

**RIT CROATIA PROGRAM OUTLINE**

**PROGRAM TITLE:** WEB AND MOBILE COMPUTING – ZAGREB

**TYPE OF PROGRAM:** Undergraduate professional program

**DURATION OF PROGRAM:** 4 years /8 semesters

**TOTAL NUMBER OF ECTS:** 240

**SCIENTIFIC AREA:** Technical Sciences

**SCIENTIFIC FIELD:** Computing

**EFFECTIVE FOR:** Students enrolled starting from AY 2021/22

## 1. ENROLLMENT CRITERIA

Admission requirements:

Students can be admitted to the Web and Mobile Computing program through three different procedures:

### 1. Croatian national exams (državna matura)

Upon completion of a high-school program in Croatia, students need to pass the mandatory national exams (državna matura) and are admitted on the basis of their results.

Besides the mandatory exams, applicants are evaluated based on two additional requirements:

- Motivational essay
- Motivational interview

### Results calculation

Mandatory national exams:

Croatian - not used

Mathematics - 25%

English - 35%

Additional requirements:

Motivational essay - 10%

Motivational interview - 30%

### 2. Internal admissions process

This process applies to all candidates who have completed secondary education, but are not required to take the national exams in Croatia.

Candidates need to:

- Fill out the application form on RIT Croatia web site:  
<https://www.croatia.rit.edu/applicationform>
- Submit secondary education transcripts, including any final national exit exams
- Submit a motivational essay
- Participate in a motivational interview in English

Candidates will be scored as follows:

Secondary education final or exit exams :

Mathematics - up to 250 points

English - up to 350 points

Additional requirements:

Motivational essay - up to 100 points

Motivational interview - up to 300 points

### 3. Transfer from another higher education institution

Candidates who are already enrolled at another higher education institution can submit an application for transfer and enrollment in the same way as candidates who enroll through the internal enrollment process, except that they also submit a transcript of grades from a previously enrolled study program, along with the course descriptions.

Candidate's transcript of grades and description of the courses from their home university undergo a detailed review, during which we determine which courses can be recognized within the Web and Mobile Computing program.

## 2. CRITERIA FOR ENROLLMENT IN THE NEXT SEMESTER/YEAR LEVEL

A student must maintain a cumulative GPA of 2.00 or above at RIT Croatia in order to remain in good academic standing. Any student whose term Grade Point Average falls below 2.00 (and is above 1.00) or whose overall Cumulative Grade Point Average falls below 2.00 will be placed on probation (i.e. is eligible to enroll in classes, though specific conditions of enrollment or restrictions will be applied).

Any student whose overall Cumulative Grade Point Average falls below 2.00 will be placed on academic warning.

Suspension refers to the academic action taken when a student is not permitted to enroll in courses at the university for a determined period of time.

- Any degree-seeking undergraduate student whose Term Grade Point Average falls below a 2.00 (C average) and for whom suspension is not applicable will be placed on probation. The number of probations is limited to TWO per degree level during the entire duration of your studies.
- Students placed on suspension after two probations will be suspended for a period of one semester.
- Students who have been readmitted to RIT Croatia after an academic suspension will have up to two semesters (fall and spring) to return to good

academic standing, and their status will be "pending action." Students who fail to return to good academic standing in two semesters will be placed on academic suspension.

- Students who attempt fewer than 9 credits in a term, and earn a term GPA less than a 2.0, but whose CUM GPA is 2.0 or higher may be subject to academic action at the discretion of the college.
- Students on probation, deferred suspension and returning from a suspension are now required to work with their Academic Advisor to create an Academic Success Plan. Academic Success Plan is an agreement between a student and the student's academic advisor designed to facilitate success in the program. Students should consult with their academic advisor to determine the appropriate number of credits per term.
- Any student whose Term Grade Point Average falls below 1.00 will be directly suspended from RIT Croatia for a period of one semester (fall or spring).
- A suspended student cannot enroll in any credit or non-credit course at the university while on suspension. This also includes co-ops.

- A suspended student may not be admitted to another program while suspended.
- In special circumstances, a suspended student may apply in writing to the Ombudsperson for a suspension waiver. This waiver request will be evaluated by the Ombudsperson and the Academic Advisors before submission to the Manager of Academic Affairs for approval.
- A suspension waiver may only be granted ONCE during a student's undergraduate studies.

Please note: The waiver carries specific responsibilities on the student's part. These may include registering in specific courses, achieving a semester GPA of at least 2.0, not withdrawing from any courses in which we will ask the student to enroll, taking a maximum term load of 12 credits, attending bi-weekly meetings with his or her faculty advisor. These responsibilities are stated in a contract the student will be required to sign. Should the student fail to abide by the conditions of the contract, or should the academic performance warrant suspension again, he or she would then be suspended with no opportunity to appeal.

### 3. TRANSFER PROCEDURE

Credit transfer procedure and transfer procedures generally speaking are defined by The Rulebook on Admission Requirements and Transfer Procedures from other HE institutions to RIT Croatia.

### 4. GRADUATION REQUIREMENT

All of the following are required for graduation from a student's program:

- A Cumulative Grade Point Average (GPA) of 2.00 or above based on the US credits system
- Satisfactory completion of the Capstone course
- Completion of a minimum of 126 US credits for the US degree and 240 ECTS for the Croatian degree
- Satisfactory completion and grade for the required co-ops in duration of 800 working hours
- No outstanding library dues
- Full payment or satisfactory adjustment of all financial obligations

#### Graduation with Honors

Honors posted to the academic record will be based upon the student's Cumulative Grade Point Average upon completion of the degree requirements. The numerical criteria for graduation with honors are as follows:

Summa cum laude	3.80 Cumulative GPA
Magna cum laude	3.60 Cumulative GPA
Cum laude	3.40 Cumulative GPA

## **5. DEGREES UPON COMPLETION OF THE STUDIES**

RIT Croatia is the only educational institution in Croatia granting two degrees: an American degree from RIT and a Croatian degree from RIT Croatia.

Upon successful completion of the four-year program in Web and Mobile Computing students receive a Bachelor of Science (B.S.) degree in Web and Mobile Computing. Studies at RIT Croatia are also accredited by the Croatian Ministry of Science, Education and Sports and meet the requirements of the Bologna Agreement. As a result, all students completing the four-year IT program will receive the degree title of prvostupnik/prvostupnica (baccalaureus/baccalaurea) inženjer/inženjerka informacijskih tehnologija.

In order to receive a Croatian degree from RIT Croatia students must have either a high school diploma issued by a Croatian high school or a high school diploma recognized by the Ministry of Science, Education and Sports of the Republic of Croatia.

## **6. LIST OF OTHER STUDY PROGRAMS FROM WHICH THE ECTS POINTS COULD BE EARNED**

Hospitality and Tourism Management

International Business

## 7. PROGRAM LEARNING OUTCOMES

WMC1	Analyze user, software and hardware requirements in the selection, development, integration, evaluation, and administration of information systems
WMC2	Design a computer-based solution for solving problems using mathematical and information technology principles and practices
WMC3	Apply software design principles and patterns to design and implement software solutions
WMC4	Create a web-based solution applying software design and development principles, patterns and practices
WMC5	Create a mobile application using software design and development principles, patterns and practices
WMC6	Build a solution using contemporary software development methodologies, frameworks, libraries and tools
WMC7	Apply tools and methods to design, model, create, manage and use a database
WMC8	Design user interface and user experience for software solutions based on contemporary principles and practices
WMC9	Apply methods and techniques to design, build and manage a computer network system using requisite hardware and software
WMC10	Apply IT project management techniques to achieve specific project objectives including scope, quality, time, and cost
WMC11	Make decisions in computing practices based on professional, legal, ethical, social, and security principles
WMC12	Collaborate effectively as a team member or leader in various IT projects
WMC13	Communicate field-specific information in written and oral form using a standard English variety.
WMC14	Critically evaluate text and other media in a specific field.
WMC15	Reevaluate existing principles and practices in a specific field.
WMC16	Manage one's professional development and engage in lifelong learning activities pertaining to the field.
WMC17	Apply scientific principles in solving contemporary issues in a specific field.

## 8. LIST OF COURSES

### FALL SEMESTER

Course No. Course Name Credits ECTS

#### YEAR 1

ISTE-120	Computational Problem Solving in the Information Domain I	4	6
ISTE-140	Web & Mobile I	3	6
NMDE-111	New Media Design Digital Survey I	3	6
MATH-131	Discrete Mathematics	4	5
PHIL-101	Introduction to Philosophy	3	5
YOPS-10	RIT 365: RIT Connections	0	0

#### YEAR 2

NSSA-290	Networking Essentials for Developers	3	5
ISTE-222	Computational Problem Solving in the Information Domain III	3	6
ISTE-260	Designing the User Experience	3	5
UWRT-150	FYW: Writing Seminar	3	5

#### CHOOSE 1 LANGUAGE COURSE BELOW:

MLSP-201	Beginning Spanish 1	4	5
MLFR-201	Beginning French 1	4	5
MLIT-201	Beginning Italian 1	4	5
MLRU-201	Beginning Russian 1	4	5
MLGR-201	Beginning German 1	4	5

#### YEAR 3

ISTE-341	Server Programming	3	6
ISTE-422	Application Development Practices	3	6
PSYC-101	Introduction to Psychology	3	5
ENGL-210	Literature, Culture and Media	3	5

#### CHOOSE 1 OF THE FOLLOWING OPTIONS:

##### OPTION 1: LANGUAGE IMMERSION (MUST)

MLSP-301	Intermediate Spanish 1	3	4
MLFR-301	Intermediate French 1	3	4
MLIT-301	Intermediate Italian 1	3	4
MLRU-301	Intermediate Russian 1	3	4
MLGR-301	Intermediate German 1	3	4

##### OR

##### OPTION 2: ONLY IF NOT COMPLETING A LANGUAGE IMMERSION

FREE	FREE ELECTIVE (CHOOSE ANY COURSE)	3	5
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#### YEAR 4

ISTE-454	Concentration Mobile 1: Mobile Applications Development I	3	6
ISTE-500	Senior Development Project I	3	6
ENVS-151	Scientific Inquiries in Environmental Science	4	5
PSYC-223	Cognitive Psychology	3	5
ANTH-328	Heritage and Tourism	3	5

##### OR

FREE	Free Elective (choose any course)	3	5
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### SPRING SEMESTER

Course No. Course Name Credits ECTS

ISTE-121	Computational Problem Solving in the Information Domain II	4	6
ISTE-240	Web & Mobile II	3	6
ISTE-230	Introduction to Database and Data Modeling	3	6
MATH-161	Applied Calculus	4	5
UWRT-100	Critical Reading and Writing	3	5

SWEN-383	Software Design Principles and Patterns	3	6
ISTE-252	Foundations of Mobile Design	3	5
ISTE-330	Database Connectivity and Access	3	6
ISTE-340	Client Programming	3	6
ISTE-099	Second Year Seminar	0	0

#### CHOOSE 1 LANGUAGE COURSE BELOW:

MLSP-202	Beginning Spanish 2	4	5
MLFR-202	Beginning French 2	4	5
MLIT-202	Beginning Italian 2	4	5
MLRU-202	Beginning Russian 2	4	5
MLGR-202	Beginning German 2	4	5

	Co-op 1	0	12
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ENVS-150	Ecology of the Dalmatian Coast	4	5
PHIL-401	Great Thinkers	3	5
ISTE-442	Concentration Web 1: Secure Web Application Development	3	6
ISTE-444	Concentration Web 2: Web Server Development and Administration	3	6

#### CHOOSE 1 OF THE FOLLOWING OPTIONS:

##### OPTION 1: LANGUAGE IMMERSION (MUST)

MLSP-302	Intermediate Spanish 2	3	4
MLFR-302	Intermediate French 2	3	4
MLIT-302	Intermediate Italian 2	3	4
MLRU-302	Intermediate Russian 2	3	4
MLGR-302	Intermediate German 2	3	4

##### OR

##### OPTION 2: PSYCHOLOGY IMMERSION (MUST)

PSYC-225	Social Psychology	3	5
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	Co-op 2	0	12
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ISTE-456	Concentration Mobile 2: Mobile Applications Development II	3	6
ISTE-501	Senior Development Project II	3	6
PHIL-401	Great Thinkers	3	5
PSYC-221	Abnormal Psychology	3	5
FREE	Free Elective (choose any course)	3	5

Elective courses may vary depending on availability and enrolment.

# **YEAR 1 – COURSE DESCRIPTIONS**



## General Information

Course title:	Computational Problem Solving in the Information Domain I
Course leader:	Alan Mutka
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	First
ECTS points:	6
Teaching hours (L+S+E):	90 (4+0+2)

## Course Description

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### Course objectives:

- This course serves as an introduction to using the object-oriented approach in the information domain
- Students will learn to design software solutions using the object-oriented approach
- Students will be introduced to visual system modelling using UML
- Students will learn to implement software solutions using a contemporary programming language
- Students will learn to test software solutions

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### Conditions for enrolment in the course:

None/prerequisite

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### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Design a class following the object-oriented programming principles
- CLO2:** Use common programming language constructs in developing a software solution
- CLO3:** Implement single and multi-dimensional array data structures in a contemporary programming language
- CLO4:** Build an object-oriented solution in a contemporary programming language

## Course content:

Foundations of the object-oriented approach

- Basic object-oriented concepts
- Thinking in object-oriented terms

Object-oriented constructs

- Class definition
- Modularity
- Encapsulation
- Hierarchy
- Inheritance
- Polymorphism

Visual information system modelling

- UML elements
- UML structure diagrams

Implementation language constructs

- Data types
- Data structures
- Conditional constructs
- Iterative constructs
- Arrays

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## Teaching delivery methods:

- Lectures
- Independent work
- Laboratory
- Mentoring
- Peer review

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## Student obligations:

- Attending classes
- Submitting assignments
- Participate in discussions

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## Monitoring student work:

Activity	ECTS
Practical 1	0.48
Practical 2	0.78
Practical 3	1.08
Practical 4	0.48
Comprehensive theory final	0.72
Laboratory	1.44
Homework	1.02
<b>Total</b>	<b>6</b>

Teaching time is worth 2 ECTS points and it has been incorporated in time for assignments.

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## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Practical 1	8
Practical 2	13
Practical 3	18
Practical 4	8
Comprehensive theory final	12
Laboratory	24
Homework	17
<b>Total:</b>	<b>100</b>

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## Required reading:

- Horstmann, C., & Safari, an O'Reilly Media Company. (2009). Big java, 4th edition (1st ed.). Wiley.

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## Additional reading:

- Horstmann, C., & Safari, an O'Reilly Media Company. (2018). Core java volume I--fundamentals, 11th edition (1st ed.). Pearson
- Horstmann C, Safari, an O'Reilly Media Company. Core Java, Vol. II-Advanced Features, 12th Edition. 1st ed. Pearson; 2022.
- Horstmann, C., & Safari, an O'Reilly Media Company. (2011). Java for everyone: Compatible with java 5, 6, and 7, 2nd edition (1st ed.). Wiley.

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## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	ISTE-140 Web and Mobile I
Course leader:	dr. sc. Branko Mihaljević, prof.
Study programme:	Web and Mobile Computing (WMC) Program
Course status:	Obligatory
Year:	First
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

This course provides a basic introduction to Internet technologies and web development. Topics include HTML and CSS, digital images, web page design and web site publishing. Emphasis is placed on fundamentals, concepts and standards. Additional topics include the user experience, mobile design issues, and copyright/intellectual property considerations.

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### Course objectives:

- Gain knowledge of key individuals and events in the history of the Internet and the World Wide Web
- Understand and apply different Internet search techniques for research
- Understand Internet protocols and tools, including usage of SSH and SFTP
- Utilize Unix file and directory management tasks
- Understand digital graphics content types, including file formats, resolution, color models, and compression
- Utilize imaging software to create graphic elements and composite images
- Develop web pages with HTML and CSS
- Identify and implement basic graphic design principles including contrast, alignment, proximity, repetition, and effective use of color and type
- Address cross-browser issues

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### Conditions for enrolment in the course:

None/prerequisite

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## Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Create valid web pages using standard markup languages and style sheets
- CLO2:** Apply appropriate design principles to a web site structure and functionality
- CLO3:** Create graphics optimized for web sites
- CLO4:** Work remotely on the web server using the Unix/Linux-based operating environment
- CLO5:** Build responsive web page design and layout using contemporary design techniques
- CLO6:** Develop a multi-page web site with embedded graphics and multimedia on a web server

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## Course content:

Course topics include:

- History of Web
- HTML (HyperText Markup Language) and CSS (Cascading Style Sheet Language)
- Web Page Validation
- Secure File Transfer Protocol (SFTP)
- Basics of Linux/UNIX Operating Systems
- Secure Shell Protocol (SSH)
- Digital Images for Web - Creation and Manipulation
- Internet Searches
- Responsive Web Design
- Copyright and Intellectual Property
- Plagiarism
- Web Design Basics
- User Experience and Usability on the Web
- CSS3 Features and Grid
- Introduction to JavaScript Language
- Introduction to PHP Language

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## Teaching delivery methods:

- Lectures
- Exercises
- Independent work

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## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

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## Monitoring student work:

Activity	ECTS
Homework assignments	0.6
Quizzes	0.6
Project 1	0.6
Project 2	0.9
Project 3	0.9
Midterm Exam Theory	0.6
Midterm Exam Practical	0.6
Final Exam Theory	0.6
Final Exam Practical	0.6
<b>Total</b>	<b>6</b>

Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments, projects and preparing for the exams.

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## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Homework assignments	10
Quizzes	10
Project 1	10
Project 2	15
Project 3	15
Midterm Exam Theory	10
Midterm Exam Practical	10

Final Exam Theory	10
Final Exam Practical	10
<b>Total:</b>	<b>100</b>

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### Required reading:

- Robbins, J. (2018). Learning Web Design: A beginner's guide to HTML, CSS, JavaScript, and Web Graphics (Fifth ed.). O'Reilly. – available as eBook in RIT Library

or

- Felke-Morris, T. (2021). Basics of web design: HTML5 & CSS (Sixth ed.). Pearson.

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### Additional reading:

- Kyrnin, J., & Meloni, J. C. (2019). Sams: Teach Yourself HTML, CSS, and JavaScript all in One (Third ed.). Pearson. – optional and available as eBook in RIT Library
- Frain, B. (2020). Responsive Web Design with HTML5 and CSS: Develop future-proof responsive websites using the latest HTML5 and CSS techniques, 3rd edition. Packt Publishing, Limited. – optional and available as eBook in RIT Library
- Hong, P. (2018). Practical Web Design: Learn the fundamentals of web design with HTML5, CSS3, bootstrap, jQuery, and vue.js. Packt. – optional and available as eBook in RIT Library
- Grant, K. (2018). CSS in Depth (1st ed.). Manning Publications. – optional and available as eBook in RIT Library

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### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes



## General Information

Course title:	NMD Digital Survey I
Course leader:	Ante Poljičak
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	First
Number of ECTS credits:	6
Teaching hours (L+S+E):	75 (2+0+3)

## Course Description

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### Course objectives:

- 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.

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### Conditions for enrolment in the course:

None

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### Expected learning outcomes of the course:

A student will be able to:

**LO1:** Apply content creation methods using image and graphical manipulation.

- LO2:** Demonstrate effective design solutions using complex imagery, layout and typographical elements.
- LO3:** Evaluate the use and effectiveness of imaging, visual design solutions and aesthetic qualities.
- LO4:** Understand and display creative and conceptualization skills through research and documentation.
- LO5:** Understand halftoning, reproduction principles and printing requirements for various media.
- LO6:** Demonstrate visual solutions and content creation for editorial design problems.
- LO7:** Apply visual design elements, principles, imagery and layouts to interactive creative problems.

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## Course content:

This project-based course is an investigation of the computer as an illustrative, imaging, and graphical generation tool. It develops foundational technical and design skills in raster and vector image creation, editing, compositing, layout and visual design for online production. Emphasis will be on the application of technical and design organization methods and principles for digital and printed media. Students will create and edit images, graphics, layouts and typography to form effective design solutions for various media delivery.

