is like in Italy today. (MLIT-201 Beginning Italian I or equivalent; students must take the placement exam if this is their first RIT Italian class, and they have some prior study of Italian). <strong>Credits 4, Class hours 4, Lab hours 0, Spring</strong></td>
</tr>
<tr>
<td>MLSP-202</td>
<td>Beginning Spanish II</td>
<td>This course continues the basic grammatical structures, vocabulary and situations of first-year Spanish. Beginning Spanish 2 continues work in the past tenses and includes work on the subjunctive mood, plus the future and conditional tenses. Students work on paragraph-length speech and writing, and move toward readiness for conversation and composition. The primary aim of this course is to provide students with a sound basis for learning to communicate effectively and accurately in Spanish as it is spoken and written today.</td>
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</tbody>
</table>
Practice is given in all four basic skills - listening, speaking, reading, and writing – with many opportunities for student-student interaction and self-expression in realistic situations. A second important aim of the course is to introduce students to contemporary life and culture in Spanish speaking countries. The dialogues, readings, and cultural notes have been written to depict what life is like in Spanish speaking countries today. (MLSP-201 Beginning Spanish I or equivalent proficiency). Credits 4, Class hours 4, Lab hours 0, Spring

MLFR-202  Beginning French II

This is the second course in a two-course sequence. The sequence provides students without prior exposure to the language with a sound basis for learning French as it is used today in its spoken and written forms. The goal of the sequence is proficiency in communication skills with an emphasis on oral proficiency. The sequence also acquaints students with contemporary culture and life in French-speaking countries. (MLFR-201 Beginning French I or equivalent proficiency; students must take the placement exam if this is their first RIT French class, and they have some prior study of French). The primary aim of this course is to provide students with a sound basis for learning to communicate effectively and accurately in French as it is spoken and written today. Practice is given in all four basic skills - listening, speaking, reading, and writing – with many opportunities for student-student interaction and self-expression in realistic situations. A second important aim of the course is to introduce students to contemporary life and culture in French speaking countries. The dialogues, readings, and cultural notes have been written to depict what life is like in French speaking countries today. Credits 4, Class hours 4, Lab hours 0, Spring
Dear students, please find on the following pages a sample of course descriptions for the Information Technology program, offered at RIT Croatia, Zagreb campus in the Junior year.

*This is a sample of how your schedule would look like if you enroll in Fall or Spring semester of your Junior year (please note that you will work individually with your academic advisor on creating your study plan):

<table>
<thead>
<tr>
<th>Course Number &amp; Title</th>
<th>Term credit total</th>
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<tbody>
<tr>
<td>ISTE Concentration Course</td>
<td>3 X 6</td>
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<tr>
<td>ISTE-341 Server Programming</td>
<td>3 X</td>
</tr>
<tr>
<td>LAS Perspective 2 (Arts)</td>
<td>3 X</td>
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<tr>
<td>LAS Immersion 2</td>
<td>3 X</td>
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<tr>
<td>LAS Immersion 3</td>
<td>3 X</td>
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<tr>
<td>LAS Perspective 4 (Social)</td>
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<tr>
<td>LAS Perspective 5 (Natural Science)</td>
<td>4 X</td>
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**ISTE- 422**  
Application development practices  
In this course, students will gain experience with the processes, practices, and tools professional developers use to deliver robust and maintainable applications. Students will apply these practices and tools to build smaller-scale production-quality applications and systems. Topics include development life cycles, version control, test bed development and use, build utilities, error handling, deployment tools, and documentation. **Credits 3, Class hours 3, Lab hours 0, Fall**

**PSYC- 101**  
Introduction to psychology  
Introduction to the scope and methodology of psychology. Provides a survey of basic concepts, theories, and research methods. Topics include: thinking critically with psychological science; neuroscience and behavior; sensation and perception; learning; memory; thinking, language, and intelligence; personality; psychological disorders and therapy; and social psychology.  
1. Introduce students to the field of psychology, its basic concepts, theories, research methods, and contributions to the understanding of human behavior.  
2. Teach students to think as scientists and learn to apply introductory principles, concepts, and terms to everyday life.  
3. Develop critical thinking and problem solving skills as they relate to the application of psychology and its principles.  
4. Provide a foundation that will enable students to understand, and benefit from, advanced courses in psychology. **Credits 3, Class hours 3, Lab hours 0, Fall**

