

RIT CROATIA PROGRAM DELIVERY PLAN FOR ACADEMIC YEAR 2024/2025

PROGRAM TITLE: WEB AND MOBILE COMPUTING – DUBROVNIK

TYPE OF PROGRAM: Undergraduate professional program

LOCATION: Dubrovnik

FALL SEMESTER DATES: September 2th – December 20th

FALL SEMESTER FINALS: December 12th – 18th

SPRING SEMESTER DATES: January 20th – May 16th

SPRING SEMESTER FINALS: May 8th – 14th

LANGUAGE: English

1. FALL SEMESTER SCHEDULE

	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	
Designer for Developers - 17703 ISTE-44 (Stinic) VC Lab 35				Software Dev and Prob Solving I - 17500 OCIS-123 (Tolic) Lab 35				Seni Prog - 17470 ISTE-241 (Tolic) Room 35			User Exp - 17465 ISTE-350 (Radovan) VC Lab 35				Lab 35					Lab 35	Mobile App Dev I - 17472 ISTE-454 (Cesari) Lab 35 ON-LINE Zoom							
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VC = Video Conference

2. LIST OF COURSES WITH ASSIGNED CREDITS (class and credit hours) and ECTS POINTS PER SEMESTER/YEAR LEVEL *

YEAR 1

FALL 1						
Course Number	Name	Class Hours	Lab Hours	Credit Hours	ECTS	Instructor
GCIS- 123	Software Development and Problem Solving I	4	2	4	6	Domagoj Tolić
ISTE - 140	Web & Mobile I	3	0	3	6	Aleksander Radovan
ISTE - 444	Design for Developers	3	0	3	6	Lamila Šimić
MATH - 131	Discrete Mathematics	4	0	4	5	Marlena Ćukteraš
UWRT - 100	Critical Reading and Writing	3	0	3	5	Rebecca Charry

SPRING 1						
Course Number	Name	Class Hours	Lab Hours	Credit Hours	ECTS	Instructor
GCIS- 124	Software Development and Problem Solving II	4	2	4	6	Domagoj Tolić
ISTE - 240	Web and Mobile II	3	0	3	6	Aleksander Radovan
ISTE - 230	Intro to Database and Data Modeling	3	0	3	6	Toni Njirić
MATH - 161	Applied Calculus	2	2	4	5	Marlena Ćukteraš
UWRT - 150	Writing Seminar	3	0	3	5	Rebecca Charry

YEAR 2

FALL 2						
Course Number	Name	Class Hours	Lab Hours	Credit Hours	ECT S	Instructor
ISTE - 222	Applied Data Structures and Algorithms	3	0	3	6	Toni Njirić
ISTE - 260	Designing the User Experience	3	0	3	5	Aleksander Radovan
SOCI - 102	Foundations of Sociology	3	0	3	5	Vanda Bazdan
NSSA - 290	Networking Essentials for Developers	3	0	3	5	Toni Njirić
MLSP - 201	Beginning Spanish I	2	2	4	5	Barbara Perić
MLGR - 201	Beginning German I	2	2	4	5	Nikolina Božinović
MLIT - 201	Beginning Italian I	2	2	4	5	Zrinka Friganović Sain
MLFR - 201	Beginning French I	2	2	4	5	Tea Kovačević

SPRING 2						
Course Number	Name	Class Hours	Lab Hours	Credit Hours	ECT S	Instructor
SWEN - 383	Software Design Principles and Patterns	3	0	3	6	Domagoj Tolić
ISTE - 340	Client Programming	3	0	3	6	Toni Njirić
ISTE - 330	Database Connectivity and Access	3	0	3	6	Toni Njirić
ISTE - 252	Foundation of Mobile Design	3	0	3	5	Domagoj Tolić
MLSP - 202	Beginning Spanish II	2	2	4	5	Barbara Perić
MLGR - 202	Beginning German II	2	2	4	5	Nikolina Božinović
MLIT - 202	Beginning Italian II	2	2	4	5	Zrinka Friganović Sain
MLFR - 202	Beginning French II	2	2	4	5	Tea Kovačević
	WMC Co-op 1	0	400	0	12	Iva Kužina

FALL 3						
Course Number	Name	Class Hours	Lab Hours	Credit Hours	ECT S	Instructor
ISTE - 341	Server Programming	3	0	3	6	Domagoj Tolić
ISTE - 422	Application Development Practices	3	0	3	6	Toni Njirić
ENGL - 210	Literature and Cultural Studies	3	0	3	5	Rebecca Charry
MLSP - 301	Intermediate Spanish I	2	1	3	4	Barbara Perić
MLFR - 301	Intermediate French I	2	1	3	4	Tea Kovačević
MLGR - 301	Intermediate German I	2	1	3	4	Nikolina Božinović
MLIT - 301	Intermediate Italian I	2	1	3	4	Zrinka Friganović Sain
ANTH - 350	Global Economy and Grassroots	3	0	3	5	Vanda Bazdan

SPRING 3						
Course Number	Name	Class Hours	Lab Hours	Credit Hours	ECT S	Instructor
ISTE - 442	Concentration Web 1: Secure Web Application Development	3	0	3	6	Martin Žagar
ISTE - 444	Concentration Web 2: Server Development and Administration	3	0	3	6	Toni Njirić
ENVS - 150	Ecology of Dalmatian Coast	2	2	4	5	Marlena Ćukteraš
PHIL - 202	Foundations of Moral Philosophy	3	0	3	5	Vanda Bazdan
MLGR - 302	Intermediate German II	2	1	3	4	Nikolina Božinović
MLFR - 302	Intermediate French II	2	1	3	4	Tea Kovačević
MLIT - 302	Intermediate Italian II	2	1	3	4	Zrinka Friganović Sain
MLSP - 302	Intermediate Spanish II	2	1	3	4	Barbara Perić
ANTH - 301	Social and Cultural Theory	3	0	3	5	Vanda Bazdan
	WMC Co-op 2	0	400	0	12	Sara Stanić

YEAR 4

	FALL 4					
Course Number	Name	Class Hours	Lab Hours	Credit Hours	ECT S	Instructor
ISTE - 454	Mobile Application Development I	3	0	3	6	Matija Ožetski
ISTE - 500	Senior Development Project I	3	0	3	6	Martin Žagar
ANTH - 350	Global Economy and Grassroots	3	0	3	5	Vanda Bazdan
ENVS - 151	Scientific Inquiries in Environmental Science	2	2	4	5	Marlena Čukteraš
PHIL - 311	East Asian Philosophy	3	0	3	5	Francis Brassard

	SPRING 4					
Course Number	Name	Class Hours	Lab Hours	Credit Hours	ECT S	Instructor
ISTE - 456	Mobile Application Development II	3	0	3	6	Matija Ožetski
ISTE - 501	Senior Development Project II	3	0	3	6	Martin Žagar
ANTH - 275	Global Islam	3	0	3	5	Francis Brassard

* Throughout the course of their studies at RIT Croatia, students will participate in a number of activities, seminars, and workshops (RIT 365, Careers in Business, Second Year Seminar....) that will prepare them for all aspects of their college journey at RIT Croatia and contribute to their overall career development.

General Information

Course title:	Software Development and Problem Solving I
Course leader:	Domagoj Tolić
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:

- Learn to program in a selected, contemporary, high-level programming language (Python).
- Describe and apply problem-solving skills, algorithms, and data structures that are appropriate to solve a variety of computing problems of varying degrees of complexity.
- Describe and apply fundamental concepts of software engineering including understanding needs, software design, solution testing, and incremental development.