Following topics will be covered:

- Fundamentals of images
  - Vector vs. Raster
  - Resolution and size
  - Color space and bit-depth (RGB)
  - Sketching, drawing and the relation to commercial media
  - Bezier Curves, Paths and Anchor Points
  - Working with objects and art boards
  - Color space and bit-depth (RGB vs. CMYK)
- Graphic technology and Imaging
  - Fundamentals of printing
  - Halftoning principles
  - Prepress requirements
  - Color Theory and reproduction
- Image capture and saving
  - Fundamentals of photography (lighting, depth, color, subject, perspective, time)
  - Introduction to camera controls (f-stop, shutter, megapixels)
  - How to take photographs (image capture assignment)
  - Correcting and enhancing digital photographs (RAW and PS tools)
  - Image compressions and file formats for online and storage
  - Working with advanced image correcting and enhancing tools

- Image creation and manipulation
  - Advanced imaging styles
  - Using layers to enhance and combine images
  - Templates, drawing and tracing
  - Blends, Gradients and Meshes
  - Transparencies
  - Process for image creation
- Creating graphic elements
  - Elements and principles of Graphic Design
  - Introduction to layout and grids
  - Introduction to Typography
  - Introduction to design for interaction
  - Digital output best practices
- Design principles
  - Selecting, purchasing, and using copyright free images for design
  - Ethics, copyright and user responsibilities and liabilities
  - Conceptualizing image-based design solutions
  - Use of type in relation to image
  - New Media and advertising
  - UI and app icons

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## Teaching delivery methods:

- Lectures
- Exercises

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## Comments:

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## Student obligations:

- Attending classes
- Submitting assignments and projects

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## Monitoring student work:

Activity	ECTS
Projects 1	1
Projects 2	1
Projects 3	1.2
Lab assignments	1.2

Homework	0.4
Written exam	1.2
<b>Total</b>	<b>6</b>

Teaching time is worth 2.5 ECTS points and it has been incorporated in time for assignments.

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## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Exam	20%
Lab assignments	15%
Project 1	15%
Project 2	15%
Project 3	15%
Participation	10%
Homework	10%
<b>Total:</b>	<b>100</b>

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## Required reading (at the moment of submitting the Study Programme Report):

- Ambrose, G., Harris, P., & Ball, N. (2019). *The Fundamentals of Graphic Design*. Bloomsbury Publishing.
- Stone, M. (2016). *A Field Guide to Digital Color*. CRC Press.
- Kipphan, H. (2014). *Handbook of Print Media: Technologies and Production Methods*. Springer Berlin Heidelberg.
- Lidwell, W., Holden, K., & Butler, J. (2010). *Universal Principles of Design, Revised and Updated: 125 Ways to Enhance Usability, Influence Perception, Increase Appeal, Make Better Design Decisions, and Teach through Design*. Rockport Publishers.
- James, D. (2011). *Crafting Digital Media: Audacity, Blender, Drupal, GIMP, Scribus, and other Open Source Tools*. Apress.
- Cohen, J., & Kenny, T. (2015). *Producing New and Digital Media: Your Guide to Savvy Use of the Web*. Taylor & Francis.

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## Additional reading (at the moment of submitting the Study Programme Report):

- Mestha, L. K., & Dianat, S. A. (2018). *Control of Color Imaging Systems: Analysis and Design*. CRC Press.
- Galer, M. (2007). *Photography: Foundations for Art & Design: the Creative Photography Handbook*. Focal.
- Lupton, E. (2010). *Thinking with Type, 2nd revised and expanded edition: A Critical Guide for Designers, Writers, Editors, & Students*. Princeton Architectural Press.

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## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Discrete Mathematics, COS-MATH-131
Course leader:	Kristijan Tabak
Study programme:	WMC
Course status:	Obligatory
Year:	First
ECTS points:	05
Teaching hours (L+S+E):	05 (5+0+0)

## Course Description

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### Course objectives:

- Gain knowledge of the mathematical concepts needed for understanding and analyzing programming.
- Discuss applications of mathematics to computer science and computer information systems.
- Use results of the theorems in Information Technology

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### Conditions for enrolment in the course:

None/prerequisite

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### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** create truth tables for complex logical expressions,
- CLO2:** evaluate complexity of a graph,
- CLO3:** analyze complex combinatorial enumeration problems,
- CLO4:** construct solutions of congruences over rings of numbers.

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### Course content:

- Number Systems
- Sets
- Logic

- Functions
- Counting
- Graph Theory
- Arrays
- Regular Sets

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## Teaching delivery methods:

- Lectures
- Workshops
- Exercises
- Remote learning
- Independent work
- Multimedia
- Mentoring
- Peer review

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## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

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## Monitoring student work:

Activity	ECTS
Assignment 1	1.5
Assignment 2	1.5
Assignment 3	1.5
In Class Quizz	0.5
<b>Total</b>	<b>5</b>

Teaching time has been incorporated in time for assignments.

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## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
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Assignment 1	30
Assignment 2	30
Assignment 3	30
In Class Quizz	10
<b>Total:</b>	<b>100</b>

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### Required reading:

- Molluzzo and Buckley, A First Course in Discrete Mathematics, Waveland Press, Long Grove, IL.
- Siegel, Schaum's Outline of Discrete Mathematics, McGraw-Hill, Columbus, OH.
- Wallis, W.D., A Beginner's Guide to Discrete Mathematics, Birkhauser, New York, NY

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### Additional reading:

- None

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### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes



### General Information

Course title: Introduction to Psychology

Course leader: Ana Havelka Mestrovic

Study programme: International Business, NMD, WMC

Course status: Obligatory

Year: First

ECTS points: 6

Teaching hours (L+S+E): 45 (3+0+0)

### Course Description

#### Course objectives:

- To have better understanding about different areas in psychology
- To provide understanding about relationships between individuals and environment
- To have better understanding about scientific approach in psychology

#### Conditions for enrolment in the course:

None

#### Expected learning outcomes of the course:

A student will be able to:

**CLO1:** Describe the concept and consequences from each of the 10 topic areas

**CLO2:** Identify the relationship between individuals, the environment, cognition and behaviour

**CLO 3:** Implement the major critical debates in psychology and connect scientific evidence from different sides of each debate

#### Course content:

The course aims to introduce students to the guiding principles of psychology and its methodology. The course provides an overview of basic concepts, theories, and research methods in psychology. Topics include thinking critically with psychological science; neuroscience and behaviour; sensation and perception; learning; memory; thinking, language,

and intelligence; motivation and emotion; personality; psychological disorders and therapy; and social psychology.

### Teaching delivery methods:

- Lectures
- Remote learning
- Independent work
- Project work

### Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

### Monitoring student work:

#### Activity ECTS

Exam 1

Exam 2 1.5

Exam 3 1.5

Research report 2.0

Group presentation 0.5

**Total 6**

Teaching time is worth 2 ECTS points, and it has been incorporated in time for assignments.

## Assessment and evaluation of student work

Components of evaluation:

Component	Points/%
Exam 1	20/20
Exam 2	20/20
Exam 3	20/20

<b>Research report</b>	30/30
<b>Group presentation</b>	10/10
<b>Total:</b>	<b>100/100</b>

## Required reading

Myers, D.G. & De Waal N. C. (2018). Psychology (12<sup>th</sup>Edition). New York: Worth Publishers.

## Additional reading:

- Materials from APA Monitor on Psychology (monthly edition)

## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	RIT 365: RIT Connections - YOPS-010
Course leader:	Marija Šušak Mišetić
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	First
ECTS points:	0
Teaching hours (L+S+E):	15 (1+0+0)

## Course Description

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### Course objectives:

- Develop broad-based professional competencies, including communication, critical thinking and collaboration.
- Enhance personal growth by using intentional strategies (tools).
- Connect with various RIT Croatia community members and understand their roles.

---

### Conditions for enrolment in the course:

None/prerequisite

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### Expected learning outcomes of the course:

A student will be able to:

- L01:** Integrate with the RIT Croatia community
- L02:** Discuss their ownership and accountability during their educational experience.
- L03:** Identify strategies to enhance their personal academic growth through tools that aid in decision making throughout their education.
- L04:** Engage in reflective dialogue based on their knowledge and first-year experiences.

---

### Course content:

- Engage in reflective dialogue/discussion
- Attend Super Speaker event

- Reflective Coaching session
- Analyse and construct arguments
- Reflective writing

---

## Teaching delivery methods:

- Lectures
- Independent work
- Coaching
- Exercises

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions
- Coaching session

---

## Assessment and evaluation of student work

### Components of evaluation:

<b>Component</b>	<b>Points/%</b>
Reflection Paper 1	20%
Reflection Paper 2	20%
Reflection Paper 3	20%
Reflection Paper 4	20%
Coaching	10%
6 Word Story	10%
<b>Total:</b>	<b>100</b>

---

## Required reading (at the moment of submitting the Study Programme Report):

- RIT Croatia Student Handbook 2022-23

- RIT Croatia Cooperative Education Handbook 2022-23

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Additional reading (at the moment of submitting the Study Programme Report):

- N/A

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Number of copies of required reading in relation to the number of students who currently attend a course:

Materials available on RIT Croatia website.

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Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Computational Problem Solving in the Information Domain II
Course leader:	Alan Mutka
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	First
ECTS points:	6
Teaching hours (L+S+E):	90 (4+0+2)

## Course Description

### Course objectives:

- Students will learn the Event Model and use the model to design and implement interactive graphical interfaces.
- Students will be introduced to basic algorithms used to process data structures
- Students will learn the Multithreading model and use the model to design and implement advanced processing methods
- Students will be introduced to the relational information model Students will learn to test software solutions
- Students will be introduced to and will use the client/server processing model
- Students will learn basic software development and project management practices

### Conditions for enrolment in the course:

ISTE-120 or GCIS-123 or equivalent course

### Expected learning outcomes of the course:

A student will be able to:

**CLO1:** Implement interactive graphical user interfaces using the event model

**CLO2:** Build algorithms for processing binary and text-based data structures

**CLO3:** Create advanced processing methods using multiple threads

Commented [1]: @igccad@g.rit.edu Should we mention GCIS-123 or equivalent course (as stated on the main Rochester page)

**CLO4:** Design programming solutions using the client-server paradigm

**CLO5:** Use common data structures in programming solutions

**CLO6:** Apply basic software development, team work, and project management principles and practices

---

## Course content:

### Concepts of Graphical User Interfaces (GUI)

- GUI components
- GUI layouts
- Designing Event Handlers
- Keyboard and Mouse generated Events

### File I/O

- Exception handling
- Byte, binary, stream I/O

### Threading Concepts

- Thread States and Priorities
- Thread Synchronization
- Multi-threading

### Network Programming

- Client/Server programming

### Data Representation

- Stacks/Queues/Linked Lists
- Data Structures and Algorithm Design
- Recursion, Generic programming

### Program Design and Implementation Concepts

- Using Packages and Interfaces

### Project Management

- Design Process
- Documentation
- Task definition, resource assignment and tracking



---

## Teaching delivery methods:

- Lectures
- Independent work
- Laboratory
- Mentoring
- Peer review
- Project work

---

## Student obligations:

- Attending classes
- Submitting assignments
- Participate in discussions

---

## Monitoring student work:

Activity	ECTS
Practical 1	0.48
Practical 2	0.9
Practical 3	0.6
Quizzes	0.36
Laboratory	1.14
Homework	1.02
Project	1.5
<b>Total</b>	<b>6</b>

Teaching time is worth 2 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Practical 1	8
Practical 2	15
Practical 3	10

QUI	6
Laboratory	19
Homework	17
Project	25
<b>Total:</b>	<b>100</b>

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### Required reading:

- Horstmann, C., & Safari, an O'Reilly Media Company. (2009). Big java, 4th edition (1st ed.). Wiley.

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### Additional reading:

- Horstmann, C., & Safari, an O'Reilly Media Company. (2018). Core java volume I--fundamentals, 11th edition (1st ed.). Pearson
- Horstmann C, Safari, an O'Reilly Media Company. Core Java, Vol. II-Advanced Features, 12th Edition. 1st ed. Pearson; 2022.
- Horstmann, C., & Safari, an O'Reilly Media Company. (2011). Java for everyone: Compatible with java 5, 6, and 7, 2nd edition (1st ed.). Wiley.

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### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Web & Mobile II
Course leader:	Ante Poljičak
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	First
Number of ECTS credits:	6
Teaching hours (L+S+E):	45 (2+0+1)

## Course Description

---

### Course objectives:

The objective of this course is to provide students with the following knowledge and skills:

- Create valid web pages using HTML5 and CSS3
- Use client side programming such as JavaScript and the DOM
- Implement server-side programming using PHP
- Identification and execution of basic principles of graphic design: contrast, alignment, proximity, repetition, effective use of colors and types of letters
- website performance for use on different browsers with different screen sizes of different resolutions across different devices
- Integrate front-end, back-end and database to develop dynamic and interactive web pages.

---

### Conditions for enrolment in the course:

- Computational Problem Solving in the Information Domain I
- Web & Mobile I or NMD Interactive I

---

### Expected learning outcomes of the course:

A student will be able to:

- LO1:** Create dynamic and interactive web pages using client side programming such as JavaScript and the document object model
- LO2:** Use server side programming and databases to improve site performance, modularization, and separation of logic from data.

**LO3:** Use the HTTP protocol to properly submit, validate and process user input data

**LO4:** Create medium scale web sites combining information design, graphics, and markup languages.

**LO5:** Plan, design and document a web site as part of a team.

**LO6:** Integrate front-end, back-end and database in a medium scale full-stack development project.

---

## Course content:

This course builds on the basics of web page development that are presented in Web and Mobile I or Interactive 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.

- Intermediate Design
- User Experience and Usability
- Information Architecture
- Navigation
- Sites vs. Pages
- Introduction to N-Tiered Systems
- Introduction to Web Client Programming
- Basic Document Object Model (DOM) manipulation
- Programmed manipulation of styles
- HTTP
- GET/POST generation
- Forms and validation
- Introduction to Web Server Programming
- Modularization
- Basic database access and use
- Consuming and producing data

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia and network

---

## Comments:

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## Student obligations:

Regular class attendance, mandatory lectures review, independent preparation of solutions of exercises, independent development of the project, group work on group project, final exam

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## Monitoring student work:

Activity	ECTS
Group project	2
Individual project	2
Lab exercises	1
Final exam	1
<b>Total</b>	<b>6</b>

Teaching time is worth 2.5 ECTS points, and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Individual project	30 %
Group project	30 %
Lab exercises	20 %
Final exam	20 %
<b>Total:</b>	<b>100</b>

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## Required reading (at the moment of submitting the Study Programme Report):

- Frain, B. (2020). Responsive Web Design with HTML5 and CSS: Develop future-proof responsive websites using the latest HTML5 and CSS techniques. Packt Publishing.
- Nixon, R. (2021). Learning PHP, MySQL & JavaScript. O'Reilly Media.

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## Additional reading (at the moment of submitting the Study Programme Report):

- Beard, J., George, J., & Walker, A. (2020). *The Principles of Beautiful Web Design*. SitePoint Pty, Limited.
- Robbins, J. (2018). *Learning Web Design: A Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics*. O'Reilly Media.
- Felke-Morris, T. (2018). *Web Development and Design Foundations with HTML5*. Pearson.
- Dean, J. (2018). *Web Programming with HTML5, CSS, and JavaScript*. Jones & Bartlett Learning.
- Web Development Tutorials available at W3Schools
- Additional materials will be available through the MyCourses student system and through the RIT Library available for all students

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## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Introduction to Database and Data Modeling, ISTE-230
Course leader:	Aleksander Radovan
Study programme:	WMC
Course status:	Obligatory
Year:	First
ECTS points:	6
Teaching hours (L+S+E):	60 (2+0+2)

## Course Description

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### Course objectives:

- 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
- Read and interpret an Entity-Relationship (E-R) model diagram and map the E-R model into a relational model.
- Apply the techniques of normalization to a relational model.
- Implement a relational model and manipulate the data and structure using SQL.
- Apply relational algebra operations to manipulate data stored in relational form.

---

### Conditions for enrolment in the course:

None, intended for 2nd year WMC students

### Expected learning outcomes of the course:

A student will be able to:

**CL01:** Design a new data model based on entities in an information system

**CL02:** Create relationships between database tables (1:1, 1:N, M:N)

**CL03:** Examine the data model with first, second, third or Boyce-Codd normal form

**CL04:** Develop a SQL query that fetches, saves, updates or delete rows from a database

**CLO5:** Formulate SQL query in a way to use transactions

---

## Course content:

- *Conceptual Foundation of Data Organization*
  - Logical data modeling
  - Physical data modeling
- *Conceptual Foundation of the Relational Model*
  - Keys and referential integrity
  - Functional dependencies and normalization
- *Data Modeling Techniques*
  - The motivation for data modeling
  - Basic Entity-Relationship Diagram (ERD) elements and components
  - Basic relationships
  - Reading and interpreting an ERD
- *Relational Mapping and Normalization*
  - Rules for implementing relationships from an ERD within a relational model
  - Constructing a relational model from an ERD
  - Evaluating a relational model by applying normalization theory
- *Relational Algebra and SQL*
  - SQL Data Definition Language (DDL) statements
  - Introduction to database management systems
  - Using SQL DDL statements to create a physical model
  - SQL Data Manipulation Language (DML) statements
  - Using SQL DML statements to query a physical model
  - Relational algebra operations using SQL
- *Advanced Topics (if time allows)*
  - Backups and recovery
  - Transaction concepts
  - Complex queries
  - Information assurance



---

## Teaching delivery methods:

- Lectures
- Guest Lectures
- Demonstration of practical assignments

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

---

## Monitoring student work:

Activity	ECTS
Homeworks	2.4
Midterm Exam	1.8
Final Exam	1.8
<b>Total</b>	<b>6</b>

Teaching time is worth 2 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Homeworks	40
Midterm Exam	30
Final Exam	30
<b>Total:</b>	<b>100</b>

---

## Required reading:

- Kroenke, David M. and Auer, David J., *Database Concepts* (7<sup>th</sup> Edition) Pearson Prentice-Hall, Upper Saddle River, NJ, 2014. ISBN-13: 978-0133544626

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## Additional reading:

- Fehily, Chris, *SQL Visual QuickStart Guide* (3<sup>rd</sup> Edition), Peachpit Press, Berkeley CA, 2008.  
ISBN-13: 978-0321553577

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## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Observation of lectures
- Assessment of the achievement of learning outcomes through homeworks and exams

## General Information

Course title:	Applied Calculus
Course leader:	Kristina Soric
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	First
ECTS points:	5
Teaching hours (L+S+E):	60 (2+0+2)

## Course Description

---

### Course objectives:

- 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 life practice

---

### Conditions for enrolment in the course:

None

---

## Expected learning outcomes of the course:

A student will be able to:

- CLO 1:** Develop understanding of function, its continuity, limit, derivative and integral
- CLO 2:** Analyze function continuity
- CLO 3:** Analyze function limit
- CLO 4:** Utilize derivative to study increasing and decreasing functions, convexity and concavity, extreme and inflection points
- CLO 5:** Utilize integrals to calculate areas
- CLO 6:** Utilize mathematical concepts to model and solve problems from everyday environment
- CLO 7:** Interpret the solutions of solved problems according to the discussions in the classroom

---

## Course content:

### (1) DERIVATIVES

- (a) Limits and continuity
- (b) Definition of the derivative
- (c) Rules of differentiation
- (d) Tangent lines
- (e) Higher order derivatives
- (f) Implicit differentiation
- (g) Derivatives of exponential and logarithmic functions

### (2) APPLICATIONS OF THE DERIVATIVE

- (a) Related rates
- (b) Curve sketching
- (c) Optimization
- (d) Applications of exponential and logarithmic functions

### (3) INTEGRATION

- (a) Antiderivatives and the indefinite integral
- (b) Area and the definite integral
- (c) Fundamental theorem of calculus
- (d) Evaluating the definite integral
- (e) Substitution

## (4) APPLICATIONS OF THE INTEGRAL

- (a) Area between curves
- (b) Applications of the definite integral to business and economics
- (c) Applications of the definite integral to life sciences
- (d) Numerical integration

## (5) ADDITIONAL TOPICS

- (a) Introduction to the solution of differential equations
- (b) Separable differential equations
- (c) Applications of differential equations
- (d) Sequences
- (e) Geometric series

---

### Teaching delivery methods:

- Lectures
- Exercises
- Remote learning
- Independent work

---

### Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

---

### Monitoring student work:

Activity	ECTS
Exam I	1.50
Exam II	1.50
Exam III	1.50
Quiz 1	0.05
Quiz 2	0.05
Quiz 3	0.05
Quiz 4	0.05
Quiz 5	0.05
Quiz 6	0.05

Quiz 7	0.05
Quiz 8	0.05
Quiz 9	0.05
Quiz 10	0.05
<b>Total</b>	<b>5</b>

Teaching time is worth 2 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

<b>Component</b>	<b>Points %</b>
Exam I	30
Exam II	30
Exam III	30
Quiz 1	1
Quiz 2	1
Quiz 3	1
Quiz 4	1
Quiz 5	1
Quiz 6	1
Quiz 7	1
Quiz 8	1
Quiz 9	1
Quiz 10	1
<b>Total</b>	<b>100</b>

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### Required reading:

- Tan, S. T. (2015). Applied Calculus for the Managerial, Life, and Social Sciences, 10<sup>th</sup> Edition, Brooks/Cole

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### Additional reading:

- Handouts and readings will be made available to students throughout the semester by the instructor
- Video material will be made available to students throughout the semester by the instructor

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Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Critical Reading and Writing
Course leader:	Jakob Patekar
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	First
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

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### Course objectives:

- Improve critical reading and writing skills
- Think critically and articulate, support, defend, and refute an argument
- Gain insight into the writing process
- Develop literary practices
- Emphasize the principles of intellectual property and academic honesty
- Engage in peer review

---

### Conditions for enrolment in the course:

Introduction to Academic English – passed or tested out

---

### Expected learning outcomes of the course:

A student will be able to:

**CLO1:** Critically analyze a variety of texts.

**CLO2:** Evaluate peer work.

**CLO3:** Use APA style in citing and referencing.

**CLO4:** Compose and revise texts in standard English using appropriate style and rhetorical strategy.



---

## Course content:

- Analyzing and constructing arguments
- Cognitive bias and fake news
- Punctuation
- Paragraphs
- Word choice and style
- Persuasive writing
- Working with sources
- Giving feedback

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia
- Peer review

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Fallacies Quiz	0.25
Reading Assignment 1	0.5
Writing Assignment 1	0.5
Punctuation Quiz	0.5
Reading Assignment 2	0.5
Writing Assignment 2	0.5
Word Choice Quiz	0.5
APA Quiz	0.5
Persuasive Essay Draft	0.5
PE Peer Review	0.25

Persuasive Essay Final 0.5

**Total 5**

Teaching time is worth 1.5 ECTS points and has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Fallacies Quiz	5
Reading Assignment 1	10
Writing Assignment 1	10
Punctuation Quiz	10
Reading Assignment 2	10
Writing Assignment 2	10
Word Choice Quiz	10
APA Quiz	10
Persuasive Essay Draft	10
PE Peer Review	5
Persuasive Essay Final	10
<b>Total:</b>	<b>100</b>

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### Required reading:

- Hacker, D., & Sommers, N. (2015). *A writer's reference* (8<sup>th</sup> ed.). Boston, MA: Bedford/St. Martin's.
- Lunsford, A. A. (2010). *The St. Martin's handbook*. Boston, MA: Bedford/St. Martin's.