**IGME- 220**  
Game design and development 1  
This course examines the core process of game design, from ideation and structured brainstorming in an entertainment technology context through the examination of industry standard processes and techniques for documenting and managing the design process. This course specifically examines techniques for assessing and quantifying the validity of a given design, for managing innovation and creativity in a game development-specific context, and for world and character design. Specific emphasis is placed on both the examination and deconstruction of historical successes and failures, along with presentation of ethical and cultural issues related to the design and development of interactive software and the role of individuals in a team-oriented design methodology. Students in this class are expected to actively participate and engage. **Credits 3, Class hours 3, Lab hours 0, Fall**

**ISTE- 341**  
Server Programming  
This course provides in-depth work in server-side programming. Students will develop dynamic, data centric web pages and systems, and server-side information services that will be available to clients implemented in a variety of software technologies. Topics include XML parsing, generation, and consumption; web configuration and security; design patterns; web service structures, and application security. Programming projects are required. (co-requisite: ISTE-330; prerequisite: ISTE-340, SWEN-383). This course is part of the BS/IT degree program. Specifically, this course covers development and delivery of services in a multi-tier architecture. **Credits 3, Class hours 3, Lab hours 0, Fall**
**ISTE- 330 Database Connectivity and Access**

In this course, students will build applications that interact with databases. Through programming exercises, students will work with multiple databases and programmatically invoke the advanced database processing operations that are integral to contemporary computing applications. Topics include the database drivers, the data layer, connectivity operations, security and integrity, and controlling database access. This course is part of the BS/IT core course offerings that provide fundamental IT skills. Specifically, this course covers foundation database connectivity content for multi-tier architectures. Prerequisites: (ISTE-230). Credits 3, Class hours 3, Lab hours 0, Fall

**ISTE- 434 Data Warehousing**

This course covers the purpose, scope, capabilities, and processes used in data warehousing technologies for the management and analysis of data. Students will be introduced to the theory of data warehousing, dimensional data modeling, the extract/transform/load process, warehouse implementation, and summary-data management. The basics of data mining and importance of data security will also be discussed. Hands-on exercises include implementing a small-scale data warehouse. Credits 3, Class hours 3, Lab hours 0, Fall

**MLGR- 301 Intermediate German I**

This is the first course of a two-course sequence at the intermediate level. The sequence provides students with the tools to increase their ability to function in German. Communicative activities, contemporary texts, and the study of vocabulary and grammar are used to expand all communication skills, especially oral proficiency. This sequence continues to address issues of contemporary German life and culture. This course is designed to help students improve their vocabulary and better use their knowledge of the German language. The primary goal of the course is to enable them to feel free to discuss various subjects/topics and express their own opinions freely, in German. Each lesson will cover one area (or one problem) of everyday life. Students will have to make a comparison between different realities: German, their own view of it and their perspective of that situation in their own country. They will learn how to converse in German and exchange their ideas freely. Students will master at least one grammar feature in each lesson in an applied way: they will have to immediately apply various grammatical structures in conversation or written/oral exercises. In order to give students more opportunity to practice speaking, each of them will also participate in at least one (team-) project during the semester and will have to make a presentation in German on a chosen topic. One of the most important objectives of the course is also to teach students how to write better in German, and prepare them to use this language in their professional careers in the future. For this purpose students will have to write a short essay (a paragraph) every week. The theme of the paragraph can also be the theme of the in-class discussion. The instructor will also organize (when necessary, at least once in a semester) writing labs, where students will be correcting each other thus learning from each other’s mistakes. (MLGR-202 Beginning German II or equivalent proficiency; students must take the placement exam if this is their first RIT German class, and they have some prior study of German). Credit 3, Class hours 3, Lab hours 0, Fall
This is the first course of a two-course sequence at the intermediate level. The sequence provides students with the tools to increase their ability to function in Italian. Communicative activities, contemporary texts, and the study of vocabulary and grammar are used to expand all communication skills, especially oral proficiency. This sequence continues to address issues of contemporary Italian life and culture. This course is designed to help students improve their vocabulary and better use their knowledge of the Italian language. The primary goal of the course is to enable them to feel free to discuss various subjects/topics and express their own opinions freely, in Italian. Each lesson will cover one area (or one problem) of everyday life. Students will have to make a comparison between different realities: Italian, their own view of it and their perspective of that situation in their own country. They will learn how to converse in Italian and exchange their ideas freely. Students will master at least one grammar feature in each lesson in an applied way: they will have to immediately apply various grammatical structures in conversation or written/oral exercises. In order to give students more opportunity to practice speaking, each of them will also participate in at least one (team-) project during the semester and will have to make a presentation in Italian on a chosen topic. One of the most important objectives of the course is also to teach students how to write better in Italian, and prepare them to use this language in their professional careers in the future. For this purpose students will have to write a short essay (a paragraph) every week. The theme of the paragraph can also be the theme of the in-class discussion. (MLIT-202 Beginning Italian II or equivalent proficiency; students must take the placement exam if this is their first RIT Italian class, and they have some prior study of Italian). Credits 3, Class hours 3 Lab hours 0, Fall
Intermediate Spanish I