Conditions for enrolment in the course:

None/prerequisite

Expected learning outcomes of the course:

A student will be able to:

CLO1: Use basic programming language constructs in developing a solution

CLO2: Build solutions to computing problems by utilizing algorithms and data structures

CLO3: Apply software engineering concepts, including understanding needs, software design, and solution testing

Course content:

- Statements, expressions, variables, standard output/input
- Types, variables, functions, parameters, arguments
- Arrays, Boolean expressions, conditionals, iteration
- File I/O, raising exceptions, exception handling
- Basic string parsing, regular expressions
- Arrays, recursion, searching, sorting
- Classes, objects, constructors, fields, methods

Teaching delivery methods:

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

Student obligations:

- Attending classes
- Submitting assignments
- Participate in discussions

Monitoring student work:

Activity	ECTS
Quizzes	0.3
Class Activities	0.6
Problem Solving	0.6
Assignments	1.5
Practica	1.8
Final Exam	1.2
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/%
Quizzes	5
Class Activities	10
Problem Solving	10
Assignments	25
Practica	30
Final Exam	20
Total:	100

Required reading:

- Lutz, M. (2013). Learning Python. Beijing: O'Reilly. ISBN: 978-1-4493-5573-9
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Additional reading:

- Hunt, A., Thomas, D. (2000). The Pragmatic programmer : from journeyman to master. Boston [etc.]: Addison-Wesley. ISBN: 020161622X 9780201616224
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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:	Aleksander Radovan
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.

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

Conditions for enrolment in the course:

None/prerequisite

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

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

Student obligations:

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

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
Total	6

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/%
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
Total:	100

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.

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

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:	Design for Developers
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 (3+0+0)

Course Description

Course objectives:

- Understand the fundamental elements and principles of visual design.
- Experiment with design thinking and ideation techniques
- Develop proficiency in using computer-based tools for image creation and illustration
- Apply visual design principles to enhance user experience in front-end design
- Cultivate skills in graphic organization and typography for screen-based outputs
- Critically evaluate visual design solutions for effectiveness and aesthetic quality
- Document and present design concepts and processes

Conditions for enrolment in the course:

None

Expected learning outcomes of the course:

A student will be able to:

CLO1: Create imagery and graphical forms to communicate visual ideas.

CLO2: Evaluate the use and effectiveness of visual design solutions and aesthetic qualities.

CLO3: Demonstrate concept generation skills through research artifacts and documentation.

CLO4: Develop effective design solutions using imagery, composition, and typographical elements.

Course content:

This is a production-based course that introduces the basic elements, principles, and methods of visual design. Students will experiment with design thinking, ideation, and concept development techniques as they explore the computer as an illustrative and image generation tool. Emphasis is on effective visual communication and design skills through digital image creation, graphic organisation, and typography for screen-based output

Following topics will be covered:

- Concept
 - Design Process + Thinking
 - Ideation + Creativity
- Elements + Principles
 - Building blocks of design
 - Shape + Image
- Illustrator Bootcamp
 - Vector images
 - Patterns
- Photoshop Bootcamp
 - Raster images
 - Framing
- Figma Bootcamp
 - Layout
 - Wireframing + Prototyping
- Photography
 - Composition
 - Specular and diffuse light
- Collage
 - Image compositing
 - Storytelling
- Color
 - Harmonies + Pairings
 - Contrast + Accessibility
- Icons
 - Semiotics
- Typography

- Classification + Pairing
- Hierarchy
- Layout
- Presentation

Teaching delivery methods:

- Lectures
- Exercises
- In-class Labs

Comments:

Student obligations:

- Attending classes
- Submitting assignments and projects

Monitoring student work:

Activity	ECTS
Projects	2.4
Exercises	1.5
In-class Labs	1.2
Discussions	0.9
Total	6

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/%
Projects	40%

Exercises	25%
In-class Labs	20%
Discussions	15%
Total:	100

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.
- 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.

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

- 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.

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:	5
Teaching hours (L+S+E):	60 (2+0+2)

Course Description

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

Conditions for enrolment in the course:

None/prerequisite

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.

Course content:

- Number Systems
- Sets
- Logic

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

Teaching delivery methods:

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

Student obligations:

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

Monitoring student work:

Activity	ECTS
Assignment 1	1.25
Assignment 2	1.25
Assignment 3	1.5
In Class Quizz	1
Total	5

Teaching time has been incorporated in time for assignments.

Assessment and evaluation of student work

Components of evaluation:

Component	Points/%
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Assignment 1	25
Assignment 2	25
Assignment 3	30
In Class Quiz	20
Total:	100

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

Additional reading:

- None

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 (UWRT100)
Course leader:	Rebecca Charry Roje
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	First
ECTS points:	5
Teaching hours (L+S+E):	3

Course Description

Course objectives:

- Read, analyse and respond to a variety of nonfiction texts
- Give and receive peer feedback
- Understand principles of academic honesty and intellectual property

Conditions for enrolment in the course:

None/prerequisite

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 texts in standard English using appropriate style and rhetorical strategy.

Course content:

- Descriptive writing
- Paragraphing
- Sentence structure
- Word choice
- Critical reading and note taking strategies
- Cognitive bias
- Logical fallacies
- Quoting, summarizing, paraphrasing
- APA style
- Use of evidence to support arguments
- Peer review
- Self-editing and revision

Teaching delivery methods:

- Lectures
- Seminars
- Workshops
- Exercises

- Independent work

Student obligations:

- Attending classes
- Submitting assignments
- Completing exams and quizzes
- Participating in discussions

- Attending peer review and individual conference meetings

Monitoring student work:

Activity	ECTS
Descriptive essay	0.5
Language quiz	0.5
Bias and fallacies quiz	0.5
Reading assessment I	0.5
Reading assessment 2	0.5
Peer review 1	0.25
Peer review 2	0.25
Critical response draft	0.75
Critical response revision	0.75
Reflection essay	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
1. Language quiz	10
2. Fallacies quiz	10
3. Descriptive essay	10
4. Reading analysis I	10
5. Reading analysis II	10
6. Critical response essay draft	15
7. Peer review I	5
8. Critical response essay final	15
9. Peer Review II	5
10. Final reflection	10
Total:	100

Required reading:

- American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.).
- Hacker, D., & Sommers, N. (2015). *A writer's reference* (8th ed.). Bedford/St. Martin's.
- Articles and essays posted by the instructor on My Courses

Additional reading:

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

- Student course evaluation
- Peer observation of lectures
- Assessment of the achievement of learning outcomes

General Information

Course title:	Software Development and Problem Solving II
Course leader:	Domagoj Tolić
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:

- Learn to program in a selected, contemporary, high-level programming language (Java).
- Describe and apply problem solving skills, algorithms, and data structures that are appropriate to solve a variety of computing problems of varying degrees of complexity.
- Describe and apply fundamental concepts of software engineering including understanding needs, software design, solution testing, and incremental development.