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### Additional reading:

- Anker, S. (2010). *Real writing with readings*. Boston, MA: Bedford/St. Martin's.
- Casagrande, J. (2014). *The best punctuation book, period*. Berkley, CA: Ten Speed Press.
- Scarry, S., & Scarry, J. (2011). *The writer's workplace with readings. Building college writing skills*. Boston, MA: Wadsworth.

- VanderMey, R., Meyer, V., Van Rys, J., & Sebranek, P. (2012). The college writer: A guide to thinking, writing, and researching. Boston, MA: Wadsworth.

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## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

# **YEAR 2 – COURSE DESCRIPTIONS**

## General Information

Course title:	Networking Essentials for Developers
Course leader:	Toni Njirić
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	Second
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

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)

---

### Course objectives:

This course will provide students with the network knowledge needed to develop and design software applications. At the end of the course, students should be conversant in:

#### Network Communications

- TCP/IP and OSI models
  - Why do we have them?
  - What are they used for?
  - What are the security implications?
- Physical and Data link communications
  - How do I get data from point A to point B?
  - How do I know it is from this device?
  - How do I send it to everyone or a specific person?
- Network and Transport Layers
  - What is an IP address?

- What is DHCP and DNS? Why do we use it? How does it impact my coding?
- How do we use it?
- What is private versus public IP addresses?
- What about firewalls and communications?
- What are port numbers and sockets? How do I create code that allows for communication that is secure or direct?
- Communications
  - How do I know how the data is being processed or communicating?
  - What affect does routing over multiple network topologies have on communications?
  - How does on demand (client) versus server (passive listening) work when sending and receiving data?

---

## Conditions for enrolment in the course:

ISTE-121

---

## Expected learning outcomes of the course:

A student will be able to:

**CLO1:** Analyze packets and identify differences and their impact on routing and switching

**CLO2:** Explain the functions of the transport layer (ports, sockets)

**CLO3:** Analyze the differences between client (demand) and server (passive listening) uses of the transport layer

**CLO4:** Describe the purpose and operation of name resolution

**CLO5:** Describe authentication methods and differentiate authentication from authorization

**CLO6:** Analyze vulnerabilities in the TCP/IP protocol suite and countermeasures to these vulnerabilities

---

## Course content:

- Communications Models (OSI and TCP/IP)
- The physical and data link layers: point to point communication (MAC addressing)
- The network layer: end to end communication (IP addressing)
- The transport layer: process to process communication (port numbers)
- The programmer's view of the transport layer (sockets)
- Name resolution in the internet
- Authentication mechanism overview plus authentication vs. authorization
- Security vulnerabilities in the TCP/IP stack

---

## Teaching delivery methods:

- Lectures

- Exercises
- Independent work
- Mentoring
- Critiques

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

---

## Monitoring student work:

Activity	ECTS
Midterm Exam	1.25
Final Exam	1.25
Quizzes	1
Homework #1	0.75
Homework #2	0.75
<b>Total</b>	<b>5</b>

Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Midterm Exam	25
Final Exam	25
Quizzes	20
Homework #1	15
Homework #2	15
<b>Total:</b>	<b>100</b>

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## Required reading:

- Beasley J, Nilkaew P, Safari, an O'Reilly Media Company. Networking Essentials, Third Edition. 1st ed. Pearson IT Certification; 2012

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## Additional reading:

- 

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## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes



## General Information

Course title:	ISTE-222 Computational Problem Solving for Information Domain III
Course leader:	dr. sc. Branko Mihaljević, prof.
Study programme:	Web and Mobile Computing (WMC) Program
Course status:	Obligatory
Year:	Second
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

The third course in the programming sequence is expanding the student's knowledge base of higher-level programming concepts, including data storage and memory management, abstract data types, linear and non-linear data structures, algorithm analysis (Big-O notation) and development, application performance, and a greater understanding of how complex software can more easily be designed.

---

### Course objectives:

- Advance the student's understanding of the use of data structures in designing a system and other programming related concepts, including algorithm development, proper application of data structures, software performance, and a greater understanding of advanced programming algorithms, fundamental for developing more efficient software in less time.
- Understand and be able to use different data structures and analyze the complexities of applied algorithms
- Identify different forms of data records in the computer and know how to use them depending on the purpose and need
- Assess aspects and ways of memory management and ways of storing different data structures
- Analyze programming algorithms in computer programs in the context of their execution time and efficiency and evaluating their complexity (Big-O)
- Distinguish, compare, and apply different more advanced data structures in problem solving
- Develop different algorithms over data structures with emphasis on sorting and searching

---

## Conditions for enrolment in the course:

ISTE-121 or GCIS-124 or equivalent course

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## Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Compare different formats of digital data in the computer depending on their need and purpose
- CLO2:** Assess various memory management methods and techniques of storing different data structures
- CLO3:** Analyze programming algorithms in the context of their execution time and efficiency by evaluating their complexity (Big-O)
- CLO4:** Develop a computational problem solution using linear data structures and associated algorithms
- CLO5:** Develop a computational problem solution using non-linear (hierarchical) data structures and associated algorithms

---

## Course content:

Course topics include:

- Number systems
- Memory Management (in Java)
- Java and OOP Review
- Data Structures and Abstract Data Types
- Algorithm Analysis and Performance / Efficiency
- Scaling Applications, Timing for Analysis, and Big-O
- Linear Data Structures, including Arrays, Linked Lists (Singly, Doubly, Circularly), Array Lists, Dynamic Array, Positional Lists, Stack, Queues and Deques, and others
- Non-linear (Hierarchical) Data Structures, including different Trees, Maps and Hash Tables, Search Trees, Priority Queues, Graphs and others
- Various Sorting and Searching Algorithms

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

---

## Monitoring student work:

Activity	ECTS
Exercises	3.6
Midterm Exam Theory	0.6
Midterm Exam Practical	0.6
Final Exam Theory	0.6
Final Exam Practical	0.6
<b>Total</b>	<b>6</b>

Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments, projects and preparing for the exams.

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## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Exercises	60
Midterm Exam Theory	10
Midterm Exam Practical	10
Final Exam Theory	10
Final Exam Practical	10
<b>Total:</b>	<b>100</b>

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## Required reading:

- Cutajar, J. (2018). Beginning Java Data Structures and Algorithms. Packt. – available as eBook in RIT Library

or

- Goodrich, M. T., Tamassia, R & Goldwasser M. H. (2014). Data Structures and Algorithms in Java. Wiley. ISBN: 978-1118771334

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## Additional reading:

- Althoff, C. (2021). The Self-taught Computer Scientist: The beginner's guide to data structures and algorithms. John Wiley & Sons. – optional and available as eBook in RIT Library
- Downey, A. B. (2017). Think Data Structures: Algorithms and information retrieval in java (1st ed.). O'Reilly Media. – optional and available as eBook in RIT Library
- Samoylov, N. (2018). Introduction to programming: Learn to program in Java with data structures, algorithms, and logic. Packt. – optional and available as eBook in RIT Library
- Chawdhuri, D. R. (2017). Java 9 data structures and algorithms: A step-by-step guide to data structures and algorithms (1st ed.). Packt. – optional and available as eBook in RIT Library
- Lafore, R. (2017). Data structures and algorithms in Java, 2nd edition. Sams. – optional and available as eBook in RIT Library
- Streib, J. T., Soma, T. (2017). Guide to data structures: A concise introduction using Java. Springer. – optional and available as eBook in RIT Library

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## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	IST Second Year Designing the User Experience, ISTE-260
Course leader:	Aleksander Radovan
Study programme:	WMC
Course status:	Obligatory
Year:	Second
ECTS points:	5
Teaching hours (L+S+E):	60 (2+0+2)

## Course Description

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### Course objectives:

- Analysis and decomposition of user requirements
- Using Research Methodologies, Scenarios, Personas and universal/global/accessibility/assistive technologies to improve the User Experience of a product
- Designing user interfaces by using appropriate tools
- Using diffusion of Innovations, Product Lifecycle, Cognitive Psychology, Heuristic evaluations, Mobile/Pervasive technologies and Usability Testing to create a product and use best practice to improve it's User Experience

---

### Conditions for enrolment in the course:

None, intended for 2nd year WMC students

### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Create low fidelity sketches of a user interface design
- CLO2:** Construct wireframes of screens for a mobile, desktop or web application
- CLO3:** Suggest usability testing procedures for testing a design of a product
- CLO4:** Formulate characteristics of personas for using a product

---

## Course content:

- Requirement Analysis
- Research Methodologies
- Usability Goals
- Personas
- Task Analysis and decomposition
- Universal/Global/accessibility/Assistive Technologies
- GUI design
- Diffusion of Innovations
- Design life cycles
- Cognitive Psychology
- User Profiles
- Heuristic Evaluation
- Mobile/Pervasive
- Usability Testing

---

## Teaching delivery methods:

- Lectures
- Guest Lectures
- Demonstration of practical assignments

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

---

## Monitoring student work:

Activity	ECTS
Individual Project	2
Final Presentation	0.5
Assignments	2
Video	0.5
<b>Total</b>	<b>5</b>

Teaching time is worth 2 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Individual project	40
Final Presentation	10
Assignments	40
Video assignment	10
<b>Total:</b>	<b>100</b>

---

### Required reading:

- Norman, Donald. *The Design of Everyday Things*. NY: Currency and Doubleday, 2002. ISBN 0-385-26774-6

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### Additional reading:

- Saul Greenbert, Sheelagh Carpendale, Nicolai Marquardt, Bill Buxton. *Sketching the User Experiences: The workbook*. Morgan Kaufmann Publishers, 2011. ISBN 0-123-81959-8
- Jeff Johnson. *Designing with the mind in Mind*. Morgan Kaufmann Publishers, 2ed. 2011. ISBN:0-124-07914-8

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### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Observation of lectures
- Assessment of the achievement of learning outcomes through individual assignments, group assignments and individual project

## General Information

Course leader:	Jakob Patekar
Course title:	Writing Seminar (UWRT.150)
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	First
Number of ECTS credits:	5
Teaching hours (L+S+E):	3+0+0

## Course Description

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### Course objectives:

- develop proficiency in analytical and rhetorical reading and writing and critical thinking
  - stimulate students' writing for a variety of contexts and purposes
  - develop academic research and literary practices
  - emphasize teacher-student conferencing, self-assessment, class discussion, and peer review
  - emphasize the principles of intellectual property and academic integrity for academic and future professional writing
- 

### Conditions for enrolment in the course:

Passed Critical Reading & Writing

---

### Expected learning outcomes of the course:

A student will be able to:

- LO1:** Examine a variety of intellectually challenging non-fiction texts.
  - LO2:** Connect the ideas of others to one's own ideas.
  - LO3:** Criticize peer work.
  - LO4:** Produce and revise a research project in written and oral form.
- 

### Course content:

- paper structure
- conducting research
- finding sources



- identifying credible sources
- integrating sources
- citing and referencing
- peer review
- reporting findings
- presenting research

---

## Teaching delivery modes:

- Lectures
- Seminars and workshops
- Exercises
- Remote learning
- Field work
- Independent work
- Multimedia and network
- Laboratory
- Mentoring

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Assessment and evaluation of student work

### Components of evaluation:

<b>Component</b>	<b>Points/%</b>
Research 101	10
Introduction	5
Working Bibliography	5
Credibility Quiz	10
Integration Quiz	10
First Draft	10
Peer Review 1	5
Second Draft	15

Peer Review 2	5
Paper Presentation	10
Final Paper	15
<b>Total:</b>	<b>100</b>

### Constructive alignment table:

	As 1	As 2	As 3	As 4	As 5	As 6	As 7	As 8	As 9	As 10	As 11	ECTS	Pts
ECTS	.75	.25	.25	.5	.25	.5	.25	.75	.25	.5	.75		
LO1	X			X								1	15
LO2					X	X		X			X	1	22
LO3							X		X			.5	20
LO4	X	X	X			X		X		X	X	2.5	53

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### Required reading (at the moment of submitting the Study Programme Report):

- American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7<sup>th</sup> ed.).
- Hacker, D., & Sommers, N. (2015). *A writer's reference* (8<sup>th</sup> ed.). Bedford/St. Martin's.
- Scarry, S., & Scarry, J. (2011). *The writer's workplace with readings. Building college writing skills*. Wadsworth.
- Winkler, A. C., & McCuen-Metherell, J. R. (2008). *Writing the research paper. A handbook*. Wadsworth.

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### Additional reading (at the moment of submitting the Study Programme Report):

- Axelrod, R. B., & Cooper, C. R. (2010). *St. Martin's guide to writing*. Bedford/St. Martin's.
- McWhorter, K. T. (2012). *Successful College Writing. Skills. Strategies. Learning Styles*. Bedford/St. Martin's.
- Turabian, K. L. (2013). *A manual for writers of research papers, theses, and dissertations*. The University of Chicago Press.

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Number of copies of required reading in relation to the number of students who currently attend a course:

Materials available at RIT online library The Wallace Center.

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Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Beginning Spanish I
Course leader:	Barbara Perić
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	Second
ECTS points:	5
Teaching hours (L+S+E):	60 (4+0+0)

## Course Description

---

### Course objectives:

- Provide students with a sound basis for learning to communicate effectively and accurately in Spanish as it is spoken and written today
- Practice all four basic language skills - listening, speaking, reading, and writing
- Give opportunities for student-student interaction and self-expression in realistic situations
- Emphasize cultural aspects of contemporary life and culture in Spain and Spanish speaking countries
- Engage students in in-class dialogues and readings

---

### Conditions for enrolment in the course:

N/A

---

### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Produce short and simple texts in written form about real life situations.
- CLO2:** Select appropriate grammar and vocabulary at beginner level.
- CLO3:** Combine a range of vocabulary to communicate effectively at beginner level.
- CLO4:** Differentiate some aspects of Hispanic life and culture.

## Course content:

- narrating and describing simple things and situations from real life in the present tense
- communicating and understanding greetings and daily class conversation and using expressions of common courtesies
- articulating basic needs, emotions, and attitudes in a short question/answer format
- providing autobiographical information, interests, abilities, likes and dislikes
- practicing basic spoken Spanish on topics presented in class
- reading passages from the textbook
- expressing ideas coherently at beginner level in writing
- gaining basic understanding of some aspects of Hispanic life and culture

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia
- Remote learning
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Quiz 1	0.6
Quiz 2	0.6
Quiz 3	0.6
Written Assignments	1.4
Oral In-Class Examinations	0.8
Final Oral Examination	0.5
Homework	0.5

Total 5

Teaching time is worth 2 ECTS points and it has been incorporated in time for assignments

---

## Assessment and evaluation of student work

Components of evaluation:

Component	Points/%
Quiz 1	12
Quiz 2	12
Quiz 3	12
Written Assignments	28
Oral In-Class Examinations	16
Final Oral Examination	10
Homework	10
<b>Total:</b>	<b>100</b>

---

## Required reading:

- Hershberger, R., Navey-Davis, S. & Borrás Álvarez, G. (2016). *Plazas, Lugar de encuentros* (5<sup>th</sup> ed.), Heinle Cengage Learning.

---

## Additional reading:

- Acevedo A, I. (2013). *Spanish Reader for Beginners-Elementary*. CreateSpace Independent Publishing Platform

---

## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Beginning French I
Course leader:	Tea Kovačević
Study programme:	IB
Course status:	Obligatory
Year:	Second
ECTS points:	5
Teaching hours (L+S+E):	60 (4+0+0)

## Course Description

---

### Course objectives:

- Provide students with a sound basis for learning to communicate effectively and accurately in French as it is spoken and written today
- Practice all four basic language skills - listening, speaking, reading, and writing
- Give opportunities for student-student interaction and self-expression in realistic situations
- Emphasize cultural aspects of contemporary life and culture in French and French-speaking countries
- Engage students in in-class dialogues and readings

---

### Conditions for enrolment in the course:

N/A

---

### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Produce short and simple texts in written form about real life situations.
- CLO2:** Select appropriate grammar and vocabulary at beginner level.
- CLO3:** Combine a range of vocabulary to communicate effectively at beginner level.
- CLO4:** Differentiate some aspects of French life and culture.

## Course content:

- narrating and describing simple things and situations from real life in the present tense
- communicating and understanding greetings and daily class conversation and using expressions of common courtesies
- articulating basic needs, emotions, and attitudes in a short question/answer format
- providing autobiographical information, interests, abilities, likes and dislikes
- practicing basic spoken French on topics presented in class
- reading passages from the textbook
- expressing ideas coherently at beginner level in writing
- gaining basic understanding of some aspects of French life and culture

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia
- Remote learning
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Quiz 1	0.6
Quiz 2	0.6
Quiz 3	0.6
Written Assignments	1.4
Oral In-Class Examinations	0.8
Final Oral Examination	0.5
Homework	0.5



Total 5

Teaching time is worth 2 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Quiz 1	12
Quiz 2	12
Quiz 3	12
Written Assignments	28
Oral In-Class Examinations	16
Final Oral Examination	10
Homework	10
<b>Total:</b>	<b>100</b>

---

### Required reading:

- Manley, J., Smith, S., McMinn, J., & and Prévost, 8. (2011). *Horizons*. 6<sup>th</sup> edition.

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### Additional reading:

- Les 500 Exercices de phonétique A1/A2 – Hachette, 2009
- Nouvelle grammaire du français: Cours de Civilisation Française de la Sorbonne – Y. Dellatour, D. Jennepin, M. Léon-Dufour, B. Teyssier, Hachette, 2004

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### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Beginning Italian I
Course leader:	Ana Gudelj
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	Second
ECTS points:	5
Teaching hours (L+S+E):	60 (4+0+0)

## Course Description

---

### Course objectives:

- Provide students with a sound basis for learning to communicate effectively and accurately in Italian as it is spoken and written today.
- Practice all four basic language skills - listening, speaking, reading, and writing.
- Give opportunities for student-student interaction and self-expression in realistic situations.
- Emphasize cultural aspects of contemporary life and culture in Italy and Italian speaking countries.
- Engage students in in-class dialogues and readings.

---

### Conditions for enrolment in the course:

N/A

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### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Produce short and simple texts in written form about real life situations.
- CLO2:** Select appropriate grammar and vocabulary at beginner level.
- CLO3:** Combine a range of vocabulary to communicate effectively at beginner level.
- CLO4:** Differentiate some aspects of Spanish life and culture.