This is the first course in the Intermediate Spanish sequence (second year). Intermediate Spanish I is a course in Conversation, along with grammar review and culture study. Emphasis is on tourist survival situation dialogues, various forms of conversation, grammar review, and both formal and informal culture (the arts and daily behavior). The basic skills learned in the first year courses are now put into practice. This course is designed to help students improve their vocabulary and better use their knowledge of the Spanish language. The primary goal of the course is to enable them to feel free to discuss various subjects/topics and express their own opinions freely, in Spanish. Each lesson will cover one area (or one problem) of everyday life. Students will have to make a comparison between different realities: Spanish, their own view of it and their perspective of that situation in their own country. They will learn how to converse in Spanish and exchange their ideas freely. Students will master at least one grammar feature in each lesson in an applied way: they will have to immediately apply various grammatical structures in conversation or written/oral exercises. In order to give students more opportunity to practice speaking, each of them will also participate in at least one (team-) project during the quarter and will have to make a presentation in Spanish on a chosen topic. One of the most important objectives of the course is also to teach students how to write better in Spanish, and prepare them to use this language in their professional careers in the future. For this purpose students will have to write a short essay (a paragraph) every week. The theme of the paragraph can also be the theme of the in-class discussion. The instructor will also organize (when necessary, at least once in a semester) writing labs, where students will be correcting each other thus learning from each other’s mistakes. (MLSP-202 Beginning Spanish II or equivalent proficiency; students must take the placement exam if this is their first RIT Spanish class, and they have some prior study of Spanish). Credits 3, Class hours 3, Lab hours 0, Fall

Intermediate French I

This is the first course of a two-course sequence at the intermediate level. The sequence provides students with the tools necessary to increase their ability to function in French. Communicative activities, contemporary texts, vocabulary study, and grammar are used to expand all communication skills, especially oral proficiency. This sequence continues to address issues of contemporary French life and culture as well as the cultures of the Francophone world. (MLFR-202 Beginning French II or equivalent proficiency; students must take the placement exam if this is their first RIT French class, and they have some prior study of French). Class 3, Credit 3, Fall
### Data Exploration and Knowledge Discovery

Rapidly expanding volumes of data from all areas of society are becoming available in digital form. High value information and knowledge is embedded in many of these data volumes. Unlocking this information can provide many benefits, and may also raise ethical questions in certain circumstances. This course provides students with a gentle, hands-on introduction to how interactive data exploration and data mining software can be used for data-driven knowledge discovery. Students will use statistical, visual, and data/text mining software systems to explore data collections from several different domains such as business, environmental management, healthcare, finance, and transportation. (STAT-145 or equivalent). **Credits, Class hours 3, Lab hours 0, Spring**

### Information Requirements Modelling

Students will survey and apply contemporary techniques used in analyzing and modeling information requirements. Requirements will be elicited in a variety of domains and abstracted at conceptual, logical, and physical levels of detail. Process, data, and state modeling will be applied in projects that follow a systems development lifecycle. Object-oriented modeling will be explored and contrasted with data and process oriented modeling. Individual and team modeling assignments will be required. (ITSE-230). Provide students with the skills required to elicit, analyze, and structure end-user information requirements. The skill set includes the ability to apply process, data, and state modeling in various domains. Students will also explore the relationship between data-oriented and object-oriented system modeling. **Credits 3, Class hours 3, Lab hours 0, Spring**