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: Design a class following the object-oriented programming principles

CLO2: Design and implement algorithms that utilize data structures to solve specific computational problems

CLO3: Develop multi-threaded applications by applying concurrent programming concepts, including threads, synchronization, and inter-thread communication

Course content:

- Algorithmic thinking, computational problem solving
- Software design (UML), design principles and design patterns
- Classes, objects, constructors, fields, methods
- Inheritance, interfaces, generics, abstract classes, lambdas
- Multi-dimensional arrays, lists, queues, binary trees, maps, sets, graphs
- Concurrent Programming
- Thread Cooperation
- Networking
- Test Driven Development (TDD), unit & automated testing, command line usage, team work

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
Quizzes	0.3
Class Activities	0.6
Problem Solving	0.6
Mini-Practica	0.48
Assignments	1.02

Practica	1.8
Final Exam	1.2

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/%
Quizzes	5
Class Activities	10
Problem Solving	10
Mini-Practica	8
Assignments	17
Practica	30
Final Exam	20
Total:	100

Required reading:

- Bloch, J. (2018). Effective Java. Boston, MA: Addison-Wesley. ISBN: 978-0-13-468599-1

Additional reading:

- Hunt, A., Thomas, D. (2000). The Pragmatic programmer : from journeyman to master. Boston [etc.]: Addison-Wesley. ISBN: 020161622X 9780201616224

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:	Aleksander Radovan
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:

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

Monitoring student work:

Activity	ECTS
Group project	2
Individual project	2
Lab exercises	1
Final exam	1
Total	6

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 %
Total:	100

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.

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

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:	Toni Njirić
Study programme:	WMC
Course status:	Obligatory
Year:	First
ECTS points:	6
Teaching hours (L+S+E):	60 (2+0+2)

Course Description

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:

CLO1: Design a new data model based on entities in an information system

CLO2: Create relationships between database tables (1:1, 1:N, M:N)

CLO3: Examine the data model with first, second, third or Boyce-Codd normal form

CLO4: 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
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/%
Homeworks	40
Midterm Exam	30
Final Exam	30
Total:	100

Required reading:

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

Additional reading:

- Fehily, Chris, *SQL Visual QuickStart Guide* (3rd 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:	Marlena Ćukteraš
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:** Analyze functions, continuity, limit, derivative and integral
 - CLO 2:** Analyze mathematical concepts for modeling and solving problems from everyday environment
 - CLO 3:** Evaluate solutions of solved problems
 - CLO 4:** Formulate examples for modeling, solving and interpreting when applying mathematical framework
-

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	1.25
Exam II	1.25
Exam III	1.50
Quizzes/ Continuous work/ Participation	1
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 %
Exam I	25
Exam II	25
Exam III	30
Quizzes/ Continuous work/ Participation	20
Total	100

Required reading:

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

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

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:	WRITING SEMINAR (UWRT 150)
Course leader:	Rebecca Charry Roje
Study programme:	Web and Mobile Computing
Course status:	Obligatory
Year:	First
ECTS points:	5
Teaching hours:	3+0+0

Course Description

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:

UWRT100 Critical Reading and Writing

Expected learning outcomes of the course:

A student will be able to:

CLO1: Examine a variety of intellectually challenging non-fiction texts

Connect the ideas of others to one's own

CLO2: Produce and revise a research project in written and oral form

CLO3: Criticize peer work

1 Research Methods	0.5
2 Sources Quiz	0.5
3 Integration Quiz	0.5
4 Critical Analysis	0.5
5 Introduction & Literature Review	0.5
6 Peer Review 1	0.25
7 Paper Draft	0.75
8 Peer Review 2	0.25
9 Final Paper	0.75
10 Research presentation	0.5
Total:	100

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/%
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1 Research Methods	10
2 Sources Quiz	10
3 Integration Quiz	10
4 Critical Analysis	10
5 Introduction & Literature Review	10
6 Peer Review 1	5
7 Paper Draft	15
8 Peer Review 2	5
9 Final Paper	15
10 Research presentation	10
Total:	100

Required reading:

- Lunsford, A. (2021) *Let's talk: A pocket rhetoric*. W.W. Norton & Co. New York.
- American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.).
- Hacker, D., & Sommers, N. (2015). *A writer's reference* (8th 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.

Additional reading:

- Selected current newspaper and magazine articles posted by the instructor on My Courses.

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

- Student course evaluation
- Peer observation of lectures
- Assessment of the achievement of learning outcomes

YEAR 2 – COURSE DESCRIPTIONS

General Information

Course title:	ISTE-222 Applied Data Structures and Algorithms
Course leader:	Branko Mihaljevic
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

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
Total	6

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	60
Midterm Exam Theory	10
Midterm Exam Practical	10
Final Exam Theory	10
Final Exam Practical	10
Total:	100

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

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

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

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
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/%
Individual project	40
Final Presentation	10
Assignments	40
Video assignment	10
Total:	100

Required reading:

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

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

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 title:	Foundations of Sociology
Course leader:	Vanda Bazdan
Study programme:	HTM, WMC
Course status:	Obligatory
Year:	Second
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

An introduction to the way sociologists interpret social reality, including the elementary terms, foundational ideas, major insights, and research discoveries in the discipline. Included are topics such as statuses and roles, socialization, cultural variation, deviance, social stratification, social institutions, and social change. Fulfils a liberal arts core social/behavioural science requirement. Counts as a prerequisite for the sociology/anthropology concentration and minor, the international studies and urban communities studies majors, and as a prerequisite for the required cultures in globalization.

Course objectives:

- Develop critical awareness of the interactions among society, culture, science, and technology
- Foster understanding and appreciation of diverse social and cultural perspectives
- Foster understanding of local, national, international, and global forms of citizenship and community
- Develop critical awareness of interactions between society and the environment
- Foster development of the ability to reason critically and creatively

Conditions for enrolment in the course:

None

Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Compare main theoretical perspectives in sociology (tenets, research methods, studies conducted) and their implications in understanding individual development, cultural and social contexts and issues
- CLO2:** Synthesize data from various theoretical perspectives and research studies in interpretation of social phenomena
- CLO3:** Compose arguments, and anticipate and assess counterarguments, to support and defend their attitudes regarding current social issues in written format (discussion papers), and in competitive debates (in keeping with the academic standards)

Course content:

This course will introduce the student to the basic concepts in sociology, and to fundamental sociological approaches and methods. Sociology is interested in understanding social stability and social change. Social change, with all its conflicts and problems, has been the driving force in sociology. The course will examine the topic of social inequality, giving special attention to social stratification, racial-ethnic relations, and gender relations. It will cover the major institutions of society – family, the educational, religious, the political systems, the economy, and health care and medicine. We will explore the theme of social change through examination of collective behaviour.

Teaching delivery methods:

- Lectures
- Seminars
- Independent work
- Project work
- Multimedia

Student obligations:

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

Monitoring student work:

Activity	ECTS
Exam 1	1
Exam 2	1

Research paper	1
Presentation	0.5
Discussions (5)	0.5
Discussion papers	1
Total	5

Teaching time has been incorporated in time for assignments.

Assessment and evaluation of student work

Components of evaluation:

Component	Points/%
Exam 1	20
Exam 2	20
Research paper	20
Presentation	10
Discussions (5x2)	10
Discussion papers (5x4)	20
Total:	100

Required reading:

- Newman, D.M. (2020). *Sociology: Exploring the architecture of everyday life*. SAGE publications.
- Newman, D.M. (2018). *Sociology: Exploring the architecture of everyday life: Readings*. SAGE publications.

Additional reading:

- Excerpts from classics in sociology, as well as contemporary scholarly articles, available on myCourses.