## Course content:

- narrating and describing simple things and situations from real life in the present tense
- communicating and understanding greetings and daily class conversation and using expressions of common courtesies
- articulating basic needs, emotions, and attitudes in a short question/answer format
- providing autobiographical information, interests, abilities, likes and dislikes
- practising basic spoken Italian on topics presented in class
- reading passages from the textbook
- expressing ideas coherently at beginner level in writing
- gaining basic understanding of some aspects of Italian life and culture

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia
- Remote learning
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Quiz 1	0.6
Quiz 2	0.6
Quiz 3	0.6
Written Assignments	1.4
Oral In-Class Examinations	0.8

Final Oral Examination	0.5
Homework	0.5

**Total** 5

Teaching time is worth 2 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Quiz 1	12
Quiz 2	12
Quiz 3	12
Written Assignments	28
Oral In-Class Examinations	16
Final Oral Examination	10
Homework	10
<b>Total:</b>	<b>100</b>

---

### Required reading:

- Merlonghi, F., Merlonghi, F., Tursi, J., & O'Connor, B. (2012). *Oggi in Italia: a first course in Italian* (9<sup>th</sup> ed.). Heinle Cengage Learning.
- Merlonghi, F., Merlonghi, F., Tursi, J., & O'Connor, B. (2012). *Oggi in Italia: Student activities manual* (9<sup>th</sup> ed.). Heinle Cengage Learning.

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### Additional reading:

- Cozzarelli, J.M. (2020). *Sentieri*. Vista Higher Learning.
- Manella, C. (2005). *Sì! L'italiano in mano. Manuale e corso pratico di italiano per stranieri. Livello elementare, intermedio e superiore*. Progetto Lingua Edizioni.

---

Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Beginning Russian I
Course leader:	Ana Peković
Study programme:	IB
Course status:	Obligatory
Year:	Second
ECTS points:	5
Teaching hours (L+S+E):	60 (4+0+0)

## Course Description

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### Course objectives:

- Provide students with a sound basis for learning to communicate effectively and accurately in Russian as it is spoken and written today
- Practice all four basic language skills - listening, speaking, reading, and writing
- Give opportunities for student-student interaction and self-expression in realistic situations
- Emphasize cultural aspects of contemporary life and culture in Russian and Russian-speaking countries
- Engage students in in-class dialogues and readings

---

### Conditions for enrolment in the course:

N/A

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### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Produce short and simple texts in written form about real life situations.
- CLO2:** Select appropriate grammar and vocabulary at beginner level.
- CLO3:** Combine a range of vocabulary to communicate effectively at beginner level.
- CLO4:** Differentiate some aspects of Russian life and culture.

## Course content:

- narrating and describing simple things and situations from real life in the present tense
- communicating and understanding greetings and daily class conversation and using expressions of common courtesies
- articulating basic needs, emotions, and attitudes in a short question/answer format
- providing autobiographical information, interests, abilities, likes and dislikes
- practicing basic spoken Russian on topics presented in class
- reading passages from the textbook
- expressing ideas coherently at beginner level in writing
- gaining basic understanding of some aspects of Russian life and culture

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia
- Remote learning
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Quiz 1	0.6
Quiz 2	0.6
Quiz 3	0.6
Written Assignments	1.4
Oral In-Class Examinations	0.8
Final Oral Examination	0.5
Homework	0.5

Total 5

Teaching time is worth 2 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

Components of evaluation:

Component	Points/%
Quiz 1	12
Quiz 2	12
Quiz 3	12
Written Assignments	28
Oral In-Class Examinations	16
Final Oral Examination	10
Homework	10
<b>Total:</b>	<b>100</b>

---

## Required reading:

- Robin et al. *Golosa – A basic course in Russian*, 5<sup>th</sup> edition. Pearson.

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## Additional reading:

- 

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## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes



## General Information

Course title:	Beginning German I
Course leader:	Nikolina Božinović
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	Second
ECTS points:	5
Teaching hours (L+S+E):	60 (4+0+0)

## Course Description

---

### Course objectives:

- Provide students with a sound basis for learning to communicate effectively and accurately in German as it is spoken and written today
- Practice all four basic language skills - listening, speaking, reading, and writing
- Give opportunities for student-student interaction and self-expression in realistic situations
- Emphasize cultural aspects of contemporary life and culture in German speaking countries
- Engage students in in-class dialogues and readings

---

### Conditions for enrolment in the course:

N/A

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### Expected learning outcomes of the course:

A student will be able to:

**CLO1:** Produce short and simple texts in written form about real life situations.

**CLO2:** Select appropriate grammar and vocabulary at beginner level.

**CLO3:** Combine a range of vocabulary to communicate effectively at beginner level.

**CLO4:** Differentiate some aspects of German life and culture.

## Course content:

- narrating and describing simple things and situations from real life in the present tense
- communicating and understanding greetings and daily class conversation and using expressions of common courtesies
- articulating basic needs, emotions, and attitudes in a short question/answer format
- providing autobiographical information, interests, abilities, likes and dislikes
- practising basic spoken German on topics presented in class
- reading passages from the textbook
- expressing ideas coherently at beginner level in writing
- gaining basic understanding of some aspects of German life and culture

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia
- Remote learning
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Quiz 1	0.6
Quiz 2	0.6
Quiz 3	0.6
Written Assignments	1.4
Oral In-Class Examinations	0.8
Final Oral Examination	0.5
Homework	0.5

Total 5

Teaching time is worth 2 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Quiz 1	12
Quiz 2	12
Quiz 3	12
Written Assignments	28
Oral In-Class Examinations	16
Final Oral Examination	10
Homework	10
Total:	100

---

### Required reading:

- Moeller, J., Berger, S., Hoecherl-Alden, G., Howes, S., Adolph, W. (2016). *Deutsch heute*, Introductory German, Tenth Edition, Cengage Learning.
- Moeller, J., Berger, S., Hoecherl-Alden, G., Howes, S., Adolph, W. (2016). *Deutsch heute*, Student Activities Manual, Tenth Edition, Cengage Learning.

---

### Additional reading:

- German College Dictionary, Harper-Collins, Second Edition (or any other dictionary of the German language)

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### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey

- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	SWEN-383 Software Design Principles and Patterns
Course leader:	Kristina Marasović
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	Second
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

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### Course objectives:

- Introducing the students to software engineering principles and patterns, the impact of design, and to have students practice that knowledge by working on a term-long team-based project.
- Cover several broad areas of software engineering: software engineering design principles, software design patterns, implementation challenges, quality software designs and architectures that represent best contemporary practice.
- Explicating the 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

---

### Conditions for enrolment in the course:

- Prerequisite: ISTE.240 Web and Mobile II or equivalent course.
- Co-requisite: ISTE.340 Client Programming or equivalent course.

---

### Expected learning outcomes of the course:

A student will be able to:

**CLO1:** Use a version control system in developing a group-based software project

**CLO2:** Create UML diagrams to visualize the design of a group-based software project

**CLO3:** Refactor an existing group project within the context of software design principles and patterns

**CLO4:** Build a group project from scratch within the context of software design principles and patterns

**CLO5:** Understand, recognize and apply patterns appropriate to a design problem in a given context

---

## Course content:

- Intro to Software Design Principles & Patterns
- Single Responsibility Principle (SRP)
- Don't Repeat Yourself Principle (DRY)
- Program to an Interface, not an Implementation (P2I)
- Version Control.
- Unified Modelling Language (UML): Class Diagram and Sequence Diagram
- Observer Pattern
- Factory Pattern
- Adapter Pattern
- MVC Pattern
- Composite Pattern
- Mediator Pattern
- Facade Pattern
- Proxy Pattern

---

## Teaching delivery methods:

- Lectures
- Independent work
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

---

## Monitoring student work:

Activity	ECTS
Project 1	1.8
Project 2	1.8

Midterm Exam	1.2
Final Exam	1.20
<b>Total</b>	<b>6</b>

Teaching time is worth 1.5 ECTS points and is incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Project 1	30
Project 2	30
Midterm Exam	20
Final Exam	20
<b>Total:</b>	<b>100</b>

---

### Required reading:

- No textbook is required. All assignments, lecture notes, and other distributable course materials are available via MyCourses.

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### Additional reading:

- Freeman, E., Robson, E., & Safari, an O'Reilly Media Company. (2020). *Head first design patterns* (2nd ed.). O'Reilly Media, Inc.
- Sarcar, V., & SpringerLink (Online service). (2022). *Java design patterns: A hands-on experience with real-world examples* (3rd ed.). Apress.

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### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	IST Second Year Foundations of Mobile Design, ISTE-252
Course leader:	Aleksander Radovan
Study programme:	WMC
Course status:	Obligatory
Year:	Second
ECTS points:	5
Teaching hours (L+S+E):	60 (2+0+2)

## Course Description

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### Course objectives:

- Development of mobile applications for different platforms
- Designing, prototyping, implementing, deploying and testing mobile device software
- Determining advantages and disadvantages of every type of development environment and mobile applications
- Integration with external API
- Mobile Interaction patterns and User Interface design

---

### Conditions for enrolment in the course:

None, intended for 2nd year WMC students

### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Organize development environment for development of mobile applications
- CLO2:** Develop an application that reads data from a JSON file
- CLO3:** Create an application that implements navigations among mobile application screens
- CLO4:** Connect a mobile application with an external REST API interface
- CLO5:** Reorganize a mobile application to be able to use external libraries
- CLO6:** Suggest development error fixes by using available debug tools



## Course content:

- Introduction to Mobile Design
- Mobile Patterns
- Data on the web
- REST API
- JavaScript
- Introduction to React Native
- React Native Basics
- React Native Layouts
- React native Layouts, Images and Menus
- React Native Navigations
- React Native User Input
- React Native External data
- React Web View

---

## Teaching delivery methods:

- Lectures
- Guest Lectures
- Demonstration of practical assignments

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

---

## Monitoring student work:

Activity	ECTS
Assignments	1.25
Midterm Exam	0.75
Final Exam	1.25
Individual Project	1.75
<b>Total</b>	<b>5</b>

Teaching time is worth 2 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Assignments	25
Midterm Exam	15
Final Exam	25
Individual Project	35
<b>Total:</b>	<b>100</b>

---

## Required reading:

- Devin Abbott, Houssein Djirdeh, Anthony Accomazzo, Sophia Shoemaker: Fullstack React Native: Create beautiful mobile apps with JavaScript and React Native, Published: January 2019., ISBN: 978-1728995557

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## Additional reading:

- Adam Boduch, Roy Derks, Mihail Sakhniuk: React and React Native: Build cross-platform JavaScript applications with native power for the web, desktop, and mobile, 4th edition, Published: March, 2022., ISBN: 978-1803231280

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## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Observation of lectures
- Assessment of the achievement of learning outcomes through homeworks and exams

## General Information

Course title:	ISTE-330 Database Connectivity and Access
Course leader:	dr. sc. Branko Mihaljević, prof.
Study programme:	Web and Mobile Computing (WMC) Program
Course status:	Obligatory
Year:	Second
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

In this course students build applications that interact with relational databases. Through programming exercises students work with multiple relational databases and programmatically invoke the advanced database processing operations that are integral to contemporary computing data-centric applications. Topics also include the database drivers, the data layer access techniques, connectivity operations, security and integrity, and controlling database access.

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### Course objectives:

- Apply basic object-oriented programming (OOP) techniques in the development of database-driven applications
- Implement fully functional database interfaces utilizing common data access APIs, such as JDBC
- Connect to, and issue database queries against, different DBMSs
- Discuss and implement various standard data access techniques designed to improve DBMS connectivity and access performance
- Compare and contrast similarities and differences between various popular data access APIs

This course is part of the BS WMC/IT core course offerings that provide fundamental software development skills. Specifically, this course covers foundation database connectivity content for multi-tier architectures.

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### Conditions for enrolment in the course:

ISTE-230 or equivalent course and ISTE-120 or GCIS-124 or equivalent course

---

## Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Apply common database connectivity methods to connect to a database from the programming code
- CLO2:** Create programming interfaces utilizing common data access APIs and database drivers for different database servers
- CLO3:** Execute SQL queries against different database management systems (DBMSs) from the programming code
- CLO4:** Select appropriate data access techniques to improve DBMS connectivity and access performance and security
- CLO5:** Develop multi-user database-driven applications using multi-layered architectural approach and best practices

---

## Course content:

Course topics include:

- SQL Review and Database Normalization Review
- Database Drivers: Direct, Native, Abstract
- Building Multi-tier Architecture and Data Layer: Isolation, Error handling
- Basic Database Operations: CRUD, Connection, Statement, ResultSet, Metadata
- Advanced Operations: Prepared statements, Transactions, Stored procedures
- Security and Integrity: SQL Injection, Audit Trails
- Implementing Users, Privileges, and Roles
- Advanced topics (optional): Backup and Recovery, Object Relational Mappings (ORMs), Basic ETL, Contemporary databases

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Project work
- Peer review

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

---

## Monitoring student work:

Activity	ECTS
Exercises	0.9
Midterm Exam Theory	0.9
Midterm Exam Practical	1.2
Participation	0.3
Final Project	1.8
Final Exam	0.9
<b>Total</b>	<b>6</b>

Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments, projects and preparing for the exams.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Exercises	15
Midterm Exam Theory	15
Midterm Exam Practical	20
Participation	5
Final Project	30
Final Exam	15
<b>Total:</b>	<b>100</b>

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## Required reading:

- Sharan, K. (2018). JDBC API. In: Java APIs, Extensions and Libraries: With JavaFX, JDBC, jmod, jlink, networking, and the process API (2nd ed.). Apress. – available as eBook in RIT Library
- MySQL (2022). MySQL Connector/J 8.0 Developer Guide. Oracle. – available online for free

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## Additional reading:

- Sciore, E. (2020). JDBC. In: Database Design and Implementation: 2nd edition. Springer. – optional and available as eBook in RIT Library

- Horstmann, C. (2019). Core Java, Volume II - Advanced Features, 12th edition, Addison-Wesley Professional. – available as eBook in RIT Library
- Juneau, J. (2020). Jakarta EE recipes: A problem-solution approach (1st ed.). Apress. – optional and available as eBook in RIT Library

---

## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	ISTE-340 Client Programming
Course leader:	Kristina Marasović
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	Second
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

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### Course objectives:

- Explore the issues involved in the design and implementation of client-side programming, both web and desktop application based
- 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.
- Focus on the design, development, and implementation of usable, effective clients and client interfaces, both desktop and mobile, using multiple technologies.
- 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.

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### Conditions for enrolment in the course:

- ISTE-240 Web & Mobile II AND
- ISTE-121 Computational Problem Solving in the Information Domain II
- OR equivalent courses

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### Expected learning outcomes of the course:

A student will be able to:

**CLO1:** Create an object-oriented MVC-based website using JavaScript



**CLO2:** Implement a client-side storage to persist website data

**CLO3:** Implement browser support detection for a website

**CLO4:** Build a website to consume JSON data from a RESTful web service

**CLO5:** Create a website using a contemporary programming language and a framework.

---

## Course content:

- Introduction to Object-Oriented JavaScript
- Building a Simple MVC App from Scratch
- Conditional Selects and Forms
- Client-Side Storage
- JavaScript Compatibility
- jQuery
- Introduction to C# and Visual Studio
- Building an ASP.NET Core MVC App

---

## Teaching delivery methods:

- Lectures
- Independent work

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## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

---

## Monitoring student work:

Activity	ECTS
Assignment 1	1.5
Assignment 2	0.9
Assignment 3	0.9
Midterm Exam	1.5
Final Exam	1.20
<b>Total</b>	<b>6</b>

Teaching time is worth 1.5 ECTS points and is incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Assignment 1	25
Assignment 2	15
Assignment 3	15
Midterm Exam	25
Final Exam	20
<b>Total:</b>	<b>100</b>

---

### Required reading:

- No textbook is required. All assignments, lecture notes, and other distributable course materials are available via MyCourses.

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### Additional reading:

- Flanagan, D., & Safari, an O'Reilly Media Company. (2020). *JavaScript: The definitive guide* (7th ed.). O'Reilly Media, Inc.
- Franklin, J., Ferguson, R., & SpringerLink (Online service). (2017). *Beginning jQuery: From the basics of jQuery to writing your own plug-ins* (2nd ed.). Apress.
- Freeman, A. *Pro ASP.NET core MVC 2* (7th ed.). Apress.

---

### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	IST Second Year Seminar, ISTE-99
Course leader:	Petra Očinić
Study programme:	WMC
Course status:	Obligatory
Year:	Second
ECTS points:	0
Teaching hours (L+S+E):	15 (1+0+0)

## Course Description

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### Course objectives:

- Develop career goals and strategies for achieving these goals.
- Develop the ability to prepare resumes, cover letters, and other forms of jobs search documentation for prospective employers.
- Develop interviewing skills.
- Acquire knowledge pertaining to networking skills and be given the opportunity to implement these skills.
- Understand proper business etiquette and business attire for various situations and meetings.

---

### Conditions for enrolment in the course:

None, intended for 2nd year WMC students

### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Identify career goals and strategies for cooperative education and career development.
- CLO2:** Develop resumes, cover letters and other forms of employment documentation.
- CLO3:** Present themselves effectively in an HR and technical co-op interview.
- CLO4:** Network with different professionals using proper business etiquette.

---

## Course content:

### Co-op and job documentation

- Resumes
- Cover letters
- Career plan
- LinkedIn profile

### Business etiquette and processes

- Job interviews
- Recruitment trends
- Networking
- Job platforms

---

## Teaching delivery methods:

- Lectures
- Guest Lectures
- Exercises
- Independent work
- Peer review
- Critiques

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

---

## Monitoring student work:

Activity	ECTS
Resume	0.25
Cover letter	0.2
Career plan	0.1
LinkedIn profile	0.1
Guest lecture participation	0.1
Class participation	0.1

Mock HR interview	0.1
Mock technical interview	0.05
<b>Total</b>	<b>1</b>

Teaching time is worth 0.5 ECTS points, and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Resume	25
Cover letter	20
Career plan	10
LinkedIn profile	10
Guest lecture participation	10
Class participation	10
Mock HR interview	10
Mock technical interview	5
<b>Total:</b>	<b>100</b>

---

### Required reading:

- No textbook is required.

---

### Additional reading:

- Instructor will provide materials throughout the semester from a variety of sources. Texts or other media will be posted on MyCourses or handed out in class. Students are required to regularly check on MyCourses for updates.

---

### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Beginning Spanish II
Course leader:	Barbara Perić
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	Second
ECTS points:	5
Teaching hours (L+S+E):	60 (4+0+0)

## Course Description

---

### Course objectives:

- Provide students with a sound basis for learning to communicate effectively and accurately in Spanish as it is spoken and written today
- Practice all four basic language skills - listening, speaking, reading, and writing
- Give opportunities for student-student interaction and self-expression in realistic situations
- Emphasize cultural aspects of contemporary life and culture in Spain and Spanish speaking countries
- Engage students in in-class dialogues and readings

---

### Conditions for enrolment in the course:

Completion of Beginning Spanish I

---

### Expected learning outcomes of the course:

A student will be able to:

**CLO1:** Produce short texts in written form

**CLO2:** Implement appropriate grammar rules and vocabulary at sentence and text level in written form

**CLO3:** Combine a range of vocabulary to communicate effectively at beginner level

**CLO4:** Contrast aspects of Hispanic life and culture

## Course content:

- applying target grammatical structures and vocabulary through storytelling and describing real-life situations in the past
- talking about plans, travel preparations, free time, needs, feelings and attitudes
- interpreting different topics related to course material
- using target grammatical structures in the present and past tenses
- applying acquired grammatical structures and vocabulary in speaking and writing
- expressing ideas in writing
- comparing and thinking critically about cultural differences
- connecting different contents in written and oral form

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia
- Remote learning
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Quiz 1	0.6
Quiz 2	0.6
Quiz 3	0.6
Written Assignments	1.4
Oral In-Class Examinations	0.8
Final Oral Examination	0.5
Homework	0.5

Total 5

Teaching time is worth 2 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

Components of evaluation:

Component	Points/%
Quiz 1	12
Quiz 2	12
Quiz 3	12
Written Assignments	28
Oral In-Class Examinations	16
Final Oral Examination	10
Homework	10
<b>Total:</b>	<b>100</b>

---

## Required reading:

- Hershberger, R., Navey-Davis, S. & Borrás Álvarez, G. (2016). *Plazas, Lugar de encuentros* (5<sup>th</sup> ed.), Heinle Cengage Learning.

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## Additional reading:

- Acevedo A, I. (2013). *Spanish Reader for Beginners-Elementary*. CreateSpace Independent Publishing Platform.