### Database Management and Access

Students will be introduced to issues in client/server database implementation and administration. Students will configure, test, and establish client-server communication and server-server communication with single and multiple database servers. Topics such as schema implementation, storage allocation and management, user creation and access security, backup and recovery, and performance measurement and enhancement will be presented in lecture and experienced in a laboratory environment. Students will configure and demonstrate successful communication between a database file server and multiple clients. (ISTE-330). **Credits 3, Class hours 3, Lab hours 0, Spring**

### Intermediate French II

This is the second course of a two-course sequence at the intermediate level. The sequence provides students with the tools necessary to increase their ability to function in French. Communicative activities, contemporary texts, vocabulary study, and grammar are used to expand all communication skills, especially oral proficiency. This sequence continues to address issues of contemporary French life and culture as well as the cultures of the Francophone world. (MLFR-301 Intermediate French I or equivalent proficiency; students must take the placement exam if this is their first RIT French class, and they have some prior study of French). **Class 3, Credit 3, Spring**
### MLGR- 302 Intermediate German II

This is the second course of a two-course sequence at the intermediate level. The sequence provides students with the tools to increase their ability to function in German. Communicative activities, contemporary texts, the study of vocabulary and grammar are used to expand all communication skills, especially oral proficiency. This sequence continues to address issues of contemporary German life and culture. This course is designed to help students improve their vocabulary and better use their knowledge of the German language. The primary goal of the course is to enable them to feel free to discuss various subjects/topics and express their own opinions freely, in German. Each lesson will cover one area (or one problem) of everyday life. Students will have to make a comparison between different realities: German, their own view of it and their perspective of that situation in their own country. They will learn how to converse in German and exchange their ideas freely. Students will master at least one grammar feature in each lesson in an applied way: they will have to immediately apply various grammatcal structures in conversation or written/oral exercises. In order to give students more opportunity to practice speaking, each of them will also participate in at least one (team-) project during the quarter and will have to make a presentation in German on a chosen topic. One of the most important objectives of the course is also to teach students how to write better in German, and prepare them to use this language in their professional careers in the future. For this purpose students will have to write a short essay (a paragraph) every week. The theme of the paragraph can also be the theme of the in-class discussion. The instructor will also organize (when necessary, at least once in a semester) writing labs, where students will be correcting each other thus learning from each other’s mistakes. (MLGR-301 Intermediate German I or equivalent proficiency; students must take the placement exam if this is their first RIT German class, and they have some prior study of German. **Credits 3, Class hours 3, Lab hours 0, Spring**

### MLIT- 302 Intermediate Italian II

This is the second course of a two-course sequence at the intermediate level. The sequence provides students with the tools to increase their ability to function in Italian. Communicative activities, contemporary texts, and the study of vocabulary and grammar are used to expand all communication skills, especially oral proficiency. This sequence continues to address issues of contemporary Italian life and culture. This course is designed to help students improve their vocabulary and better use their knowledge of the Italian language. The primary goal of the course is to enable them to feel free to discuss various subjects/topics and express their own opinions freely, in Italian. Each lesson will cover one area (or one problem) of everyday life. Students will have to make a comparison between different realities: Italian, their own view of it and their perspective of that situation in their own country. They will learn how to converse in Italian and exchange their ideas freely. Students will master at least one grammar feature in each lesson in an applied way: they will have to immediately apply various grammatcal structures in conversation or written/oral exercises. In order to give students more opportunity to practice speaking, each of them will also participate in at least one (team-) project during the quarter and will have to make a presentation in Italian on a chosen topic. One of the most important objectives of the course is also
to teach students how to write better in Italian, and prepare them to use this language in their professional careers in the future. For this purpose students will have to write a short essay (a paragraph) every week. The theme of the paragraph can also be the theme of the in-class discussion. The instructor will also organize (when necessary, at least once in a semester writing labs, where students will be correcting each other thus learning from each other’s mistakes. (MLIT-301 Intermediate Italian I or equivalent proficiency; students must take the placement exam if this is their first RIT Italian class, and they have some prior study of Italian). Credits 3, Class hours 3  Lab hours 0, Spring

**MLSP- 302 Intermediate Spanish II**

This is the second course in the Intermediate Spanish sequence (second year). Intermediate Spanish II is a composition course, emphasizing grammar re-view, composition, business-letter writing, Spanish for the Professions, and culture, while also including work in speaking and listening. The basic skills learned in the first year courses are now put into practice. In addition to the language work, there is significant work on cultural topics of Spanish-speaking countries at the intermediate level. (MLSP-301 Intermediate Spanish I or equivalent proficiency; students must take the placement exam if this is their first RIT Spanish class, and they have some prior study of Spanish) Class 3, Credit 3 (S)