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:	Networking Essentials for Developers
Course leader:	Alan Mutka
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
Total	5

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
Total:	100

Required reading:

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

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 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
Total:	100

Required reading:

- Hershberger, R., Navey-Davis, S. & Borrás Álvarez, G. (2016). *Plazas, Lugar de encuentros* (5th 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 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

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)

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:	Zrinka Friganović Sainj
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

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
- practicing 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 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:

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

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 superior*. 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 French I
Course leader:	Tea Kovačević
Study programme:	WMCIB
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
Total:	100

Required reading:

- Manley, J., Smith, S., McMinn, J., & Prévost, 8. (2011). *Horizons*. 6th edition.

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

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:	Domagoj Tolić
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

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: Build a group project within the context of software design principles and patterns.

CLO2: Implement software design principles & patterns within an iterative development approach.

CLO3: Develop a solution to a design problem using UML.

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
Total	6

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
Total:	100

Required reading:

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

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.
-

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 Marasovic
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

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.

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

Expected learning outcomes of the course:

A student will be able to:

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

CLO2: Build a website to consume JSON data from a RESTful web service.

CLO3: 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

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
Total	6

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
Total:	100

Required reading:

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

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:	ISTE-330 Database Connectivity and Access
Course leader:	Alan Mutka
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.

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.

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
Total	6

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
Total:	100

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

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

Course Description

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
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/%
Assignments	25
Midterm Exam	15
Final Exam	25
Individual Project	35
Total:	100

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

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
-

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:	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 more complex vocabulary to improve communication skills

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
Total:	100

Required reading:

- Hershberger, R., Navey-Davis, S. & Borrás Álvarez, G. (2016). *Plazas, Lugar de encuentros* (5th 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 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

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

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 more complex vocabulary to improve communication skills

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.

Additional reading:

- 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:	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 more complex vocabulary to improve communication skills

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 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:

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

Additional reading:

- Cozzarelli, J.M. (2020). *Sentieri*. Vista Higher Learning.
- Manella, C. (2005). *Si! L'italiano in mano. Manuale e corso pratico di italiano per stranieri. Livello elementare, intermedio e superior*. 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 French II
Course leader:	Tea Kovačević
Study programme:	WMC
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 more complex vocabulary to improve communication skills

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
Total:	100

Required reading:

- Manley, J., Smith, S., McMinn, J., & Prévost, 8. (2011). *Horizons*. 6th edition.

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

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:	Sara Stanić
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.

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:

Minimum 55 credits obtained

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 organization.

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

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
Total	12

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 3 – COURSE DESCRIPTIONS

General Information

Course title:	ISTE-341 Server Programming
Course leader:	Domagoj Tolić
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

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.

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: 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
Total	6

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
Total:	100

Required reading:

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

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.
- Burke, Bill. (2013). *RESTful java with JAX-RS 2.0* (2nd ed.). O'Reilly.
- 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 Marasovic
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

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 an agile software development methodology & appropriate tools.
 - CLO2:** Refactor the code to improve software design and performance with appropriate tools.
 - CLO3:** Build a software project ready for testing and deployment
-

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
Total	6

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
Total:	100

Required reading:

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

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.

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:	Rebecca Charry Roje
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

Course objectives:

- In this course, students will study literature, movements, and writers within their cultural contexts and in relation to modes of literary production and circulation. Students will hone their skills as attentive readers and will engage with literary analysis and cultural criticism. Students will gain a strong foundation for analyzing the ways literary language functions and exploring the interrelations among literature, culture, and history. In doing so, they will engage issues involving culture, identity, language, ethics, race, gender, class, and globalism, among many others.
-

Conditions for enrolment in the course:

Prerequisite: Writing Seminar UWRT150

Expected learning outcomes of the course:

A student will be able to:

CLO1: Analyse a variety of literary texts, cultural artefacts, and/or critical/analytical essays

CLO2: Connect literary and cultural artefacts to their social and cultural contexts

CLO3: Compose coherent literary analyses, creative essays, research papers, or multimedia presentations

Course content:

- Literary and poetic terms
- Literary and dramatic genres
- Comedy and Tragedy
- Poetic forms
- Introduction to Modernism
- Post modernism
- The Harlem Renaissance
- Contemporary short stories

Teaching delivery methods:

- Lectures
- Discussions
- Independent work
- Project work
- Multimedia

Student obligations:

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

Monitoring student work:

Activity ECTS

Component	ECTS
1. Poetry Responses	0.5
2. Poetry Test	0.75
3. Short story responses	0.5
4. Short Story test	0.75

5. Team presentation	0.75
6. Test on student stories	0.75
7. Creative essay	0.5
8. Student story responses	0.5
Total:	5

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/%
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1. Poetry Responses (2 unannounced)	10
2. Poetry Test	15
3. Short story responses (2 unannounced)	10
4. Short Story test	15
5. Team presentation	15
6. Test on student stories	15
7. Creative essay	10
8. Student story responses (2 unannounced)	10
Total:	100

Required reading:

- Saunders, G. (2018) Fox 8. Random House. New York
- Baldwin, J. (1957) Sonny's Blues.
- Woolf, V. (1921) A Haunted House.
- Hellmandollar, J. (n.d.) The Backwards Fall
- Bradbury, R. (1950) The Veldt.
- Gess, D. Trespasses (2016). Story Quarterly. Issue 53. Rutgers University. New Jersey.
- Selected poems by Walt Whitman, Emily Dickinson, Langston Hughes, E.E. Cummings, E.A. Robinson and others

Additional reading:

- Contemporary short stories selected by students

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

- Student course evaluation
- Peer 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

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

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 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 Oral Examination	0.4
Homework	0.4
Total	4

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 Oral Examination	10
Homework	10
Total:	100

Required reading:

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

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:	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 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 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 Oral Examination	0.4
Homework	0.4
Total	4

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 Oral Examination	10
Homework	10
Total:	100

Required reading:

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

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 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

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.

Conditions for enrolment in the course:

Completion of Beginning German I and Beginning German 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 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

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 Oral Examination	0.4
Homework	0.4
Total	4

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 Oral Examination	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.

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:	Intermediate Italian I
Course leader:	Zrinka Friganović Sain
Study programme:	NMD
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 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
Total	4

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.

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:	Global Economy and Grassroots
Course leader:	Vanda Bazdan
Study programme:	HTM, WMC, GBM
Course status:	Elective/Immersion
Year:	Third and Fourth
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

Economic globalization has given birth to global, grassroots social movements. This course examines how global economic integration is brought about through multilateral institutions, multinational corporations, outsourcing, trade agreements, international lending, and neoliberal reforms. We consider impacts (cultural, economic, and health) of these trends on employees, farmers, small businesses, consumers, and the environment in the developed and developing worlds (with special emphasis on Latin America). We examine beliefs, alternative visions, and strategies of grassroots movements responding to these challenges.