---

## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes



## General Information

Course title:	Beginning French II
Course leader:	Tea Kovačević
Study programme:	IB
Course status:	Obligatory
Year:	Second
ECTS points:	5
Teaching hours (L+S+E):	60 (4+0+0)

## Course Description

---

### Course objectives:

- Provide students with a sound basis for learning to communicate effectively and accurately in French as it is spoken and written today
- Practice all four basic language skills - listening, speaking, reading, and writing
- Give opportunities for student-student interaction and self-expression in realistic situations
- Emphasize cultural aspects of contemporary life and culture in Russia and French-speaking countries
- Engage students in in-class dialogues and readings

---

### Conditions for enrolment in the course:

Completion of Beginning French I

---

### Expected learning outcomes of the course:

A student will be able to:

**CLO1:** Produce short texts in written form

**CLO2:** Implement appropriate grammar rules and vocabulary at sentence and text level in written form

**CLO3:** Combine a range of vocabulary to communicate effectively at beginner level

**CLO4:** Contrast aspects of French life and culture

## Course content:

- applying target grammatical structures and vocabulary through storytelling and describing real-life situations in the past
- talking about plans, travel preparations, free time, needs, feelings and attitudes
- interpreting different topics related to course material
- using target grammatical structures in the present and past tenses
- applying acquired grammatical structures and vocabulary in speaking and writing
- expressing ideas in writing
- comparing and thinking critically about cultural differences
- connecting different contents in written and oral form

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia
- Remote learning
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Quiz 1	0.6
Quiz 2	0.6
Quiz 3	0.6
Written Assignments	1.4
Oral In-Class Examinations	0.8
Final Oral Examination	0.5
Homework	0.5

Total 5

Teaching time is worth 2 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Quiz 1	12
Quiz 2	12
Quiz 3	12
Written Assignments	28
Oral In-Class Examinations	16
Final Oral Examination	10
Homework	10
<b>Total:</b>	<b>100</b>

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### Required reading:

- Manley, J., Smith, S., McMinn, J., & and Prévost, 8. (2011). *Horizons*. 6<sup>th</sup> edition.

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### Additional reading:

- Les 500 Exercices de phonétique A1/A2 – Hachette, 2009
- Nouvelle grammaire du français: Cours de Civilisation Française de la Sorbonne – Y. Dellatour, D. Jennepin, M. Léon-Dufour, B. Teyssier, Hachette, 2004

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### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Beginning Italian II
Course leader:	Ana Gudelj
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	Second
ECTS points:	5
Teaching hours (L+S+E):	60 (4+0+0)

## Course Description

---

### Course objectives:

- Provide students with a sound basis for learning to communicate effectively and accurately in Spanish as it is spoken and written today
- Practice all four basic language skills - listening, speaking, reading, and writing
- Give opportunities for student-student interaction and self-expression in realistic situations
- Emphasize cultural aspects of contemporary life and culture in Spain and Spanish speaking countries
- Engage students in in-class dialogues and readings

---

### Conditions for enrolment in the course:

Completion of Beginning Italian I

---

### Expected learning outcomes of the course:

A student will be able to:

**CLO1:** Produce short texts in written form

**CLO2:** Implement appropriate grammar rules and vocabulary at sentence and text level in written form

**CLO3:** Combine a range of vocabulary to communicate effectively at beginner level

**CLO4:** Contrast aspects of Italian life and culture

## Course content:

- applying target grammatical structures and vocabulary through storytelling and describing real-life situations in the past
- talking about plans, travel preparations, free time, needs, feelings and attitudes
- interpreting different topics related to course material
- using target grammatical structures in the present and past tenses
- applying acquired grammatical structures and vocabulary in speaking and writing
- expressing ideas in writing
- comparing and thinking critically about cultural differences
- connecting different contents in written and oral form

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia
- Remote learning
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Quiz 1	0.6
Quiz 2	0.6
Quiz 3	0.6
Written Assignments	1.4
Oral In-Class Examinations	0.8
Final Oral Examination	0.5
Homework	0.5

Total

5

Teaching time is worth 2 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

Components of evaluation:

Component	Points/%
Quiz 1	12
Quiz 2	12
Quiz 3	12
Written Assignments	28
Oral In-Class Examinations	16
Final Oral Examination	10
Homework	10
<b>Total:</b>	<b>100</b>

---

## Required reading:

- Merlonghi, F., Merlonghi, F., Tursi, J., & O'Connor, B. (2012). *Oggi in Italia: a first course in Italian* (9<sup>th</sup> ed.). Heinle Cengage Learning.
- Merlonghi, F., Merlonghi, F., Tursi, J., & O'Connor, B. (2012). *Oggi in Italia: Student activities manual* (9<sup>th</sup> ed.). Heinle Cengage Learning.

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## Additional reading:

- Cozzarelli, J.M. (2020). *Sentieri*. Vista Higher Learning.
- Manella, C. (2005). *Sì! L'italiano in mano. Manuale e corso pratico di italiano per stranieri. Livello elementare, intermedio e superiore*. Progetto Lingua Edizioni.

---

Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Beginning Russian II
Course leader:	Ana Peković
Study programme:	IB
Course status:	Obligatory
Year:	Second
ECTS points:	5
Teaching hours (L+S+E):	60 (4+0+0)

## Course Description

---

### Course objectives:

- Provide students with a sound basis for learning to communicate effectively and accurately in Russian as it is spoken and written today
- Practice all four basic language skills - listening, speaking, reading, and writing
- Give opportunities for student-student interaction and self-expression in realistic situations
- Emphasize cultural aspects of contemporary life and culture in Russia and Russian-speaking countries
- Engage students in in-class dialogues and readings

---

### Conditions for enrolment in the course:

Completion of Beginning Russian I

---

### Expected learning outcomes of the course:

A student will be able to:

**CLO1:** Produce short texts in written form

**CLO2:** Implement appropriate grammar rules and vocabulary at sentence and text level in written form

**CLO3:** Combine a range of vocabulary to communicate effectively at beginner level

**CLO4:** Contrast aspects of Russian life and culture



## Course content:

- applying target grammatical structures and vocabulary through storytelling and describing real-life situations in the past
- talking about plans, travel preparations, free time, needs, feelings and attitudes
- interpreting different topics related to course material
- using target grammatical structures in the present and past tenses
- applying acquired grammatical structures and vocabulary in speaking and writing
- expressing ideas in writing
- comparing and thinking critically about cultural differences
- connecting different contents in written and oral form

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia
- Remote learning
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Quiz 1	0.6
Quiz 2	0.6
Quiz 3	0.6
Written Assignments	1.4
Oral In-Class Examinations	0.8
Final Oral Examination	0.5
Homework	0.5

Total 5

Teaching time is worth 2 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

Components of evaluation:

Component	Points/%
Quiz 1	12
Quiz 2	12
Quiz 3	12
Written Assignments	28
Oral In-Class Examinations	16
Final Oral Examination	10
Homework	10
<b>Total:</b>	<b>100</b>

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## Required reading:

- Robin et al. *Golosa – A basic course in Russian*, 5<sup>th</sup> edition. Pearson.

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## Additional reading:

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## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Beginning German II
Course leader:	Nikolina Božinović
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	Second
ECTS points:	5
Teaching hours (L+S+E):	60 (4+0+0)

## Course Description

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### Course objectives:

- Provide students with a sound basis for learning to communicate effectively and accurately in German as it is spoken and written today
- Practice all four basic language skills - listening, speaking, reading, and writing
- Give opportunities for student-student interaction and self-expression in realistic situations
- Emphasize cultural aspects of contemporary life and culture in German speaking countries
- Engage students in in-class dialogues and readings

---

### Conditions for enrolment in the course:

Completion of Beginning German I

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### Expected learning outcomes of the course:

A student will be able to:

**CLO1:** Produce short texts in written form

**CLO2:** Implement appropriate grammar rules and vocabulary at sentence and text level in written form

**CLO3:** Combine a range of vocabulary to communicate effectively at beginner level

**CLO4:** Contrast aspects of German life and culture

## Course content:

- applying target grammatical structures and vocabulary through storytelling and describing real-life situations in the past
- talking about plans, travel preparations, free time, needs, feelings and attitudes
- interpreting different topics related to course material
- using target grammatical structures in the present and past tenses
- applying acquired grammatical structures and vocabulary in speaking and writing
- expressing ideas in writing
- comparing and thinking critically about cultural differences
- connecting different contents in written and oral form

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia
- Remote learning
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Quiz 1	0.6
Quiz 2	0.6
Quiz 3	0.6
Written Assignments	1.4
Oral In-Class Examinations	0.8
Final Oral Examination	0.5
Homework	0.5

Total 5

Teaching time is worth 2 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Quiz 1	12
Quiz 2	12
Quiz 3	12
Written Assignments	28
Oral In-Class Examinations	16
Final Oral Examination	10
Homework	10
Total:	100

---

### Required reading:

- Moeller, J., Berger, S., Hoecherl-Alden, G., Howes, S., Adolph, W. (2016). *Deutsch heute*, Introductory German, Tenth Edition, Cengage Learning.
- Moeller, J., Berger, S., Hoecherl-Alden, G., Howes, S., Adolph, W. (2016). *Deutsch heute*, Student Activities Manual, Tenth Edition, Cengage Learning.

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### Additional reading:

- German College Dictionary, Harper-Collins, Second Edition (or any other dictionary of the German language)

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Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	WMC COOPERATIVE EDUCATION 1
Course leader:	Petra Očinić
Study programme:	WMC
Course status:	Obligatory
Year:	Second
ECTS points:	12
Teaching hours (L+S+E):	co-op

## Course Description

Career-related work experience. Employment within the IT related industries is monitored by the Web and Mobile Computing Program and the Career Services Office.

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### Course objectives:

- Coop work is designed for the student to experience progressive training on the job as related to the academic option.

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### Conditions for enrolment in the course:

Minimum 55 credits obtained

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### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Apply acquired knowledge and skills from previous academic courses in co-op tasks.
- CLO2:** Perform in accordance with the instructions and feedback in the process of solving co-op tasks in a real environment.
- CLO3:** Explain the activities, work processes and the market environment of the co-op organisation.
- CLO4:** Reflect on professional and personal growth, and work-related competencies gained during co-op.

---

## Course content:

### Co-op documentation

- Registration & offer letter
- Reports
- Evaluations

### Field work

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## Teaching delivery methods:

- Field work
- Mentoring
- Remote learning
- Independent work
- Project work

---

## Student obligations:

- Completing full 400 hours of mentored field work
- Submitting co-op documentation (registrations, reports, evaluations)

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## Monitoring student work:

Activity	ECTS
Mentored fieldwork	11.7
Co-op evaluation reports	0.3
<b>Total</b>	<b>12</b>

Teaching time is worth 0 ECTS points and it has been incorporated in time for assignments.

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## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Mentored fieldwork	95
Co-op evaluation reports	5
<b>Total:</b>	<b>100</b>



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## Required reading:

- RIT Croatia cooperative education handbook and cooperative education bylaw

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## Additional reading:

- ...

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## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- RIT Croatia cooperative education registration form & offer letter
- RIT Croatia cooperative education biweekly report form for students on remote or project-based co-op formats
- RIT Croatia cooperative education student evaluation form
- RIT Croatia cooperative education employer evaluation form

# **YEAR 3 – COURSE DESCRIPTIONS**

## General Information

Course title:	ISTE-341 Server Programming
Course leader:	Kristina Marasović
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	Third
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

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### Course objectives:

- In-depth work in server-side programming
- Develop dynamic, data centric web pages and systems
- Develop server-side information services that will be available to clients implemented in a variety of software technologies.

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### Conditions for enrolment in the course:

- ISTE-340 Client Programming
- ISTE-230 Introduction to Database and Data Modelling
- SWEN-383 Software Design Principles and Patterns
- OR equivalent courses

---

### Expected learning outcomes of the course:

A student will be able to:

**CLO1:** Build an object-oriented database-driven web application

**CLO2:** Develop a RESTful web service using a contemporary object-oriented programming language

**CLO3:** Implement a RESTful web service using server-side JavaScript

**CLO4:** Build a multi-container application using contemporary technologies & tools

---

## Course content:

- Object-oriented PHP
- Database Access with PHP
- HTTP State Management
- Data-Exchange Formats
- Web Services
- RESTful Web Services with Java
- Node.js
- Express Framework
- Docker
- Multi-Container Applications with Docker Compose

---

## Teaching delivery methods:

- Lectures
- Independent work
- Project work
- Lab assignments

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

---

## Monitoring student work:

Activity	ECTS
Labs	1.2
Project 1	0.8
Project 2	0.8
Project 3	0.8
Week 5 Exam	1.2
Final Exam	1.2
<b>Total</b>	<b>6</b>

Teaching time is worth 1.5 ECTS points and is incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Labs	20.00
Project 1	13.33
Project 2	13.33
Project 3	13.33
Week 5 Exam	20.00
Final Exam	20.00
<b>Total:</b>	<b>100</b>

---

### Required reading:

- No textbook is required. All assignments, lecture notes, and other distributable course materials are available via MyCourses.

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### Additional reading:

- Butler, T., & Safari, an O'Reilly Media Company. (2022). *PHP & MySQL: Novice to ninja* (7th ed.). SitePoint.
- Nixon, R., & Safari, an O'Reilly Media Company. (2021). *Learning PHP, MySQL & JavaScript* (6th ed.). O'Reilly Media, Inc.
- Herron, D., & Safari, an O'Reilly Media Company. (2020). *Node.js web development* (5th ed.). Packt Publishing.

---

### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	ISTE-422 Application Development Practices
Course leader:	Kristina Marasović
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	Third
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

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### Course objectives:

- Gain experience with the processes, practices, and tools professional developers use to deliver robust and maintainable applications
- Apply these practices and tools to build smaller-scale production-quality applications and systems

---

### Conditions for enrolment in the course:

- ISTE-121 Computational Problem Solving in the Information Domain II
- OR equivalent courses

---

### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Build a group project using agile software development methodology
- CLO2:** Refactor the code to improve software design and performance with appropriate tools.
- CLO3:** Build a software project ready for testing and deployment
- CLO4:** Use appropriate tools to improve the software development process and productivity

---

### Course content:

- Development Methodologies

- Version Control
- Build Utilities & Servers
- Error Handling, Logging
- Introduction to Refactoring
- Static Code Analysis
- Dynamic Code Analysis
- Testing in Software Development
- Application Deployment
- Help Systems. Documentation

---

## Teaching delivery methods:

- Lectures
- Independent work
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

---

## Monitoring student work:

Activity	ECTS
Exercises	1.80
Milestone 1	1.00
Milestone 2	1.00
Milestone 3	1.00
Quiz 1	0.40
Quiz 2	0.40
Quiz 3	0.40
<b>Total</b>	<b>6</b>

Teaching time is worth 1.5 ECTS points and is incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Exercises	30
Milestone 1	16.67
Milestone 2	16.67
Milestone 3	16.67
Quiz 1	6.67
Quiz 2	6.67
Quiz 3	6.67
<b>Total:</b>	<b>100</b>

---

### Required reading:

- No textbook is required. All assignments, lecture notes, and other distributable course materials are available via MyCourses.

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### Additional reading:

- Stellman, A., Greene, J., & Safari, an O'Reilly Media Company. (2017). *Head first agile* (1st ed.). O'Reilly Media, Inc.
- Heath, F., & Safari, an O'Reilly Media Company. (2021). *The professional scrum master (PSM I) guide* (1st ed.). Packt Publishing.

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### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes



## General Information

Course title:	Positive Psychology
Course leader:	Ana Havelka Mestrovic
Study programme:	International Business, NMD
Course status:	Elective
Year:	Third
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

Positive Psychology is the scientific study of the individual characteristics and environmental conditions that allow human beings to flourish. This course takes an empirical and experiential approach to helping individuals understand and use course content to enhance their lives. Topics covered may include happiness and well-being, positive emotions and thinking, character strengths and virtues, motivation and self-control, resilience and post-traumatic growth, and healthy relationships and institutions.

---

### Course objectives:

- Obtain new knowledge about Positive Psychology as the discipline of thriving and flourishing.
- Understand the concept of progressive, life-long realisation of potential as human beings who can “stretch” and grow.
- Examine the three main questions: (1) “what does it mean to live a pleasant life”? (2) “what does it mean to live an engaged (full) life”?, and (3) “what does it mean to live a meaningful life”.
- Develop a zest for living a virtuous, satisfying, and meaningful life!
- To have better understanding about positive psychology and implementation in everyday life

---

### Conditions for enrolment in the course:

Prerequisite: Psyc 101

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## Expected learning outcomes of the course:

A student will be able to:

- CLO 1:** Identify the basic premises of Positive Psychology.
- CLO 2:** Identify different ways how to measure happiness and well being
- CLO 3:** Analyse the history of Positive Psychology and its relationship to traditional psychology
- CLO 4:** Identify the difference between values and character strengths
- CLO 5:** Interpret current theories in Positive Psychology
- CLO 6:** Employ Positive Psychology interventions to increase personal well-being.

---

## Course content:

- Introduction to positive psychology: history, key concepts, measurement and well-being
- Cognitive and emotional processes in positive psychology: positive illusions, explanatory style, positive emotions and self-esteem
- Attentional processes in positive psychology: flow and mindfulness and their applications
- Interpersonal aspects of positive psychology include themes on positive relations, forgiveness, transforming conflicts and positive communication.
- Applying positive psychology: interventions and the use of character strengths. Students will have a group project on designing a positive psychology intervention.
- Coping in positive psychology focuses on resilience, post-traumatic growth, meaning and gratitude
- Achievements and accomplishments: self-concordance and goal-setting, grit, self-regulation
- The role of flexibility and complexity in intra- and interpersonal well-being

---

## Teaching delivery methods:

- Lectures
- Remote learning
- Project work
- Individual work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

---

## Monitoring student work:

Activity	ECTS
Exam 1	0.5
Exam 2	1
Exam 3	1
Personal Exercise	1.5
Group presentation	1
<b>Total</b>	<b>6</b>

Teaching time is worth 2 ECTS points, and it has been incorporated in time for assignments.

Assessment and evaluation of student work

## Components of evaluation:

Component	Points/%
Exam 1	5/5
Exam 2	10/10
Exam 3	10/10
Personal Exercise	50/50
Group presentation	25/25
<b>Total:</b>	<b>100</b>

---

## Description of assignments

**Exams** consist of multiple choice questions in 80 % and 20 % are essay type questions. Questions are connected with chapters covered during classes. Exams are non-cumulative.

**Personal Exercise** promote students' practical involvement within the Positive Psychology Sciences. Students need to cover every week one topic from classes and implement it in everyday life. The exercise has different tasks, depending on the topic, such as. Having a diary, thinking about your past experience and write a reflection, practising mindfulness and writing an short

essay about that experience, enters into the flow and explain in short essay how was the feeling of flow...As this course is mainly oriented to practice in the field of positive psychology, this type of portfolio brings the most points.

---

## Required reading:

1. Frankl, Victor E. (2006). *Man's Search for Meaning*. Boston: Beacon Press
2. Lyubomirsky, S (2011). *The How of Happiness. A Practical Guide to Getting the Life You Want*. New York: The Penguin Press
3. Sheldon, M.K. Et al. (Eds.) (2011). *Designing Positive Psychology. Taking Stock and Moving Forward*. New York: Oxford University Press
4. Seligman, M. & Peterson, C. (2004) Character strengths and virtues: A handbook and classification. Pearson Inc. (e-book available through Wallace Library)

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## Additional reading:

- Materials from APA Monitor on Psychology (monthly edition)
- Peterson, C. (2006) A Primer in Positive Psychology - selected readings. Pearson Inc.
- C.R. Snyder & S. Lopez (2009). The Oxford Handbook of Positive Psychology, Oxford: Oxford University Press.

---

## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Literature and Cultural Studies ENGL210
Course leader:	Ana Gudelj
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	Third
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

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### Course objectives:

- Study literature, movements, and writers within their cultural contexts and in relation to modes of literary production and circulation.
- Engage with literary analysis and cultural criticism.
- Gain a strong foundation for analyzing the ways literary language functions and exploring the interrelations among literature, culture, and history.
- Discuss issues involving culture, identity, language, ethics, race, gender, class, and globalism, among many others.

---

### Conditions for enrolment in the course:

N/A

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### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Analyze a variety of literary texts, cultural artifacts, and/or critical/analytical essays
- CLO2:** Connect literary and cultural artifacts to their social and cultural contexts
- CLO3:** Compose coherent literary analyses, creative essays, research papers, or multimedia presentations

---

### Course content:

- Drama - Elizabethan Theatre
- Theatre in the Age of Shakespeare

- Essays - Transcendentalism – Religious and Sociocultural Context
- Civil Rights
- World Mythologies - Native American Trickster Tales
- Novels – Modernism
- Poetry
- Writing citations

---

## Teaching delivery methods:

- Lectures
- Discussions
- Exercises
- Independent work
- Multimedia
- Critiques

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Quiz 1	1.3
Quiz 2	1.3
Quiz 3	1.3
Final Essay	1.1
<b>Total</b>	<b>5</b>

Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments.