This course is designed to help students improve their vocabulary and better use their knowledge of the Spanish language. The primary goal of the course is to enable them to feel free to discuss various subjects/topics and express their own opinions freely, in Spanish. Each lesson will cover one area (or one problem) of everyday life. Students will have to make a comparison between different realities: Spanish, their own view of it and their perspective of that situation in their own country. They will learn how to converse in Spanish and exchange their ideas freely. Students will master at least one grammar feature in each lesson in an applied way: they will have to immediately apply various grammatical structures in conversation or written/oral exercises. In order to give students more opportunity to practice speaking, each of them will also participate in at least one (team-) project during the quarter and will have to make a presentation in Spanish on a chosen topic. One of the most important objectives of the course is also to teach students how to write better in Spanish, and prepare them to use this language in their professional careers in the future. For this purpose students will have to write a short essay (a paragraph) every week. The theme of the paragraph can also be the theme of the in-class discussion. The instructor will also organize (when necessary, at least once in a semester) writing labs, where students will be correcting each other thus learning from each other’s mistakes. Credits 3, Class hours 3  Lab hours 0, Spring

**ISTE-444 Web server development and administration**

Web developers often need to go beyond building Web pages and client-server programming to plan, install, configure, develop, and maintain the Web servers that host their sites. They need to understand issues of scalability, performance, and security as they apply to deploying a Web presence. This course provides a practical hands-on approach to development, configuration, and administration of Web server platforms. Topics include issues of and approaches to scalability, multiple server
systems, security, and auditing, as well as the many configuration options, modules, and server alternatives available. **Credits 3, Class hours 3, Lab hours 0, Spring**

**ENVS – 151**  
**Ecology of Dalmatian coast**

This course is an introduction to population, community and ecosystem ecology, stressing the dynamic interrelationships of plant and animal communities of the Dalmatian Coast. The course includes such ecological concepts as energy flow and trophic levels in natural communities, population and community dynamics, biogeography and ecosystem ecology. Field trips to local ecosystems are included. **Credits 4, Class hours 2, Lab hours 2, Spring**
YEAR 4

Dear students please find on the following pages sample of course descriptions for Information Technology program, offered at RIT Croatia, Zagreb campus in the Senior year.

*This is a sample of how your schedule would look like if you enroll in Fall or Spring semester of your Senior year (please note that you will work individually with your academic advisor on creating your study plan):

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<th>Course Number &amp; Title</th>
<th>CR</th>
<th>LAE</th>
<th>Maj</th>
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</table>

Term credit total: 15 3 6

Program Totals:
Credits: 126
Liberal Arts & Sciences: 60
Major: 54
Electives & Other: 12 plus two summers of cooperative education

Course numbering: RIT courses are generally referred to by their alphanumeric registration label. The four alpha characters indicate the discipline within the college. The final three digits are unique to each course and identify whether the course is noncredit (less than 099), lower division (100-299), upper division (300-599), or graduate level (600 and above).

Unless otherwise noted, the following courses are offered annually. Specific times and dates can be found in each semester's schedule of courses.
Prerequisites/corequisites are noted in parentheses near the end of the course description.
**ISTE 442**  
**Web application development**  
When building larger-scale web applications, there are a myriad of concerns that range from technology, framework, and architecture selection to runtime performance optimization. This course focuses on the development of integrated web applications that consume information served from one or many sources. Trends in web application development are identified and assessed. Programming projects are required. Prerequisites: ISTE-341 or equivalent courses. **Credits 3, Class hours 3, Lab hours 0, Spring**

**ISTE 422**  
**Application development**  
In this course, students will gain experience with the processes, practices, and tools professional developers use to deliver robust and maintainable applications. Students will apply these practices and tools to build smaller-scale production-quality applications and systems. Topics include development life cycles, version control, test bed development and use, build utilities, error handling, deployment tools, and documentation. Course Objectives

1. Development Methodologies and Models
2. Software Development Life Cycles
3. Working Together: Teams & Meetings
4. Version Control and Tools
5. Test Development, Methodologies and Tools
6. Build Utilities
7. Error Handling & Bug Tracking
8. Logging
9. Abstraction
10. Reverse Engineering & Refactoring
11. Behavior Driven Development
12. Events & State Machines
13. Application Deployment
14. Efficient Coding
15. Application Distribution
16. Help Systems