Course objectives:

- Examine key vectors of economic globalization
- Examine impacts (economic, environmental, social, and health) in different locales (with special emphasis on Latin America)
- Examine grassroots responses to perceived negative impacts, including the formation of social movements with alternative visions (alter-globalization)
- Foster development of the ability to reason critically and creatively

Conditions for enrolment in the course:

None

Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Explain key vectors of economic globalization, discriminating between historical, ethnographic, and theoretical perspectives on globalization and economy
 - CLO2:** Analyse scholarly (anthropology, sociology, and economy) texts, poetry or prose, and popular texts commenting on global economy, politics, and grassroots activities
 - CLO3:** Compose arguments, and anticipate and assess counterarguments, to support and defend their attitudes regarding current issues in written format and in competitive debates (in keeping with the academic standards)
-

Course content:

1. Outsourcing: Its Face Abroad
 - 1.1 Offshore Assembly Manufacture
 - 1.2 Free Trade Zones
2. Outsourcing: Impacts within the U.S.
3. Trade Liberalization: North American Free Trade Agreement
4. World Bank: infrastructural projects, dams and riparian systems
5. International Monetary Fund:
 - 5.1 Debt crisis: causes and examples (Mexico, Argentina, Jamaica)
 - 5.2 Structural Adjustment (prescriptions and consequences)
 - 5.3 Cross-conditionality
6. World Trade Organization: relevant rules and key rulings
 - 6.1 Environment: tariff escalation and natural resources, process and production methods
 - 6.2 Public Health: HIV/AIDS medications, baby formula and Gerber trademark in Guatemala, cigarette packaging
 - 6.3 Agriculture: competition through trade liberalization, patenting of life forms, genetically modified organisms, protection of agricultural subsidies, national emergency stores
7. Alterglobalization Movements
 - 7.1 Demonstrations in Seattle
 - 7.2 Anti-Sweatshop Activism
 - 7.3 Zapatista Movement in Mexico
 - 7.4 Confédération Paysanne and Via Campesina
 - 7.5 Global Social Forum
 - 7.6 Green Belt Movement
 - 7.7 Navdanya (India)

- 7.8 Recovered Factories movement in Argentina
 - 7.9 Landless Workers' Movement in Brazil
 - 7.10 Fair Trade
 - 7.11 Slow Food Movement
 - 7.12 Localist movements in the U.S.: community supported agriculture, farmers' markets, locavorism, alternative currencies
-

Teaching delivery methods:

- Lectures
 - Seminars
 - Independent work
 - Discussions
 - Multimedia
-

Student obligations:

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

Monitoring student work:

Activity	ECTS
Discussions	2.4
Exam 1	1.35
Exam 2	1.25
Total	5

Teaching time has been incorporated in time for assignments.

Assessment and evaluation of student work

Components of evaluation:

Component	Points/%
Exam 1	27
Exam 2	25

Discussions (12x4)	48
Total:	100

Required reading:

- Selected chapters and excerpts from the listed readings:
- Wallach, L. & Woodall, P. (2004). *Whose Trade Organization?* The New Press.
- Hira, R., & Hira, A. (2005). *Outsourcing America*. Amacom.
- Lappe, F. M. & Lappe, A. (2003). *Hope's edge*. TarcherPerigee.
- Pleyers, G. (2013). *Alter-Globalization*. Polity.
- Dudley, K. M. (1994). *The end of the line: Lost jobs, new lives in postindustrial America*. University of Chicago Press.
- Maeckelbergh, M. (2013). *The will of the many*. Pluto Press.
- Moberg, M. & Lyon, S. (2010). *Fair trade and social justice: Global ethnographies*. NYU Press.
- Thomas, J. (2000). *The battle in Seattle: The story behind and beyond the WTO demonstrations*. Fulcrum Publishing.
- Marcos, Subcomandante Insurgente. (2002). *Our word is our weapon: Selected writings*. Seven Stories Press.
- Barlow, M. and Clarke, T. (2001). *Global Showdown*. Stoddart Pub.
- Ross, A., ed. (1997). *No Sweat*. Verso Books.
- Stiglitz, J. (1994). *Globalization and its discontents*. W.W. Norton & Company.
- Stiglitz, J. (2017). *Globalization and its discontents revisited: Anti-globalization in the era of Trump*. W.W. Norton & Company.
- Hess, D. L. (2009). *Localist Movements in a Global Economy*. The MIT Press.

Additional reading:

- Excerpts from classics in anthropology, as well as more recent scholarly and popular articles, available on myCourses.

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

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
Total	6

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
Total:	100

Required reading:

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

Additional reading:

- Assigned readings
-

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:	Alan Mutka
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

Conditions for enrolment in the course:

ISTE-341

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

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
Total	6

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
Total:	100

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
-

Additional reading:

- Additional material distributed in class and/or via MyCourses
-

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 Dalmatian Coast
Course leader:	Staša Puškarić
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

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.

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.

Conditions for enrolment in the course:

None

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.

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 0.8**

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**

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 0.3

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

Presentation

ECTS 0.7

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.

Participation

ECTS 0.7

Final Exam

ECTS 1.5

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
Participation	15
Final Exam	30
Total:	100

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.

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

- Papers selected from the primary literature (updated annually)

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.

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:	Foundations of Moral Philosophy
Course leader:	Vanda Bazdan
Study programme:	WMC
Course status:	Obligatory
Year:	Third
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

This course is a survey of foundational, and normative, approaches to moral philosophy and their motivating moral questions. Topics will include virtue ethics, deontology, consequentialism, evolutionary foundations of morality, and other approaches. Some of the questions to be examined are: How is human nature related to morality? What are the grounds for moral obligations? Is there an ultimate moral principle? How do we reason about what to do? Can reason determine how we ought to live? What are moral judgments? Are there universal goods? What constitutes a morally worthwhile life? Can morality itself be challenged?

Course objectives:

- To help the student develop the habit of careful analysis and critical evaluation of beliefs.
- To help the student become aware of the importance of basic assumptions in his thinking and acting.
- To help the student become aware of some of the philosophical assumptions he ordinarily makes.
- To encourage the student to examine those assumptions critically considering the reasons or evidence that could be offered both for and against them.
- To make the student aware of alternative assumptions he might make together with reasons for choosing or rejecting them.
- To encourage the student to develop a more reasonable and coherent view of himself or herself in relation to others and to the universe in which he or she lives.
- To acquaint the student with some of the major philosophers and various ethical positions.
- To encourage the student to critically engage various theories in moral philosophy and apply them in consideration of everyday experiences.

Conditions for enrolment in the course:

None

Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Interpret different ethical theories and tenets and apply these in analysis of moral problems/moral issues
 - CLO2:** Compose and evaluate arguments, and anticipate counterarguments, to support and defend their attitudes regarding moral issues in written format (discussion or research papers), and in competitive debates (in keeping with the academic standards)
 - CLO3:** Analyse philosophical and popular texts (appropriate use of concepts and close/critical readings skills assumed)
 - CLO4:** Compose analytical essays, subject being a scholarly paper or a book segment dealing with a specific ethical issue or outlining a relevant philosophical perspective (ability to summarize and assess arguments, proper word choice, structure sentences, and apply grammar and mechanics in keeping with academic standards assumed)
-

Course content:

Introduction to morality
Why be moral?
Ethics and religion
Ethics and ethical reasoning
Virtue Ethics
Deontology
Consequentialism
Contractarianism
Some particular moral issues

Teaching delivery methods:

- Lectures
- Seminars
- Independent work

- Discussions
- Multimedia

Student obligations:

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

Monitoring student work:

Activity	ECTS
Discussions	1
Exam 1	1
Exam 2	1
Essay 1	1
Essay 2	1
Total	5

Teaching time has been incorporated in time for assignments.