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## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Quiz 1	26
Quiz 2	26
Quiz 3	26
Final Essay	22

Total:	100
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## Required reading:

- Shakespeare, W. (2011). *The tempest*. Lerner Publishing Group.
- Thoreau, H.D. (2003). Resistance to civil government. In Baym, N. Editor, *The Norton anthology of American literature* (6th ed., Vol. B). W.W. Norton & Company.
- Emerson, R.W. (2003). Self-Reliance. In Baym, N. Editor, *The Norton anthology of American literature* (6th ed., Vol. B). W.W. Norton & Company.
- Baym, N. Editor, (2003). From the Winnebago trickster cycle. In *The Norton anthology of American literature* (6th ed., Vol. A). W.W. Norton & Company.

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## Additional reading:

- Shakespeare, W. (2009). *The tempest: The graphic novel* (C.Bryant, Ed.). Classical Comics.
- Selected essays by H.D.Thoreau and R.W.Emerson
- Ernest Hemingway, E. (1987). *The garden of Eden*. Scribner.
- Selected poems by Emily Dickinson

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## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Intermediate Spanish I
Course leader:	Barbara Perić
Study programme:	Web and Mobile Computing
Course status:	Elective
Year:	Third
ECTS points:	4
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

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### Course objectives:

- Provide students with adequate tools to increase their ability to function better in Spanish language and understand better all aspects of Hispanic culture, formal and informal.
- Practice and advance basic skills acquired in the beginning courses.
- Engage students in communication activities, contemporary texts, and more advanced study of vocabulary and grammar to expand all communication skills, especially oral proficiency.
- Emphasize relevant aspects of contemporary Hispanic life and culture.

---

### Conditions for enrolment in the course:

Completion of Beginning Spanish I and Beginning Spanish II

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### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Produce texts in written form about a range of topics
- CLO2:** Argue one's point in class discussions
- CLO3:** Support different cultural aspects with appropriate vocabulary
- CLO4:** Design and deliver a presentation on a topic of interest
- CLO5:** Differentiate grammar structures and vocabulary at intermediate level



## Course content:

- discussing different topics related to course materials in present and past tenses
- participating in basic every-day situation dialogues
- arguing for or against a certain position in class discussions
- reading and analyzing a variety of literary and non-literary texts
- writing paragraphs of increasing complexity in Spanish
- gaining a deeper understanding of Hispanic culture and differences between different cultures
- delivering a short presentation in Spanish language

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia
- Remote learning
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Quiz 1	0.5
Quiz 2	0.5
Quiz 3	0.5
Oral In-Class Examinations	0.6
Written Assignments	1.1
Final Presentation	0.4
Homework	0.4
<b>Total</b>	<b>4</b>

Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Quiz 1	12
Quiz 2	12
Quiz 3	12
Oral In-Class Examinations	16
Written Assignments	28
Final Presentation	10
Homework	10
Total:	100

---

### Required reading:

- Blitt, M.A., Casas, M. & Copple, M.T. (2020). *Exploraciones, curso intermedio* (second edition), Cengage Learning.

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### Additional reading:

- Jarvis, A.C. & Lebreo, L. (2011). *Basic Spanish for business and finance* (second edition), Heinle Cengage Learning.

---

### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Intermediate French I
Course leader:	Tea Kovačević
Study programme:	WMC
Course status:	Not obligatory
Year:	Third
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

---

### Course objectives:

- Provide students with adequate tools to increase their ability to function better in French language and understand better all aspects of French culture, formal and informal.
- Practice and advance basic skills acquired in the beginning courses.
- Engage students in communication activities, contemporary texts, and more advanced study of vocabulary and grammar to expand all communication skills, especially oral proficiency.
- Emphasize relevant aspects of contemporary French life and culture.

---

### Conditions for enrolment in the course:

Completion of Beginning French I and Beginning French II

---

### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Produce texts in written form about a range of topics
- CLO2:** Argue one's point in class discussions
- CLO3:** Support different cultural aspects with appropriate vocabulary
- CLO4:** Design and deliver a presentation on a topic of interest
- CLO5:** Differentiate grammar structures and vocabulary at intermediate level

## Course content:

- discussing different topics related to course materials in present and past tenses
- participating in basic every-day situation dialogues
- arguing for or against a certain position in class discussions
- reading and analyzing a variety of literary and non-literary texts
- writing paragraphs of increasing complexity in French
- gaining a deeper understanding of French culture and differences between different cultures
- delivering a short presentation in French language

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia
- Remote learning
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Quiz 1	0.5
Quiz 2	0.5
Quiz 3	0.5
Oral In-Class Examinations	0.6
Written Assignments	1.1
Final Presentation	0.4
Homework	0.4
<b>Total</b>	<b>4</b>

Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Quiz 1	12
Quiz 2	12
Quiz 3	12
Oral In-Class Examinations	16
Written Assignments	28
Final Presentation	10
Homework	10
Total:	100

---

### Required reading:

- Muyskens, J., Harlow, L., Vialet, M., & Brière, J. (2013). *Bravo!* 8<sup>th</sup> edition. Cengage.
- Muyskens, J., Harlow, L., Vialet, M., & Brière, J. (2013). *Bravo! Student Activities Manual*. 8<sup>th</sup> edition. Cengage.

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### Additional reading:

- Les 500 Exercices de phonétique A1/A2 – Hachette, 2009
- Les 500 Exercices de grammaire A2-Hachette, 2006
- Nouvelle grammaire du français: Cours de Civilisation Française de la Sorbonne – Y. Dellatour, D. Jennepin, M. Léon-Dufour, B. Teyssier, Hachette, 2004
- Grammaire essentielle du français niveaux A1 A2 - Glaud Ludivine, Lannier Muriel, Loiseau Yves, Didier, 2015
- Edito 1 (méthode de français et cahier d'activités) – Marie-Pierre Baylocq Sassoubre, Stéphanie Brémaud, Stefano Campopiano, Clara Cheilan, Erwan Dambrine, Cécile Pinson, Didier, 2016
- Génération A2 (méthode de français) – P.Dauda, L.Giachino, C. Baracco, Didier, 2016

Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Intermediate Italian I
Course leader:	Ana Gudelj
Study programme:	Web and Mobile Computing
Course status:	Elective
Year:	Third
ECTS points:	4
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

---

### Course objectives:

- Provide students with adequate tools to increase their ability to function better in Italian language and understand better all aspects of Italian culture, formal and informal.
- Practice and advance basic skills acquired in the beginning courses.
- Engage students in communication activities, contemporary texts, and more advanced study of vocabulary and grammar to expand all communication skills, especially oral proficiency.
- Emphasize relevant aspects of contemporary Italian life and culture.

---

### Conditions for enrolment in the course:

Completion of Beginning Italian I and Beginning Italian II

---

### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Produce texts in written form about a range of topics
- CLO2:** Argue one's point in class discussions
- CLO3:** Support different cultural aspects with appropriate vocabulary
- CLO4:** Design and deliver a presentation on a topic of interest
- CLO5:** Differentiate grammar structures and vocabulary at intermediate level

## Course content:

- discussing different topics related to course materials in present and past tenses
- participating in basic every-day situation dialogues
- arguing for or against a certain position in class discussions
- reading and analyzing a variety of literary and non-literary texts
- writing paragraphs of increasing complexity in Italian
- gaining a deeper understanding of Italian culture and differences between different cultures
- delivering a short presentation in Italian language

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia
- Remote learning
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Quiz 1	0.5
Quiz 2	0.5
Quiz 3	0.5
Oral In-Class Examinations	0.6
Written Assignments	1.1
Final Presentation	0.4
Homework	0.4
<b>Total</b>	<b>4</b>



Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Quiz 1	12
Quiz 2	12
Quiz 3	12
Oral In-Class Examinations	16
Written Assignments	28
Final Presentation	10
Homework	10
Total:	100

---

### Required reading:

- Italiano, F. & Marchegiani, I. (2007). *Crescendo: An intermediate Italian program* (2nd ed.). Thomson and Heinle.
- *Crescendo*, Workbook/Lab Manual and Audio CDs
- Tognozzi, E. & Cavatorta, G. (2013). *Ponti: Italiano terzo millennio* (3rd ed.). Cengage Learning.
- Tognozzi, E. & Cavatorta, G. (2013) *Ponti: Italiano terzo millennio, Student activities manual* (2nd ed.). Heinle Cengage Learning.

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### Additional reading:

- Manella, C. (2005). *Si! L'italiano in mano. Manuale e corso pratico di italiano per stranieri. Livello elementare, intermedio e superiore*. Progetto Lingua Edizioni.

---

### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Intermediate Russian I
Course leader:	Ana Peković
Study programme:	WMC
Course status:	Not obligatory
Year:	Third
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

---

### Course objectives:

- Provide students with adequate tools to increase their ability to function better in Russian language and understand better all aspects of Russian culture, formal and informal.
- Practice and advance basic skills acquired in the beginning courses.
- Engage students in communication activities, contemporary texts, and more advanced study of vocabulary and grammar to expand all communication skills, especially oral proficiency.
- Emphasize relevant aspects of contemporary Russian life and culture.

---

### Conditions for enrolment in the course:

Completion of Beginning Russian I and Beginning Russian II

---

### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Produce texts in written form about a range of topics
- CLO2:** Argue one's point in class discussions
- CLO3:** Support different cultural aspects with appropriate vocabulary
- CLO4:** Design and deliver a presentation on a topic of interest
- CLO5:** Differentiate grammar structures and vocabulary at intermediate level

## Course content:

- discussing different topics related to course materials in present and past tenses
- participating in basic every-day situation dialogues
- arguing for or against a certain position in class discussions
- reading and analyzing a variety of literary and non-literary texts
- writing paragraphs of increasing complexity in Russian
- gaining a deeper understanding of Russian culture and differences between different cultures
- delivering a short presentation in Russian language

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia
- Remote learning
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Quiz 1	0.5
Quiz 2	0.5
Quiz 3	0.5
Oral In-Class Examinations	0.6
Written Assignments	1.1
Final Presentation	0.4
Homework	0.4
<b>Total</b>	<b>4</b>

Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments.

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## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Quiz 1	12
Quiz 2	12
Quiz 3	12
Oral In-Class Examinations	16
Written Assignments	28
Final Presentation	10
Homework	10
Total:	100

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### Required reading:

- Robin et al. *Golosa – A basic course in Russian*, 5<sup>th</sup> edition. Pearson.

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### Additional reading:

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### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Intermediate German I
Course leader:	Nikolina Božinović
Study programme:	Web and Mobile Computing
Course status:	Elective
Year:	Third
ECTS points:	4
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

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### Course objectives:

- Provide students with adequate tools to increase their ability to function better in German language and understand better all aspects of German culture, formal and informal.
- Practice and advance basic skills acquired in the beginning courses.
- Engage students in communication activities, contemporary texts, and more advanced study of vocabulary and grammar to expand all communication skills, especially oral proficiency.
- Emphasize relevant aspects of contemporary German life and culture.

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### Conditions for enrolment in the course:

Completion of Beginning German I and Beginning German II

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### Expected learning outcomes of the course:

A student will be able to:

**CLO1:** Produce texts in written form about a range of topics

**CLO2:** Argue one's point in class discussions

**CLO3:** Support different cultural aspects with appropriate vocabulary

**CLO4:** Design and deliver a presentation on a topic of interest

**CLO5:** Differentiate grammar structures and vocabulary at intermediate level

---

### Course content:

- discussing different topics related to course materials in present and past tenses

- participating in basic every-day situation dialogues
- arguing for or against a certain position in class discussions
- reading and analyzing a variety of literary and non-literary texts
- writing paragraphs of increasing complexity in German
- gaining a deeper understanding of German culture and differences between different cultures
- delivering a short presentation in German language

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## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia
- Remote learning
- Project work

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## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Quiz 1	0.5
Quiz 2	0.5
Quiz 3	0.5
Oral In-Class Examinations	0.6
Written Assignments	1.1
Final Presentation	0.4
Homework	0.4
<b>Total</b>	<b>4</b>

Teaching time is worth 1.5 ECTS and it has been incorporated in time for assignments.

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## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Quiz 1	12
Quiz 2	12
Quiz 3	12
Oral In-Class Examinations	16
Written Assignments	28
Final Presentation	10
Homework	10
Total:	100

---

### Required reading:

- Moeller, J., Mabee, B., Berger, S., Adolph, W. (2016). *Kaleidoskop Kultur, Literatur und Grammatik*, Ninth Edition, Cengage Learning.
- Moeller, J., Mabee, B., Berger, S., Adolph, W. (2016). *Kaleidoskop Kultur, Literatur und Grammatik*, Student Activities Manual, Ninth Edition, Cengage Learning.

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### Additional reading:

- Funk, H. Kuhn, C., Demme, S. (2006). *Studio d A2 Deutsch als Fremdsprache*, Cornelsen Verlag, Berlin.
- Funk, H., Kuhn, C., Demme, S., Winzer, B. (2009). *Studio d B1 Deutsch als Fremdsprache*, Cornelsen Verlag Berlin.
- Augustyn, P.; Euba, N. (2020). *Stationen, Ein Kursbuch für die Mittelstufe*. Fourth Edition, Cengage Learning.
- German College Dictionary, Harper-Collins, Second Edition (or any other dictionary of the German language)

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### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	COS-ENVS-150-Ecology of the Dalmatian Coast
Course leader:	Staša Puškarić
Study programme:	International Business, WMC
Course status:	Obligatory
Year:	Third
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

Case studies will be used to provide real life examples of the basic concepts introduced in the course. We will use case studies throughout the sequence to provide a framework for applying the basic concepts. We will also use the case studies to demonstrate the interconnections between and among the concepts and the resulting complexities associated with environmental problems illustrated in the case studies. The case studies will also provide examples of successful, and sometimes unsuccessful, problem solving.

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### Course objectives:

- To explain and synthesize ecological concepts at the individual, population, community, and ecosystem level.
- To learn about experimental design and local ecosystems.
- To critically read scientific articles.

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### Conditions for enrolment in the course:

None

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### Expected learning outcomes of the course:

A student will be able to:

**LO1:** Analyze environmental issues.

**LO2:** Critically evaluate texts and other media on environmental issues.

**LO3:** Formulate and defend claims and solutions using evidence gathered from primary literature.



**LO4:** Examine how human actions impact the concept of sustainability and ways to minimize these impacts.

---

## Course content:

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.

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## Teaching delivery methods:

- Lectures
  - Exercises
  - Field work
  - Independent work
  - Project work
- 

## Teaching delivery modes:

- Lectures
  - Class discussions
  - Fieldtrips
- 

## Student obligations:

- Attending classes
  - Submitting projects and assignments
  - Participate in discussions
- 

## Monitoring student work:

Essay (Assignment 1)

**ECTS 1.0**

Students have to write individual reflections on ideas selected in class. Connections between topics covered in class and their personal observations have to be clearly outlined in text. The focus is evaluation of level understanding of class materials and student's personal contribution to defined problems.

Research paper (Assignment 2)

**ECTS 1.5**

Given the topic of research students have to find a minimum of 6 relevant sources (scholarly articles) using RIT online library. After reading (their secondary research), students have to write literature review as part of the Introduction. As this assignment is strictly focused on secondary research, they have to discuss their findings in relation to class materials and organize the information in a research paper including:

Cover Page

Abstract

Introduction (including literature review and in-text citations)

Discussion

Reference list

Quiz (pop-up quiz)

**ECTS 0.5**

A short 5 multiple choice questions related to materials presented in class

Presentation

**ECTS 1**

After submission of their research paper, students have to present their findings in short in-class presentation using visual aids, focusing on the most important findings of their research.

Final Exam

**ECTS 1**

Online test which includes 30 multiple choice questions covering all topics covered during the semester. Test duration 1 hour.

**Total 5**

Teaching time has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Assignment 1	20
Assignment 2	15
Presentation	10
Quiz	10

Attendance	15
Final Exam	30
<b>Total:</b>	<b>100</b>

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### Required reading (at the moment of submitting the Study Programme Report):

- Brennan, S. and Withgott, J. Environment: The Science Behind the Stories. Pearson/Benjamin Cummings. San Francisco, CA.

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### Additional reading (at the moment of submitting the Study Programme Report):

- Papers selected from the primary literature (updated annually)

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### Number of copies of required reading in relation to the number of students who currently attend a course:

Materials available at RIT online library The Wallace Center.

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### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Secure Web App Development
Course leader:	Assoc. Prof. Martin Žagar, Ph.D. in C.S., EMBA
Study programme:	WMC
Course status:	Obligatory
Year:	Third
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

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### Course objectives:

- Secure applications that are browser and platform-independent.
- Integrate client-server technologies by dynamically generating client-side code at the server that has the ability to manipulate the DOM on the client.
- Write programs and GUIs using technologies such as SVG, JavaScript, PHP, and other scripting environments to gain competence with current and future practices.
- Research new technologies and techniques. Assessed by in-class presentations.

---

### Conditions for enrolment in the course:

Students must have successfully completed ISTE-341 Server Programming course.

---

### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Categorize common web architectures
- CLO2:** Develop an optimized web application
- CLO3:** Defend against common web security intrusions
- CLO4:** Measure performance and web application load
- CLO5:** Compare new web technologies and development techniques

## Course content:

### Security principles

- ZAP
- Injections
- Security filters
- Hashing
- Encryption

### Software and project development

- Web App Overview
- Advanced frontend and principles
- Technology availability
- Technology characteristics
- Web Architectures

### Analysis

- Profiling
- Load testing
- JS Heap
- Allocation sampling
- Memory usage

---

## Teaching delivery methods:

- Lectures
- Independent work
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

## Monitoring student work:

Activity	ECTS
Security test	1.2
Self-guided study: topic proposal	0.6
Self-guided study: presentation	0.9
Project web architecture and technology decisions	0.6
Project frontend	0.6
Project Functionalities	0.9
Project backend	0.3
Project profiling and load testing	0.3
Project heap analysis and memory allocation	0.3
Participation	0.3
<b>Total</b>	<b>6</b>

Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments.

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Security test (Q1 ZAP 2 pts; Q2 SQL injection 3 pts; Q3 XSS 3 pts; Q4 CSRF 3 pts; Q5 Hashing 3 pts; Q6 Asymmetric Encryption 3 pts; Q7 Symmetric Encryption 3 pts)	20
Self-guided study: topic proposal (2 pts; technology landscape 3 pts; advantages and disadvantages of technology 5 pts)	10
Self-guided study: presentation (4 pts; working example 6 pts; libraries used 2 pts; real-world applicability 3 pts)	15
Project web architecture and technology decisions	10
Project frontend (UX/UI 3 pts; interactivity 3 pts; resources optimization 2 pts; mockups 2 pts)	10
Project Functionalities (primary functionalities 7 pts; secondary functionalities 5 pts; Wishlist functionalities 3 pts)	15
Project backend	5
Project profiling and load testing	5
Project heap analysis and memory allocation	5
Participation	5
<b>Total:</b>	<b>100</b>

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## Required reading:

- Pressman, R., Lowe, D.(2009). Web Engineering: A Practitioner's Approach

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## Additional reading:

- Assigned readings

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## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Web Server Development and Administration
Course leader:	Toni Njirić
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	Third
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

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.

---

### Course objectives:

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. By the end of the course, each student will be expected to:

- Understand the security and auditing aspects of web server programming
- Demonstrate the ability to install and analyze scalability and performance issues
- Install, configure, develop and maintain web servers

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### Conditions for enrolment in the course:

ISTE-341

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### Expected learning outcomes of the course:

A student will be able to:

**CLO1:** Configure web server software at the entire site level and on a per-directory basis.

**CLO2:** Design server architectures for multiple scalability scenarios



**CLO3:** Implement security measures appropriate to provided scenarios

**CLO4:** Implement auditing and log analysis

**CLO5:** Plan, design, develop, and test a custom-built web server

---

## Course content:

### Web Server Software Selection

- Operating System Considerations
- Hosting Options
- Server Access

### Web Server Configuration

- IIS
- Apache
- Modules & Options

### Scaling and Performance

- Vertical Scaling
- Horizontal Scaling
- Geographic Scaling
- Sessions Distribution
- Server Farms
- Virtualization
- Cloud Computing
- Custom Server Software
- DNS Issues

### Security & Auditing

- Users and Groups
- Authentication, Authorization, and Access Control
- Dynamic Content Security Issues
- SSL
- Certificates
- Robots and Spiders
- Logging and Log Analysis

### Web Server development

- Custom, Extensible Web Servers
- Co-routines and Communicating Processes
- Consumers, Producers, and Transducers

- Threads, Processes, and Thread-safe Programming
- Extensibility

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## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Mentoring
- Critiques

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

---

## Monitoring student work:

Activity	ECTS
Quizzes	0.6
Practical #1	1.2
Practical #2	1.2
Group Project	1.8
Homework	1.2
<b>Total</b>	<b>6</b>

Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Quizzes	10
Practical #1	20
Practical #2	20

Group Project	30
Homework	20
<b>Total:</b>	<b>100</b>

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### Required reading:

- The following are sample texts, from which excerpts might be assigned:
  - Linux Apache Web Server Administration (Linux Library)
  - Run Your Own Web Server Using Linux & Apache

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### Additional reading:

- Additional material distributed in class and/or via MyCourses

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### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Intermediate Spanish II
Course leader:	Barbara Perić
Study programme:	Web and Mobile Computing
Course status:	Elective
Year:	Third
ECTS points:	4
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

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### Course objectives:

- Provide students with adequate tools to further increase their ability to function better in Spanish language and understand better all aspects of Hispanic culture, formal and informal.
- Practice formal language and cultural behavior in professional environment
- Engage students in complex communication activities, contemporary texts, and more advanced study of vocabulary and grammar to further develop all communication skills, especially oral proficiency.
- Study and critically evaluate different aspects of contemporary Hispanic life and culture.