**Credits 3, Class hours 3, Lab hours 0, Spring**

**ENVS 151**  
**Ecology of the Dalmatian coast**  
This course is an introduction to population, community and ecosystem ecology, stressing the dynamic interrelationships of plant and animal communities of the Dalmatian Coast. The course includes such ecological concepts as energy flow and trophic levels in natural communities, population and community dynamics, biogeography and ecosystem ecology. Field trips to local ecosystems are included. **Credits 4, Class hours 2, Lab hours 2, Spring**

**ISTE 434**  
**Data warehousing**  
This course covers the purpose, scope, capabilities, and processes used in data warehousing technologies for the management and analysis of data. Students will be introduced to the theory of data warehousing, dimensional data modeling, the extract/transform/load process, warehouse implementation, and summary-data
management. The basics of data mining and importance of data security will also be discussed. Hands-on exercises include implementing a small-scale data warehouse.

Course Objectives
- Describe the function and purposes of data warehouses.
- Compare the differences between the standard and emerging data warehousing approaches.
- Explain and apply fundamental data warehousing theory – including architecture, multi-dimensional databases, relational databases, fact vs. dimension tables, and schema design.
- Design a data warehouse using dimensional data modeling theory and practices.
- Discuss the data cleansing process, its importance in data warehousing, and utilize standard data extraction /transformation/load (ETL) processes.
- Apply traditional warehousing implementation and data analysis techniques through the creation of a data warehouse from a scenario provided by the course instructor(s).
- Explain the purpose of data mining in a data warehouse environment and compare the directed vs. undirected learning approaches.
- Discuss the importance of data security and the impact of data/identity theft on corporations and individuals.

Credits 3, Class hours 3, Lab hours 0, Fall

ISTE- 432 Database application development

Database applications have aspects that need to be considered when designing and developing larger-scale information systems. In Database Application Development course students will explore topics such as concurrent processing, scalability, performance, and security within the context of developing larger-scale database information processing systems. Programming exercises and projects are required for this course. Specific design and implementation considerations need to be considered when developing large-scale multiuser database/information systems. In this course, students will explore topics such as architectural styles for database application development, including architecture analysis and multi-user issues, data and business layers concepts, design patterns and business layer binding, scalability and performance considering SQL design, connection management and pooling, application vs. domain data and push/pull model considerations, exception handling in database applications, help systems, testing, building, refactoring, code segregation, deployment, security, and regulation all within the context of database applications development for larger-scale information processing systems. Credits 3, Class hours 3, Lab hours 0, Fall

ISTE- 500 Senior Development Project I

The first course in a two-course, senior level, system development capstone project. Students form project teams and work with sponsors to define system requirements. Teams then create architectures and designs, and depending on the project, also may begin software development. Requirements elicitation and development practices introduced in prior coursework are reviewed, and additional methods and processes are introduced. Student teams are given considerable latitude in how they organize and conduct project work. To learn all phases in project management with special
emphasize on: Initiation phase, Definition phase, Design phase, Development phase. 

**Credits 3, Class hours 3; Lab hours 0, Fall**

### ISTE-501 Senior Development Project II

The second course in a two-course, senior level, system development capstone project. Student teams complete development of their system project and package the software and documentation for deployment. Usability testing practices introduced in prior coursework are reviewed, and additional methods and processes are introduced. Teams present their developed system and discuss lessons learned at the completion of the course. To learn all phases in project management with special emphasize on: Implementation phase; Follow-up phase. **Credits 3, Class hours 3; Lab hours 0, Spring**

### ISTE-438 Contemporary Databases

This course will introduce the topic of contemporary databases by covering the design, application and use of non-relational (NoSQL) database technologies. Topics include an overview of data types, structuring and processing data and knowledge, data transformation, and data storage and warehousing. Students will learn the interaction between relational and non-relational databases in the Cloud or other storage media. Programming assignments will be required. (Prerequisites: ISTE-230, ISTE-240) The goal of this course is to provide students with familiarity in the use of contemporary databases such as non-relational databases to store various non-traditional forms of data, using more recently developed database technologies, and to determine appropriate applications of these technologies. **Credits 3, Class hours 3, Lab hours 0, Fall**