Assessment and evaluation of student work

Components of evaluation:

Component	Points/%
Exam 1	20
Exam 2	20
Essay 1	20
Essay 2	20
Discussions	20
Total:	100

Required reading:

- Shafer-Landau, R. (2017). *The ethical life*. Oxford University Press.

- Graham, G. (2010). *Theories of Ethics*. Routledge.
- Sidgwick, H. (1981). *The Methods of Ethics*. Hackett Publishing Company.
- Shafer-Landau, R. (2020). *Fundamentals of Ethics*. Oxford University Press.

Additional reading:

- Additional excerpts from classics in philosophy, as well as more recent scholarly and popular articles, available on myCourses.

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

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

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 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 Oral Examination	0.4
Homework	0.4
Total	4

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 Oral Examination	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.

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:	Intermediate French II
Course leader:	Tea Kovačević
Study programme:	WMC
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 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

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 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 Oral Examination	0.4
Homework	0.4
Total	4

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 Oral Examination	10
Homework	10
Total:	100

Required reading:

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

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 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

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

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 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 Oral Examination	0.4
Homework	0.4
Total	4

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 Oral Examination	10
Homework	10
Total:	100

Required reading:

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

Additional reading:

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

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: Web and Mobile Computing DU

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 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

Expected learning outcomes of the course:

A student will be able to:

1. Create formal and informal texts in written form to communicate effectively in formal and informal settings
 2. Criticize different cultural aspects by formulating a standpoint on various topic
 3. Design a presentation on personal or professional topics
 4. 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 Oral Examination	0.4
Homework	0.4
Total	4

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/%
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Quiz 1	12
Quiz 2	12
Quiz 3	12
Oral In-Class Examinations	16
Written Assignments	28
Final Oral Examination	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.
-

skills and competencies:

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

General Information

Course title:	Social and Cultural Theory
Course leader:	Vanda Bazdan
Study programme:	HTM, WMC
Course status:	Elective/Immersion
Year:	Third and Fourth
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

This course explores influential classical and contemporary theories regarding society and culture. Students will assess the utility of different theories in addressing key enduring questions regarding human behaviour, the organization of society, the nature of culture, the relationship between the individual and society, social control and social conflict, social groups and social hierarchy, the operation of power, cultural and social change, and the interplay between the global and the local. Theories will be marshalled to shed light on contemporary social and cultural phenomena and problems such as crime, violence, exploitation, modernity, and globalization. Cross-listed with SOCI-301.

Course objectives:

- Reflect on the major questions concerning human societies and cultures raised and addressed by sociology and anthropology
- Reflect on influential theories in sociology and anthropology
- Apply influential sociological and anthropological theories to major contemporary social issues
- Understand the common roots, mutual influences, and key points of departure between sociological and anthropological theories.

Conditions for enrolment in the course:

None

Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Compare different sociological and anthropological theories (assess the common roots, mutual influences, and key points of departure between sociological and anthropological theories), and qualitative and quantitative methods in the study of social and cultural phenomena
- CLO2:** Debate social phenomena through application and re-evaluation of key sociological and anthropological theories
- CLO3:** Compose analytical essays (ability to summarize and assess arguments, proper word choice, structure sentences, and apply grammar and mechanics in keeping with academic standards assumed)
- CLO4:** Compose arguments, and anticipate and assess counterarguments, to support and defend their attitudes regarding current social issues in written format (discussion papers), and in competitive debates (in keeping with the academic standards)

Course content:

1. What is culture?
2. What is society?
3. What accounts for cultural and social differences?
4. What are the different ways in which humans learn culture?
5. How are societies organized?
6. How is culture organized?
7. How do societies maintain order, resolve conflict, and yet sometimes perpetuate conflict and inflict violence?
8. How do prevailing economic arrangements of production and distribution affect society and vice-versa?
9. To what extent do society and culture influence the self?
10. If human decisions are influenced by social structure and culture, how much agency do individuals have?
11. If human decisions are influenced by social structure and culture, how does cultural change occur?
12. How does culture reinforce social hierarchies?
13. How have political and economic forces (such as trade, colonialism, capitalism, and globalization) shaped and been shaped by local cultures?
14. Is the nature of culture fundamentally transformed under late capitalism?

Teaching delivery methods:

- Lectures
- Seminars
- Independent work
- Discussions
- Multimedia

Student obligations:

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

Monitoring student work:

Activity	ECTS
Discussions	1.8
Exam 1	1.2
Exam 2	1
Essay	1
Total	5

Teaching time has been incorporated in time for assignments.

Assessment and evaluation of student work**Components of evaluation:**

Component	Points/%
Exam 1	24
Exam 2	20
Essay	20
Discussions (12x4)	36
Total:	100

Required reading:

- Selected chapters and excerpts from the listed readings (list is not exclusive):
Tucker, R. C., ed., (1978). *The Marx/Engels Reader*. W.W. Norton&Company.
Weber, M. (1978). *Economy and Society: An Outline of Interpretive Sociology*. University of California Press.
Weber, M.(2002). *The Protestant Ethic and the Spirit of Capitalism*. Penguin Classics.
Mills, C. W. (2000). *The Sociological Imagination*. Oxford University Press.
Mills, C. W. (2000). *The Power Elite*. Oxford University Press.
Durkheim, É. (2014). *The Division of Labor in Society*. Free Press.
Durkheim, É. (1997). *Suicide*. Free Press.
Durkheim, É. (2008). *The Elementary Forms of Religious Life*. Oxford University Press.
Bourdieu, P. (1977). *Outline of a Theory of Practice*. Cambridge University Press.
Foucault, M. and Rabinow, P. eds.(1984). *The Foucault Reader*. Pantheon.
Boas, F. (2018). *Race, Language, and Culture*. Reading Essentials.
Malinowski, B. (2014). *Magic, Science, and Religion and Other Essays*. McCormick Press.
Geertz, C. (2017). *The Interpretation of Cultures*. Basic Books.
Lemert, C., and Branaman, A. eds. (1997). *The Goffman Reader*. Wiley-Blackwell.
Wolf, E.R. (2010). *Europe and the People without History*. University of California Press.
Clifford, J. (1988). *The Predicament of Culture*. Harvard University Press.
Giddens, A. (1986). *The Constitution of Society*. University of California Press.
Giddens, A. (1973). *Capitalism and Modern Social Theory*. Cambridge University Press
Said, E. M. (1979). *Orientalism*. Vintage.
Marcuse, H. (1991). *One-Dimensional Man*. Beacon Press.
Harvey, D. (1991). *The Condition of Postmodernity*. Wiley-Blackwell.
Mead, G. H. (2015). *Mind, Self and Society*: University of Chicago Press.
Merton, R. (2017). *Social Theory and Social Structure*. Rawat.
Berger, P. and Luckmann, T. (1967). *The Social Construction of Reality*. Anchor.

Additional reading:

- Additional xcerpts from classics in anthropology, as well as more recent scholarly and popular articles, available on myCourses.

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:	Sara Stanić
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. co-op.

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
Total	12

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:	Alan Mutka
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.

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:

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

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
Total	6

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

Total:	100
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Required reading:

- Not required

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.

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

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.

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

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
Total	6

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
Total:	100

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.