---

### Conditions for enrolment in the course:

Completion of Beginning Spanish I, Beginning Spanish II and Intermediate Spanish I

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### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Create formal and informal texts in written form to communicate effectively in formal and informal settings
- CLO2:** Criticize different cultural aspects by formulating a standpoint on various topic
- CLO3:** Design and deliver a presentation on personal or professional topics
- CLO4:** Differentiate more complex grammar structures and vocabulary at intermediate level

## Course content:

- discussing different topics related to course materials applying all verb tenses
- introducing and practicing contemporary formal Spanish language and defining cultural differences in professional environments
- participating in debates and arguing for or against a certain position in class discussions
- critically reading and analyzing a variety of texts
- writing paragraphs in more advanced Spanish using a variety of tenses and complex grammatical structures
- gaining a more profound understanding of Hispanic culture and differences between various cultures
- delivering a presentation in Spanish language

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia
- Remote learning
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Quiz 1	0.5
Quiz 2	0.5
Quiz 3	0.5
Oral In-Class Examinations	0.6
Written Assignments	1.1
Final Presentation	0.4
Homework	0.4
<b>Total</b>	<b>4</b>

Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Quiz 1	12
Quiz 2	12
Quiz 3	12
Oral In-Class Examinations	16
Written Assignments	28
Final Presentation	10
Homework	10
Total:	100

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### Required reading:

- Blitt, M.A., Casas, M. & Copple, M.T. (2020). *Exploraciones, curso intermedio* (second edition), Cengage Learning.

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### Additional reading:

- Jarvis, A.C. & Lebrede, L. (2011). *Basic Spanish for business and finance* (second edition), Heinle Cengage Learning

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### skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Intermediate French II
Course leader:	Tea Kovačević
Study programme:	WMC
Course status:	Not obligatory
Year:	Third
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

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### Course objectives:

- Provide students with adequate tools to further increase their ability to function better in French language and understand better all aspects of French culture, formal and informal.
- Practice formal language and cultural behavior in professional environment
- Engage students in complex communication activities, contemporary texts, and more advanced study of vocabulary and grammar to further develop all communication skills, especially oral proficiency.
- Study and critically evaluate different aspects of contemporary French life and culture.

---

### Conditions for enrolment in the course:

Completion of Beginning French I, Beginning French II and Intermediate French I

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### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Create formal and informal texts in written form to communicate effectively in formal and informal settings
- CLO2:** Criticize different cultural aspects by formulating a standpoint on various topic
- CLO3:** Design and deliver a presentation on personal or professional topics
- CLO4:** Differentiate more complex grammar structures and vocabulary at intermediate level

## Course content:

- discussing different topics related to course materials applying all verb tenses
- introducing and practicing contemporary formal French language and defining cultural differences in professional environments
- participating in debates and arguing for or against a certain position in class discussions
- critically reading and analyzing a variety of texts
- writing paragraphs in more advanced French using a variety of tenses and complex grammatical structures
- gaining a more profound understanding of French culture and differences between various cultures
- delivering a presentation in French language

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia
- Remote learning
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Quiz 1	0.5
Quiz 2	0.5
Quiz 3	0.5
Oral In-Class Examinations	0.6
Written Assignments	1.1
Final Presentation	0.4
Homework	0.4
<b>Total</b>	<b>4</b>



Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Quiz 1	12
Quiz 2	12
Quiz 3	12
Oral In-Class Examinations	16
Written Assignments	28
Final Presentation	10
Homework	10
Total:	100

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### Required reading:

- Muyskens, J., Harlow, L., Vialet, M., & Brière, J. (2013). *Bravo!* 8<sup>th</sup> edition. Cengage.
- Muyskens, J., Harlow, L., Vialet, M., & Brière, J. (2013). *Bravo! Student Activities Manual*. 8<sup>th</sup> edition. Cengage.

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### Additional reading:

- Les 500 Exercices de phonétique A1/A2 – Hachette, 2009
- Les 500 Exercices de grammaire A2-Hachette, 2006
- Nouvelle grammaire du français: Cours de Civilisation Française de la Sorbonne – Y. Dellatour, D. Jennepin, M. Léon-Dufour, B. Teyssier, Hachette, 2004
- Grammaire essentielle du français niveaux A1 A2 - Glaud Ludivine, Lannier Muriel, Loiseau Yves, Didier, 2015
- Edito 1 (méthode de français et cahier d'activités) – Marie-Pierre Baylocq Sassoubre, Stéphanie Brémaud, Stefano Campopiano, Clara Cheilan, Erwan Dambrine, Cécile Pinson, Didier, 2016
- Génération A2 (méthode de français) – P.Dauda, L.Giachino, C. Baracco, Didier, 2016

Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Intermediate Italian II
Course leader:	Zrinka Friganović Sain
Study programme:	WMC
Course status:	Obligatory
Year:	Third
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

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### Course objectives:

- Provide students with adequate tools to further increase their ability to function better in Italian language and understand better all aspects of Italian culture, formal and informal.
- Practice formal language in written and oral form as well as cultural behavior in professional environment.
- Engage students in complex communication activities, contemporary texts, and more advanced study of vocabulary and grammar to further develop all four language skills, especially oral proficiency.
- Study and critically evaluate different aspects of contemporary Italian life and culture.

---

### Conditions for enrolment in the course:

Completion of Beginning Italian I, Beginning Italian II and Intermediate I

---

### Expected learning outcomes of the course:

A student will be able to:

**CLO1:** Create formal and informal texts in written form to communicate effectively in formal and informal settings.

**CLO2:** Criticize different cultural aspects by formulating a standpoint on various topic.

**CLO3:** Design and deliver a presentation on personal and/or professional topics.

**CLO4:** Differentiate more complex grammar structures and vocabulary at intermediate level.

---

## Course content:

- Discussing different topics related to course materials applying all verb tenses.
  - Introducing and practicing contemporary formal Italian language and defining cultural differences in professional environment.
  - Participating in debates and arguing for or against a certain position in class discussions.
  - Critically reading and analyzing a variety of texts.
  - Writing paragraphs in Italian using a variety of tenses and complex grammatical structures.
  - Gaining a more profound understanding of Italian culture and differences between various cultures.
  - Delivering a presentation in Italian language.
- 

## Teaching delivery methods:

- Lectures
  - Exercises
  - Independent work
  - Multimedia
  - Remote learning
  - Project work
- 

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

## Monitoring student work:

Activity	ECTS
Quiz 1	0.5
Quiz 2	0.5
Quiz 3	0.5
Oral In-Class Examinations	0.6
Written Assignments	1.1
Final Presentation	0.4
Homework	0.4
<b>Total</b>	<b>4</b>

Teaching time has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Quiz 1	12
Quiz 2	12
Quiz 3	12
Oral In-Class Examinations	16
Written Assignments	28
Final Presentation	10
Homework	10
Total:	100

---

### Required reading:

Di Francesco A. & Massimo Naddeo C. (2009). *Bar Italia*. Progetto Italiano, Firenze.

Italiano F. & Marchegiani I. (2007). *Crescendo: An Intermediate Italian Program*. second edition. Thomson and Heinle. Boston. MA. United States.

Italiano F. & Marchegiani I. (2007). *Crescendo: Workbook/Lab Manual and Audio CDs*

Tognozzi E. & Cavatorta G. (2013). *Ponti: italiano terzo millennio*. 3rd edition. Heinle Cengage Learning. Boston. MA. United States.

Tognozzi E. & Cavatorta G. (2013). *Ponti: italiano terzo millennio. Student Activities Manual*. 3rd edition. Heinle Cengage Learning. Boston. MA. United States.

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## Additional reading:

Manella, C. (2010). *Ecco! Grammatica Italiana*. 12<sup>th</sup> edition. Progetto Lingua, Firenze.

Manella, C. (2010). *Dizionario dei verbi italiani*. 12th edition. Progetto Lingua, Firenze.

Guastalla, C. (2012). *Giocare con la letteratura*. Alma Edizioni, Firenze.

Barki P. & Diadori P. (1999). *Pro e contro 1/2: conversare e argomentare in italiano*. Livello intermedio, libro dello studente. 2nd edition. Bonacci editore, Roma.

Barki P. & Diadori P. (1999). *Pro e contro 1/2: conversare e argomentare in italiano*. Livello intermedio, guida per l'insegnante. 2nd edition. Bonacci editore, Roma.

Anzivino F. & D'Angelo K. (2009). *Ci vuole orecchio! 2/3, Ascolti autentici per sviluppare la comprensione orale*, ALMA Edizioni, Firenze.

---

## Methods for quality monitoring that ensure the acquisition of knowledge, skills, and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Intermediate Russian II
Course leader:	Ana Peković
Study programme:	WMC
Course status:	Not obligatory
Year:	Third
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

---

### Course objectives:

- Provide students with adequate tools to further increase their ability to function better in Russian language and understand better all aspects of Russian culture, formal and informal.
- Practice formal language and cultural behavior in professional environment
- Engage students in complex communication activities, contemporary texts, and more advanced study of vocabulary and grammar to further develop all communication skills, especially oral proficiency.
- Study and critically evaluate different aspects of contemporary Russian life and culture.

---

### Conditions for enrolment in the course:

Completion of Beginning Russian I, Beginning Russian II and Intermediate Russian I

---

### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Create formal and informal texts in written form to communicate effectively in formal and informal settings
- CLO2:** Criticize different cultural aspects by formulating a standpoint on various topic
- CLO3:** Design and deliver a presentation on personal or professional topics
- CLO4:** Differentiate more complex grammar structures and vocabulary at intermediate level

## Course content:

- discussing different topics related to course materials applying all verb tenses
- introducing and practicing contemporary formal Russian language and defining cultural differences in professional environments
- participating in debates and arguing for or against a certain position in class discussions
- critically reading and analyzing a variety of texts
- writing paragraphs in more advanced Russian using a variety of tenses and complex grammatical structures
- gaining a more profound understanding of Russian culture and differences between various cultures
- delivering a presentation in Russian language

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia
- Remote learning
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Quiz 1	0.5
Quiz 2	0.5
Quiz 3	0.5
Oral In-Class Examinations	0.6
Written Assignments	1.1
Final Presentation	0.4
Homework	0.4
<b>Total</b>	<b>4</b>



Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments.

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## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Quiz 1	12
Quiz 2	12
Quiz 3	12
Oral In-Class Examinations	16
Written Assignments	28
Final Presentation	10
Homework	10
Total:	100

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### Required reading:

- Robin et al. *Golosa – A basic course in Russian*, 5<sup>th</sup> edition. Pearson.

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### Additional reading:

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### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Intermediate German II
Course leader:	Nikolina Božinović
Study programme:	Web and Mobile Computing
Course status:	Elective
Year:	Third
ECTS points:	4
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

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### Course objectives:

- Provide students with adequate tools to further increase their ability to function better in German language and understand better all aspects of German culture, formal and informal.
- Practice formal language and cultural behavior in professional environment
- Engage students in complex communication activities, contemporary texts, and more advanced study of vocabulary and grammar to further develop all communication skills, especially oral proficiency.
- Study and critically evaluate different aspects of contemporary German life and culture.

---

### Conditions for enrolment in the course:

Completion of Beginning German I, Beginning German II and Intermediate German I

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### Expected learning outcomes of the course:

A student will be able to:

**CLO1:** Create formal and informal texts in written form to communicate effectively in formal and informal settings

**CLO2:** Criticize different cultural aspects by formulating a standpoint on various topic

**CLO3:** Design and deliver a presentation on personal or professional topics

**CLO4:** Differentiate more complex grammar structures and vocabulary at intermediate level

## Course content:

- discussing different topics related to course materials applying all verb tenses
- introducing and practicing contemporary formal German language and defining cultural differences in professional environments
- participating in debates and arguing for or against a certain position in class discussions
- critically reading and analyzing a variety of texts
- writing paragraphs in more advanced German using a variety of tenses and complex grammatical structures
- gaining a more profound understanding of German culture and differences between various cultures
- delivering a presentation in German language

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Multimedia
- Remote learning
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions

---

## Monitoring student work:

Activity	ECTS
Quiz 1	0.5
Quiz 2	0.5
Quiz 3	0.5
Oral In-Class Examinations	0.6
Written Assignments	1.1
Final Presentation	0.4
Homework	0.4
<b>Total</b>	<b>4</b>

Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments.

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## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Quiz 1	12
Quiz 2	12
Quiz 3	12
Oral In-Class Examinations	16
Written Assignments	28
Final Presentation	10
Homework	10
Total:	100

---

### Required reading:

- Moeller, J., Mabee, B., Berger, S., Adolph, W. (2016). *Kaleidoskop Kultur, Literatur und Grammatik*, Ninth Edition, Cengage Learning.
- Moeller, J., Mabee, B., Berger, S., Adolph, W. (2016). *Kaleidoskop Kultur, Literatur und Grammatik*, Student Activities Manual, Ninth Edition, Cengage Learning.

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### Additional reading:

- Funk, H. Kuhn, C., Demme, S. (2006). *Studio d A2 Deutsch als Fremdsprache*, Cornelsen Verlag, Berlin.
- Funk, H., Kuhn, C., Demme, S., Winzer, B. (2009). *Studio d B1 Deutsch als Fremdsprache*, Cornelsen Verlag Berlin.
- Augustyn, P.; Euba, N. (2020). *Stationen, Ein Kursbuch für die Mittelstufe*. Fourth Edition, Cengage Learning.
- German College Dictionary, Harper-Collins, Second Edition (or any other dictionary of the German language)

Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	WMC COOPERATIVE EDUCATION 2
Course leader:	Petra Očinić
Study programme:	WMC
Course status:	Obligatory
Year:	Third
ECTS points:	12
Teaching hours (L+S+E):	co-op

## Course Description

Career-related work experience. Employment within the IT related industries is monitored by the Web and Mobile Computing Program and the Career Services Office.

### Course objectives:

- Coop work is designed for the student to experience progressive training on the job as related to the academic option.

### Conditions for enrolment in the course:

Having completed WMC cooperative education

### Expected learning outcomes of the course:

A student will be able to:

**CLO1:** Apply the relevant ethical principles and work-environment behaviors within the co-op position and organization.

**CLO2:** Propose solutions to challenges within the area of co-op specialization.

**CLO3:** Integrate the creation and communication of the professional content in oral and written forms.

**CLO4:** Utilize appropriate tools, methods and techniques used in the co-op tasks or projects.

## Course content:

Co-op documentation

- Registration & offer letter
- Reports
- Evaluations

Field work

## Teaching delivery methods:

- Field work
- Mentoring
- Remote learning
- Independent work
- Project work

## Student obligations:

- Completing full 400 hours of mentored field work
- Submitting co-op documentation (registrations, reports, evaluations)

## Monitoring student work:

Activity	ECTS
Mentored fieldwork	11.7
Co-op evaluation reports	0.3
<b>Total</b>	<b>12</b>

Teaching time is worth 0 ECTS points and it has been incorporated in time for assignments.

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Mentored fieldwork	95
Co-op evaluation reports	5
Total:	100

**Required reading:**

- RIT Croatia cooperative education handbook and cooperative education bylaw

**Additional reading:**

- ...

**Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:**

- RIT Croatia cooperative education registration form & offer letter
- RIT Croatia cooperative education biweekly report form for students on remote or project-based co-op formats
- RIT Croatia cooperative education student evaluation form
- RIT Croatia cooperative education employer evaluation form



# **YEAR 4 – COURSE DESCRIPTIONS**

## General Information

Course title:	Mobile Application Development I
Course leader:	Matija Ožetski
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	Forth
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

This course extends the material covered in the Foundations of Mobile Design course and provides students with experience writing native applications for mobile devices such as Smartphone's in one of the current major platforms. These devices are exceptionally portable, have unique sets of hardware and communications capabilities, incorporate novel interfaces, are location aware, and provide persistent connectivity. Students are encouraged to make use of these unique characteristics and operating properties to develop innovative applications. Programming projects are required.

---

### Course objectives:

- The purpose of this course is to provide students with the experience of creating native applications for mobile phones. Topics covered include user interaction patterns, connectivity, interface design, software design patterns, and application architectures within the context of mobile computing.

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### Conditions for enrolment in the course:

ISTE-252 Foundations of Mobile Design, ISTE-340 Client Programming, or instructor permission

---

### Expected learning outcomes of the course:

A student will be able to:

- CL01:** Create effective mobile interfaces based on accepted interface conventions
- CL02:** Create mobile applications that display various types of digital media
- CL03:** Design mobile applications by utilizing device sensors

**CLO4:** Design mobile applications using third-party libraries, network services, and remote data storage

---

## Course content:

### Mobile Hardware

- 1.1.1 Capabilities and Limitations
- 1.1.2 Touch interfaces
- 1.1.3 Location awareness

### Mobile User Interaction Patterns

- 1.1.4 Persistent Connectivity
- 1.1.5 Single User
- 1.1.6 Short/Frequent Use

### Programming

- 1.1.7 Available SDKs and software frameworks
- 1.1.8 Software patterns and architectures
- 1.1.9 Native Language of Platform

### Interface Conventions

- 1.1.10 Screen layout
- 1.1.11 Data display
- 1.1.12 Navigation systems
- 1.1.13 Interface elements
- 1.1.14 Animation

### Media

- 1.1.15 Digital Images
- 1.1.16 Video
- 1.1.17 Sound
- 1.1.18 Procedural drawing

### Data Acquisition

- 1.1.19 Consuming web services
- 1.1.20 Working with data formats: SON, Text
- 1.1.21 Posting data to remote data stores
- 1.1.22 System Architectures

### Data Storage

- 1.1.23 User Defaults
- 1.1.24 Plists

### Additional Device Sensors and Capabilities

- 1.1.25 Location Awareness

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Project work
- Multimedia
- Mentoring
- Critiques

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

---

## Monitoring student work:

Activity	ECTS
Homework	1.2
Mini Project	1.5
Final Project	2.1
Final Practical	1.2
<b>Total</b>	<b>6</b>

Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Homework	20
Mini Project	25
Final Project	35
Final practical	20

<b>Total:</b>	<b>100</b>
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## Required reading:

- Not required

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## Additional reading:

- Neuburg, M., & Safari, an O'Reilly Media Company. (2021). iOS 15 programming fundamentals with swift (1st ed.) O'Reilly Media, Inc.
- Smyth, N., & Safari, an O'Reilly Media Company. (2021). SwiftUI essentials - iOS 14 edition (1st ed.) Packt Publishing.

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## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Senior Development Project I
Course leader:	Assoc. Prof. Martin Žagar, Ph.D. in C.S., EMBA
Study programme:	WMC
Course status:	Obligatory
Year:	Fourth
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

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### Course objectives:

- Apply requirements elicitation methods in an extra-classroom environment.
- Architect an effective, user-centric solution
- Apply contemporary software development practices

---

### Conditions for enrolment in the course:

Students must have taken all core courses in their degree and completed their co-op requirements in order to demonstrate their mastery of the core topics and their ability to apply them in a development environment.

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### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Design requirement methods for a real-world environment project
- CLO2:** Architect an effective user-centric solution based on project requirements
- CLO3:** Apply contemporary software development practices
- CLO4:** Create a proper project plan
- CLO5:** Evaluate work structure and project schedule
- CLO6:** Defend proposal for Minimum Viable Product

## Course content:

### Project guidelines

- Project expectations
- Team assignments

### Team and communication dynamics

- Team formation
- Group dynamics
- Ethics

### Requirements elicitation: methods and processes

- Requirements development
- Requirements tracking

### Software project management

- Project charters
- Project methodologies
- Project strategies

### Project plan development

- Work Breakdown Structure and tasks

### System architecture and design

- Development environments
- Development of use cases/user stories
- Technology selection and testing
- Technology verification
- Defining Minimum Viable Product

### Time and cost estimation

- Time estimation methods
- Scheduling tools

### Risk management

- Typical project failures
- Scope management
- Change management

### Project management documentation and presentation

- Documentation types

- Presentation etiquette
- Visual aids
- Communication etiquette
- Communication Vehicles
- Wireframes

---

## Teaching delivery methods:

- Lectures
- Independent work
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions



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## Monitoring student work:

Activity	ECTS
Quiz Teams and Group Dynamics	0.06
Quiz Ethics	0.06
Deliverable 1 Team Contract	0.3
Quiz Gate Reviews	0.06
Quiz Requirements Gathering	0.06
Deliverable 2 Interview Preparation Documentation	0.18
Quiz Requirements Development	0.06
Quiz Requirements Tracking	0.06
Quiz Use Cases and User Stories	0.06
Deliverable 3 Use Case and User Story Documentation	0.9
Quiz Development Environments	0.06
Quiz Technology Selection	0.06
Quiz Technology Testing	0.06
Quiz Technology Verification	0.06
Quiz Minimum Viable Product	0.06
Quiz Operational Definitions	0.06
Quiz Charters and Plans	0.06
Deliverable 4 Project Charter	0.6
Deliverable 5 Work Breakdown Structure	0.6
Quiz Project Management Intro	0.06
Quiz Project Strategies	0.06
Quiz Methodologies	0.06
Deliverable 6 Project Plan	0.9
Quiz Cost Estimation	0.06
Quiz Scheduling	0.06
Quiz Managing project change	0.06
Quiz Managing Risk	0.06
Deliverable 7 Risks	0.3
Quiz Communication Etiquette	0.06
Deliverable 8 Wireframes & MVP presentation	0.3
Deliverable 9 Peer Review	0.3
Participation	0.3
<b>Total</b>	<b>6</b>

Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments.

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Quiz Teams and Group Dynamics	1
Quiz Ethics	1
Deliverable 1 Team Contract	5
Quiz Gate Reviews	1
Quiz Requirements Gathering	1
Deliverable 2 Interview Preparation Documentation	3
Quiz Requirements Development	1
Quiz Requirements Tracking	1
Quiz Use Cases and User Stories	1
Deliverable 3 Use Case and User Story Documentation	15
Quiz Development Environments	1
Quiz Technology Selection	1
Quiz Technology Testing	1
Quiz Technology Verification	1
Quiz Minimum Viable Product	1
Quiz Operational Definitions	1
Quiz Charters and Plans	1
Deliverable 4 Project Charter	10
Deliverable 5 Work Breakdown Structure	10
Quiz Project Management Intro	1
Quiz Project Strategies	1
Quiz Methodologies	1
Deliverable 6 Project Plan	15
Quiz Cost Estimation	1
Quiz Scheduling	1
Quiz Managing project change	1

Quiz Managing Risk	1
Deliverable 7 Risks	5
Quiz Communication Etiquette	1
Deliverable 8 Wireframes & MVP presentation	5
Deliverable 9 Peer Review	5
Participation	5
<b>Total:</b>	<b>100</b>

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### Required reading:

- Gottesdiener, E. (2009). Requirements by Collaboration: Workshops for Defining Needs. Addison-Wesley Professional.
- Berczuk, S., Appleton, B., & Brown, K. (2003). Software Configuration Management Patterns: Effective Teamwork, Practical Integration. Addison-Wesley Professional.

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### Additional reading:

- Assigned readings

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### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	COS-ENVS-151- Scientific Inquiries in Environmental Science
Course leader:	Staša Puškarić
Study programme:	IB, IHSM, WM, NMD
Course status:	Obligatory/Elective
Year:	Third, Fourth
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

This course is part of a two-semester sequence that when combined presents an integrated approach to the interrelated, interdisciplinary principles of environmental science through case studies, site visits, and field work. Through assigned readings, classroom discussion and case studies dealing with global environmental issues as well as the environmental issues related to the Dalmatian coast, students will learn how to critically analyze environmental problems from a multidisciplinary perspective and to propose solutions.

---

### Course objectives:

- This course will introduce students to interdisciplinary environmental problems with a focus on the underlying scientific principles surrounding the issues.
- Students will learn problem solving techniques that integrate concepts and tools across disciplines and learn to conceptualize environmental problems from multiple perspectives.

---

### Conditions for enrolment in the course:

Prerequisite ENVS 150

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### Expected learning outcomes of the course:

A student will be able to:

- LO1:** Develop one's own theories, methods, procedures, models, and other scientific results applying a scientific method
- LO2:** Analyze existing sources and databases with the aim of collecting data needed for carrying out own research

**LO3:** Solve complex problems using scientific methods

**LO4:** Compose a scientific manuscript

**LO5:** Formulate and defend claims and solutions using evidence gathered from own research.

---

## Course content:

This is a project based course. Accompanied with lectures, class discussions and in-class presentations students will be led through the entire scientific method process. From defining problems, forming research questions and ideas, conducting their own research (primary research), discussing their results and organizing information in a scientific research paper. The course culminates with student final presentations in the last week of the semester in which they have to summarize their work during the course.

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## Teaching delivery methods:

- Lectures
- Exercises
- Field work
- Independent work
- Project work

---

## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

---

## Monitoring student work:

Activity	ECTS
Assignment 1	1.5
Assignment 2	2
Participation	1.5
<b>Total</b>	<b>5</b>

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## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Assignment 1	25
Assignment 2	25
Attendance	25
Participation	25
<b>Total:</b>	<b>100</b>

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### Required reading (at the moment of submitting the Study Programme Report):

Griffin, J.M. *Global Climate Change: the science, economics and politics*. The Bush School, College Station, TX

Diamond, J. *Collapse: How Societies Choose to Fail or Survive*. Penguin Books, London, UK.

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### Additional reading (at the moment of submitting the Study Programme Report):

- Papers selected from the primary literature (RIT Wallace library)

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### Number of copies of required reading in relation to the number of students who currently attend a course:

Materials available at RIT online library The Wallace Center.

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### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course leader:	Francis Brassard
Course title:	Heritage and Tourism
Study programme:	New Media Design/HTM/WMD
Course status:	Elective
Year:	Third or Fourth
Number of ECTS credits:	6
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

- Tourism is a global industry and an important part of the human experience. There are many forces within tourism that act upon people's lives, and in particular their environments, economies, cultural heritage, and identity. This course will explore tourism and its many dimensions. Beginning with an examination of kinds of tourism, this course unpacks tourism's ancient trade and pilgrimage routes as well as its class dynamics of post-industrialization. Other aspects of tourism to be explored include strategies and effects of tourism development and production, nationalism and cultural identity, commodification and marketing of culture and the ethics of development, labor and infrastructural changes, social inequalities, ecological impact, sustainable tourism, the experience of tourists, ritual and authenticity, and the relationship between tourists and tourism workers. This course provides opportunities for cross-cultural analysis of tourism sites, for participant observation of the tourist experience, and for evaluation and recommendation of tourism site development in and around Dubrovnik and Croatia.

---

### Course objectives:

1. Deconstruct tourism as a normal cultural and economic activity.
2. Identify behavioral patterns within tourism settings.
3. Identify key terms and concepts within tourism analyses.
4. Compare/contrast tourism activities across the industry and globe and critically engage with a view to best practices.
5. Analyze the impacts of tourism industry (cause and effect) on local communities.
6. Assess harmonious and mutually benefitting host and guest relationships.
7. Assess awareness of sustainable environmental effects of tourism.
8. Apply global principles to real life tourism site/ project.

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## Conditions for enrolment in the course:

None

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## Expected learning outcomes of the course:

A student will be able to:

- LO1:** Analyze the impacts of the tourism industry (cause and effect) on local communities.
- LO2:** Discuss the various issues related to the development and implementation of heritage tourism destinations and events.
- LO3:** Compare tourism activities across the industry taking into consideration its best practices.
- LO4:** Design an original cultural heritage project or improve an existing one.

---

## Course content:

1. Introduction and definition of heritage/cultural tourism
2. Challenges in achieving sustainable cultural tourism
3. The various types of tourism
4. Cultural heritage management
5. The types of cultural asset and the concept of commodification
6. The types of cultural tourist
7. The notion of gatekeepers
8. Marketing for Cultural Heritage Management

---

## Teaching delivery methods:

- Lectures and multimedia presentations
- Class discussions

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## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

---

## Monitoring student work:

Activity

ECTS



“What is going on” short presentations	0.95
Short report	1.7
Learning cell assignment	0.95
Midterm presentation	1.2
Final presentation	1.2
<b>Total</b>	<b>6</b>

Teaching time has been incorporated in time for assignments.

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## Assessment and evaluation of student work:

### Components of evaluation:

Component	Points/%
“What is going on” short presentations (3@5%)	15
Short report (3@10%)	30
Learning cell assignment	15
Midterm presentation	20
Final presentation	20
<b>Total:</b>	<b>100</b>

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### Required reading:

- McKercher, Bob and Hilary du Cros. (2002). *Cultural Tourism: The Partnership Between Tourism and Cultural Heritage Management*. New York: The Haworth Press, Inc. (Available online at <https://library.rit.edu>)

- The material will be supplied by the instructor.

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## Additional reading:

- Chhabra, Deepak. (2010). *Sustainable Marketing of Cultural and Heritage Tourism*. London and New York: Routledge.
- *Cultural Heritage and Tourism in the Developing World: A regional perspective*. (2009). Edited by Dallen J. Timothy and Gyan P. Nyaupane. London and New York: Routledge.
- *Cultural Tourism*. (2013) Edited by Razaq Raj, Kevin Griffin and Nigel Morpeth. Oxfordshire: CABl.
- *Cultural Tourism in a Changing World: Politics, Participation and (Re)presentation*. (2006) Edited by Melanie Smith and Mike Robinson. Clevedon, Buffalo and Toronto: Channel View Publications.
- *Heritage and Tourism: Place, encounter, engagement*. (2013) Edited by Russell Staiff, Robyn Bushell and Steve Watson. London and New York: Routledge.
- Reisinger, Yvette and Lindsay W Turner. (2003). *Cross-Cultural Behaviour in Tourism: Concepts and Analysis*. Oxford: Butterworth-Heinemann.
- Smith, K. Melanie. *Issues in Cultural Tourism Studies*. (2003) London and New York: Routledge.
- *The Routledge Handbook of Cultural Tourism*. (2013) Edited by Melanie Smith and Greg Richards. London and New York: Routledge.

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## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	ISTE-432 Database Application Development
Course leader:	dr. sc. Branko Mihaljević, prof.
Study programme:	Web and Mobile Computing (WMC) Program
Course status:	Elective
Year:	Third / Fourth
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

Database applications have aspects that need to be considered when designing and developing larger-scale information systems. In this 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.

---

### Course objectives:

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.

---

### Conditions for enrolment in the course:

- ISTE-330 or equivalent course
- ISTE-230 or equivalent course
- ISTE-120 or GCIS-124 or equivalent course

---

## Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Develop database-centric applications that interact with various database management systems (DBMSs)
- CLO2:** Implement methods for controlling concurrent multi-user access in database applications
- CLO3:** Evaluate various programming techniques for data retrieval, storage, and management on databases
- CLO4:** Create applications that maintain data integrity in multi-user environments
- CLO5:** Select appropriate object-relational mapping frameworks
- CLO6:** Build effective, user-centric software solutions within information-intensive environments using various data sources

---

## Course content:

Course topics include:

- Introduction to Software Architecture (Styles, Design, Analysis and Selection)
- Advanced Database Connectivity and Access (based on ISTE-330)
- Multi-User Considerations and Big Data
- Data Persistence, Transactions, and Business Layers Binding
- Performance and Scalability Considerations, Query Design (SQL)
- Object-Relational Mapping (ORM)
- Software Design Patterns and Antipatterns - Best Practices
- Security Considerations (Authentication and Authorization) and Adequate Error Handling
- Database Design and Modeling for Effective and Efficient Usage from an Application
- Final Project with Demonstration - application and database

---

## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Project work
- Peer review

---

## Student obligations:

- Attending classes
- Submitting projects and assignments

- Participate in discussions

---

## Monitoring student work:

Activity	ECTS
Exercises	1.0
Midterm Exam Theory	0.5
Midterm Exam Practical	0.75
Participation	0.25
Final Project	1.75
Final Exam	0.75
<b>Total</b>	<b>5</b>

Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments, projects and preparing for the exams.

---

## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Exercises	20
Midterm Exam Theory	10
Midterm Exam Practical	15
Participation	5
Final Project	35
Final Exam	15
<b>Total:</b>	<b>100</b>

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## Required reading:

- Sharan, K. (2018). JDBC API. In: Java APIs, Extensions and Libraries: With JavaFX, JDBC, jmod, jlink, networking, and the process API (2nd ed.). Apress. – available as eBook in RIT Library
- MySQL (2022). MySQL Connector/J 8.0 Developer Guide. Oracle. – available online for free
- Ottinger, J.B., Linwood J., Minter D. (2021). Beginning Hibernate 6: Java Persistence from Beginner to Pro, Apress – available as eBook in RIT Library

- Spilca, L. (2021). Spring Start Here, Manning Publications – available as eBook in RIT Library

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## Additional reading:

- Leonard, A. (2020). Spring Boot Persistence Best Practices: Optimize Java Persistence Performance in Spring Boot Applications. Apress – available as eBook in RIT Library
- Sacco, A. (2022). Beginning Spring Data: Data Access and Persistence for Spring Framework 6 and Boot 3. Apress – available as eBook in RIT Library
- Walls, C. (2018). Spring in Action, 5th ed., Manning Publications – available as eBook in RIT Library
- Spilca, L. (2020). Spring Security in Action, Manning Publications – available as eBook in RIT Library

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## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Data Mining and Exploration
Course leader:	Alan Mutka
Study programme:	Web and Mobile Computing
Course status:	Elective
Year:	Third, Fourth
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

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### Course objectives:.

- Students will be introduced to the latest software tools and techniques for data exploration and data mining
- Students will discuss data mining techniques and their application to large data sets
- Students will learn the importance of applying data visualisation practices to facilitate exploratory data analysis

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### Conditions for enrolment in the course:

ISTAT-145 OR MATH-251 and GCIS-124 OR ISTE-121

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### Expected learning outcomes of the course:

A student will be able to:

**CLO1:** Analyze data mining problem and select the most appropriate method for a given dataset

**CLO2:** Implement basic pre-processing, association mining, classification and clustering algorithms

**CLO3:** Develop advanced applications based on pre-processing, association mining, classification and clustering

**CLO4:** Work efficiently in groups and evaluate the algorithms on real-world problems

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## Course content:

- Introduction to Data Mining
- Data / Exploring Data
- Classification
- Association Rules
- Cluster Analysis
- Anomaly Detection

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## Teaching delivery methods:

- Lectures
- Independent work
- Laboratory
- Mentoring
- Peer review
- Project work

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## Student obligations:

- Attending classes
- Submitting assignments
- Participate in discussions

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## Monitoring student work:

Activity	ECTS
Midterm Exam	0.9
Final Exam	0.9
Homework	1.2
Laboratory	0.6
Project	2.4



Total

6

Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments.

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## Assessment and evaluation of student work

Components of evaluation:

Component	Points/%
Midterm Exam	15
Final Exam	15
Homework	20
Laboratory	10
Project	40
<b>Total:</b>	<b>100</b>

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## Required reading:

- Tan, P., Steinbach, M., Karpatne, A. & Kumar, V. (2019). "Introduction to Data Mining" 2nd Ed. Pearson Addison Wesley (2019). ISBN 0-13-31289-3

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## Additional reading:

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## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Mobile Application Development II
Course leader:	Matija Ožetski
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	Forth
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

This course extends the Mobile Application Development I experience to medium-size form factor mobile devices such as slates and tablets. Compared to smartphones, these devices have much larger screen areas, and have the potentials for more processing power, higher capacity memories, additional sensors, and higher capacity batteries. Students are encouraged to make creative use of these increased display and computing resources to develop innovative applications. Programming projects are required.

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### Course objectives:

- The purpose of this course is to provide students with the experience of creating native applications for mobile phones and tablets. Topics covered include user interaction patterns, connectivity, interface design, software design patterns, and application architecture within the context of mobile computing for mobile platform Android

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### Conditions for enrolment in the course:

ISTE-252 Foundations of Mobile Design, ISTE-340 Client Programming, or instructor permission

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### Expected learning outcomes of the course:

A student will be able to:

**CLO1:** Create effective mobile interfaces based on accepted interface conventions

**CLO2:** Create mobile applications that display various types of digital media.

**CLO3:** Design mobile applications by utilizing device sensors

**CLO4:** Design mobile applications using third-party libraries, network services, and remote data storage

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## Course content:

- Programming environments
- Mobile HCI
- Standards and interface conventions
- Mobile media
- Mobile data acquisition
- Mobile data storage
- Security, privacy, and ethics

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## Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Project work
- Multimedia
- Mentoring
- Critiques

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## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

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## Monitoring student work:

Activity	ECTS
Homework	2.4
Final Project	2.4
Final Exam	1.2
<b>Total</b>	<b>6</b>

Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments.

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## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Homework	40
Final Project	40
Final Exam	20
<b>Total:</b>	<b>100</b>

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### Required reading:

- Not required

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### Additional reading:

- Laurence, P., Hinchman-Dominguez, A., Dunn, M., Meike, G., & Safari, an O'Reilly Media Company. (2021). Programming android with kotlin (1st ed.). O'Reilly Media, Inc.

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### Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes

## General Information

Course title:	Senior Development Project II
Course leader:	Assoc. Prof. Martin Žagar, Ph.D. in C.S., EMBA
Study programme:	WMC
Course status:	Obligatory
Year:	Fourth
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

## Course Description

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### Course objectives:

- Design and evaluate domain-sensitive end-user experiences.
- Apply contemporary software development practices
- Develop and deploy n-tier, integrated, user-centric computing systems

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### Conditions for enrolment in the course:

Students must have successfully completed the first course (ISTE-500) in this two-course sequence.

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### Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Evaluate domain-sensitive end-user experiences
- CLO2:** Combine contemporary software development practices
- CLO3:** Create n-tier, integrated, user-centric computing systems
- CLO4:** Deploy the project in an out-of-classroom environment
- CLO5:** Create system and user documentation suitable for continued project support and operation
- CLO6:** Discuss the solution in front of the sponsor

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## Course content:

### Technology adoption

- Adoption Considerations: Adopter Types and Product Characteristics

### Software development

- User interfaces
- Beta product presenting
- Secondary consequences
- Usability testing
- System testing
- Integration needs
- Database and Backend development
- UX/Frontend Design

### Software project management

- Project charters
- Project methodologies
- Project strategies

### Documentation

#### Maintenance procedures

#### Project status reports

- Individual status report
- PM status report
- Sponsor report

### Writing and presenting for a specific audience

- Gate reviews
- Phase gates
- Traceability matrix

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## Teaching delivery methods:

- Lectures
- Independent work

- Project work

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## Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate in discussions

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## Monitoring student work:

Activity	ECTS
Quiz Consequences	0.075
Quiz Technology Selection	0.075
Participation	0.225
Peer Evaluations	0.6
Quiz Secondary Consequences	0.075
Project Functionality	0.81
Quiz Change Strategies	0.075
Quiz Unit Testing	0.075
Quiz Strategically Defining Your Customer	0.075
Project Quality	0.81
Quiz Deployment	0.075
Deployment Plan	0.405
Team Status Presentation 1	0.09
Team Status Presentation 2	0.27
Team Status Presentation 3	0.36
Project Documentation	0.675
Quiz Status reports	0.075
Quiz Sponsor reports	0.075
Individual Status Report 1	0.18
Individual Status Report 2	0.18
Individual Status Report 3	0.18
Individual Status Report 4	0.27
Individual Status Report 5	0.27
<b>Total</b>	<b>6</b>

Teaching time is worth 1.5 ECTS points and it has been incorporated in time for assignments.

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## Assessment and evaluation of student work

### Components of evaluation:

Component	Points/%
Quiz Consequences	1.25
Quiz Technology Selection	1.25
Participation	3.75
Peer Evaluations	10
Quiz Secondary Consequences	1.25
Project Functionality	23.5
Quiz Change Strategies	1.25
Quiz Unit Testing	1.25
Quiz Strategically Defining Your Customer	1.25
Project Quality	23.5
Quiz Deployment	1.25
Deployment Plan	6.75
Team Status Presentation 1	1.5
Team Status Presentation 2	4.5
Team Status Presentation 3	6
Project Documentation	11.25
Quiz Status reports	1.25
Quiz Sponsor reports	1.25
Individual Status Report 1	3
Individual Status Report 2	3
Individual Status Report 3	3
Individual Status Report 4	4.5
Individual Status Report 5	4.5
<b>Total:</b>	<b>100</b>

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### Required reading:

- None required



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## Additional reading:

- Assigned readings

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## Methods for quality monitoring that ensure the acquisition of knowledge, skills and competencies:

- Student survey
- Observation of lectures
- Assessment of the achievement of learning outcomes