Additional reading:

- Assigned readings

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:	Global Economy and Grassroots
Course leader:	Vanda Bazdan
Study programme:	HTM, WMC, GBM
Course status:	Elective/Immersion
Year:	Third and Fourth
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

Economic globalization has given birth to global, grassroots social movements. This course examines how global economic integration is brought about through multilateral institutions, multinational corporations, outsourcing, trade agreements, international lending, and neoliberal reforms. We consider impacts (cultural, economic, and health) of these trends on employees, farmers, small businesses, consumers, and the environment in the developed and developing worlds (with special emphasis on Latin America). We examine beliefs, alternative visions, and strategies of grassroots movements responding to these challenges.

Course objectives:

- Examine key vectors of economic globalization
- Examine impacts (economic, environmental, social, and health) in different locales (with special emphasis on Latin America)
- Examine grassroots responses to perceived negative impacts, including the formation of social movements with alternative visions (alter-globalization)
- Foster development of the ability to reason critically and creatively

Conditions for enrolment in the course:

None

Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Explain key vectors of economic globalization, discriminating between historical, ethnographic, and theoretical perspectives on globalization and economy
 - CLO2:** Analyse scholarly (anthropology, sociology, and economy) texts, poetry or prose, and popular texts commenting on global economy, politics, and grassroots activities
 - CLO3:** Compose arguments, and anticipate and assess counterarguments, to support and defend their attitudes regarding current issues in written format and in competitive debates (in keeping with the academic standards)
-

Course content:

1. Outsourcing: Its Face Abroad
 - 1.1 Offshore Assembly Manufacture
 - 1.2 Free Trade Zones
2. Outsourcing: Impacts within the U.S.
3. Trade Liberalization: North American Free Trade Agreement
4. World Bank: infrastructural projects, dams and riparian systems
5. International Monetary Fund:
 - 5.1 Debt crisis: causes and examples (Mexico, Argentina, Jamaica)
 - 5.2 Structural Adjustment (prescriptions and consequences)
 - 5.3 Cross-conditionality
6. World Trade Organization: relevant rules and key rulings
 - 6.1 Environment: tariff escalation and natural resources, process and production methods
 - 6.2 Public Health: HIV/AIDS medications, baby formula and Gerber trademark in Guatemala, cigarette packaging
 - 6.3 Agriculture: competition through trade liberalization, patenting of life forms, genetically modified organisms, protection of agricultural subsidies, national emergency stores
7. Alterglobalization Movements
 - 7.1 Demonstrations in Seattle
 - 7.2 Anti-Sweatshop Activism
 - 7.3 Zapatista Movement in Mexico
 - 7.4 Confédération Paysanne and Via Campesina
 - 7.5 Global Social Forum
 - 7.6 Green Belt Movement
 - 7.7 Navdanya (India)

- 7.8 Recovered Factories movement in Argentina
- 7.9 Landless Workers' Movement in Brazil
- 7.10 Fair Trade
- 7.11 Slow Food Movement
- 7.12 Localist movements in the U.S.: community supported agriculture, farmers' markets, locavorism, alternative currencies

Teaching delivery methods:

- Lectures
- Seminars
- Independent work
- Discussions
- Multimedia

Student obligations:

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

Monitoring student work:

Activity	ECTS
Discussions	2.4
Exam 1	1.35
Exam 2	1.25
Total	5

Teaching time has been incorporated in time for assignments.

Assessment and evaluation of student work

Components of evaluation:

Component	Points/%
Exam 1	27
Exam 2	25

Discussions (12x4)	48
Total:	100

Required reading:

- Selected chapters and excerpts from the listed readings:
- Wallach, L. & Woodall, P. (2004). *Whose Trade Organization?* The New Press.
- Hira, R., & Hira, A. (2005). *Outsourcing America*. Amacom.
- Lappe, F. M. & Lappe, A. (2003). *Hope's edge*. TarcherPerigee.
- Pleyers, G. (2013). *Alter-Globalization*. Polity.
- Dudley, K. M. (1994). *The end of the line: Lost jobs, new lives in postindustrial America*. University of Chicago Press.
- Maeckelbergh, M. (2013). *The will of the many*. Pluto Press.
- Moberg, M. & Lyon, S. (2010). *Fair trade and social justice: Global ethnographies*. NYU Press.
- Thomas, J. (2000). *The battle in Seattle: The story behind and beyond the WTO demonstrations*. Fulcrum Publishing.
- Marcos, Subcomandante Insurgente. (2002). *Our word is our weapon: Selected writings*. Seven Stories Press.
- Barlow, M. and Clarke, T. (2001). *Global Showdown*. Stoddart Pub.
- Ross, A., ed. (1997). *No Sweat*. Verso Books.
- Stiglitz, J. (1994). *Globalization and its discontents*. W.W. Norton & Company.
- Stiglitz, J. (2017). *Globalization and its discontents revisited: Anti-globalization in the era of Trump*. W.W. Norton & Company.
- Hess, D. L. (2009). *Localist Movements in a Global Economy*. The MIT Press.

Additional reading:

- Excerpts from classics in anthropology, as well as more recent scholarly and popular articles, available on myCourses.

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:	Web and Mobile Computing
Course status:	Obligatory
Year:	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

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.

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	1.25
Assignment 2	1.25
Participation and discussion	2.50
Total	5

Assessment and evaluation of student work

Components of evaluation:

Component	Points/%
Assignment 1	25
Assignment 2	25
Participation and discussion	50
Total:	100

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.

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

- Papers selected from the primary literature (RIT Wallace library)

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.

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:	East Asian Philosophy
Study programme:	GBM-IB/HTM/WMC
Course status:	Elective
Year:	Fourth
Number of ECTS credits:	5
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

- This course is an introduction to the origin and development of the philosophical traditions of primarily China and Japan through a consideration of selected thinkers, schools, and classic texts of Daoism, Confucianism, Buddhism, and Zen. Questions of metaphysics, epistemology, and ethics are emphasized with reference to the nature of reality and the person, social harmony and self-realization, causality, right action, and enlightenment. Comparisons may also be made with Western philosophers, both contemporary and classical.

Course objectives:

1. Define the basic terms and concepts of Daoism, Confucianism, Buddhism, and Zen;
2. Understand the significance of these basic terms and concepts within their specific traditions and cultural contexts;
3. Understand and put into perspective the different forms of religious and spiritual traditions existing today in East Asia and its spheres of influence;
4. Collect, summarise, and report information on the various traditions of East Asia discussed in this course;
5. Identify and discuss issues related to the study of Daoism, Confucianism, Buddhism, and Zen, their history, their influences on social values, ethics, etc.
6. Develop and use the academic practices for critical reading, information management and synthesis of source materials.
7. Make use of instructional feedback concerning strengths and weaknesses of their critical thinking skills and suggested strategies for improvement in their revisions.

Conditions for enrolment in the course:

None

Expected learning outcomes of the course:

A student will be able to:

- **LO1:** Investigate the significance of the basic terms and concepts of the philosophical and religious traditions of East Asia.
 - **LO2:** Discuss the various issues related to the philosophical and religious traditions of East Asia.
 - **LO3:** Debate possible solutions to those issues taking into consideration their implications in modern settings.
-

Course content:

1. Philosophical and religious traditions of China
 2. Philosophical and religious traditions of Japan
-

Teaching delivery methods:

- Lectures and multimedia presentations
 - Class discussions
-

Student obligations:

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

Components of evaluation:

Component	Points/%	ECTS
What-is-going-on short presentations (4@5%)	20	1
Written assignments (3@10%)	30	1.50
Learning cell assignments 2@ (5% + 10%)	30	1.50
Final presentation	20	1
Total:	100	5

Required reading

- Davis Winston. (1992). *Japanese Religion and Society: Paradigms of Structure and Change*, Albany, New York: State University of New York Press.
- Earhart, Byron H. (1982). *Japanese Religion: Unity and Diversity*, Third Edition, Belmont:Wadsworth Publishing Company.
- Fairbank, John, Edwin O. Reischauer, and Albert Craig (1978). *East Asia: Tradition & Transformation*, Boston: Houghton Mifflin Company.
- Kitagawa, Joseph M., (ed.). (1989). *The Religious Traditions of Asia: Religion, History, and Culture, Selections from The Encyclopedia of Religion*, New York: Macmillian Publishing Company.
- Sharma, Arvind, (ed.). (1993). *Our Religions: The Seven World Religions Introduced by Preeminent Scholars from each Traditions*, New York: Harper San Francisco.
- Thompson, Laurence G. (1996)- *Chinese Religion: An Introduction*, Fifth Edition, Belmont: Wadsworth Publishing Company.

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:	Alan Mutka
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.

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

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:

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

Course content:

- Programming environments
 - Mobile HCI
 - Standards and interface conventions
 - Mobile media
 - Mobile data acquisition
 - Mobile data storage
 - Security, privacy, and ethics
-

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	2.4
Final Project	2.4
Final Exam	1.2
Total	6

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	40
Final Project	40
Final Exam	20
Total:	100

Required reading:

- Not required

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.

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

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

Conditions for enrolment in the course:

Students must have successfully completed the first course (ISTE-500) in this two-course sequence.

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

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

Teaching delivery methods:

- Lectures
- Independent work

- Project work

Student obligations:

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

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
Total	6

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 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
Total:	100

Required reading:

- None required

Additional reading:

- Assigned readings

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:	6
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:** Evaluate various programming techniques for data retrieval, storage, and management on databases
 - CLO3:** Create applications that maintain data integrity and control user access in multi-user environments
 - CLO4:** Select appropriate object-relational mapping frameworks
 - CLO5:** 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	1.5
Midterm Exam	1.2
Final Project	2.10
Final Exam	1.20
Total	6

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	25
Midterm Exam	20
Final Project	35
Final Exam	20
Total:	100

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

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

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:	6
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

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
-

Conditions for enrolment in the course:

ISTAT-145 OR MATH-251 and GCIS-124 OR ISTE-121

Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Formulate questions for subsequent analytical problem solving
 - CLO2:** Identify and discuss potential ethical concerns of stakeholders
 - CLO3:** Explain the key ideas underlying data analytics and mining
 - CLO4:** Apply analytical tools to data collections
 - CLO5:** Interpret the results of applying analytical and exploratory methods
-

Course content:

- Introduction to Data Mining
- Data / Exploring Data
- Classification
- Association Rules
- Cluster Analysis
- Anomaly Detection

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
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.

Assessment and evaluation of student work

Components of evaluation:

Component	Points/%
Midterm Exam	15
Final Exam	15
Homework	20
Laboratory	10
Project	40
Total:	100

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

Additional reading:

-

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:	Global Islam
Study program:	HTM/WMC
Course status:	Elective
Year:	Fourth
Number of ECTS credits:	5
Teaching hours (L+S+E):	45 (3 + 0 + 0)

Course Description

- This course explores the historical context of the Muslim diaspora, including the influences of colonialism, the spread of Islam, and European economic policies. The challenges faced by Muslims as a religious minority and how these challenges are overcome are also explored. Finally, claims and theories regarding the perceived incompatibility of Islam and the Western world are evaluated. Upon completion of the course, students will be able to analyze regional and cultural diversity in societies, as well as recognize the dynamic relationship between globalization, political interests, local traditions, and cultural change. The instructor uses an active learning approach in teaching the course.

Course objectives:

1. To explore the frequent public portrayal of a dichotomy between Islam and “The West” and its implications
2. To understand the core tenets of Islamic belief and the range of ways of being Muslim from a cross-cultural perspective
3. To gain familiarity with the past and present of Muslims in Europe, the Americas, the Middle East, Africa, and Asia
4. To employ a critical assessment toward theories that imply incompatibility between Islam and contemporary secular society
5. To examine crucial issues affecting Muslims living in non-Muslim majority countries

Conditions for enrolment in the course:

None

Expected learning outcomes of the course:

A student will be able to:

- LO1:** Investigate the dichotomy between Islam and the West and the implications that arise from it.
- LO2:** Critically evaluate theories that imply incompatibility between Islam and contemporary secular societies.
- LO3:** Assess the key challenges of Muslims in non-Muslim countries.

Course content:

This course examines the spread of Islam beyond its origins in the Middle East, and the cultural and social clashes, but also the mutual adjustments that have followed. This course explores core tenets of Islam, but also how its practices and beliefs are altered as practitioners in different countries alternately adopt, co-opt, manage, react to, and reject elements in accordance with the meaningful social, cultural, and political lives they build for themselves. The compatibility of Islam with Western society is often debated in contemporary public discourse. This debate is typically marked by an assumption that Islamic beliefs clash with Western secular democratic ideals, an assumption which results in tensions over mosque building, headscarves, and other public signs of Islamic faith. We will explore the diverse ways of being Muslim from a cross-cultural perspective and the sometimes-challenging negotiation of fulfilling these religious tenets while living in Muslim minority places.

Teaching delivery methods:

- Lectures and multimedia presentations
- Class discussions

Student obligations:

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

Components of evaluation:

Component	Points/%	ECTS
What-in-going-on short presentations (3@5%)	15	.75
Reading assignment and Essay	15	.75

Learning cell assignments (2@15%)	30	1.5
Midterm presentation	20	1
Final presentation	20	1
Total:	100	5

Required reading

The material will be supplied by the instructor.

Additional reading

- Adams, Charles J. (1984). Islam and Christianity: The Opposition of Similarities. *Medieval Studies*, (6), 287–306.
- Cantwell Smith, Wilfred. (1962). *Muslims. The Faith of Other Men*. CBC Publications.
- Cantwell Smith, Wilfred. (1993). *What is Scripture? A Comparative Approach*. Fortress Press.
- Cook, Michael. (2000). *The Koran: A Very Short Introduction*. Oxford University Press.
- Denny, M. Frederick. (1987) *Islam*. HarperSanFrancisco.
- Embree, Ainslie T. (1988). *Sources of Indian Tradition: From the Beginning to 1800*. Columbia University Press.
- Foy, Whitfield (Ed.). (1988). *The Religious Quest: A Reader*. The Open University Press and Routledge.
- Hitti, K. Philip. (1964). *History of the Arabs*. Macmillan & Co Ltd.
- Kessler, Gary E. (2000). *Ways of Being Religious*. Mayfield Publishing Company.
- Küng, Hans. (1986). Christianity and the World Religions: Paths to Dialogue with Islam, Hinduism, and Buddhism. Doubleday & Company, Inc.
- Molloy, Michael. (1999). *Experiencing the World's Religions: Tradition, Challenge, and Change*. Mayfield Publishing Company.
- Smith, Ninian. (1984). *The Religious Experience of Mankind*. Charles Scribner's Sons.
- *The Holy Qur'an*. (1988). S. V. Mir Ahmed Ali. Tahrike Tarsile Qur'an, Inc.

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

