

RIT CROATIA PROGRAM OUTLINE

PROGRAM TITLE: BACHELOR OF SCIENCE (B.S.) IN CYBERSECURITY

TYPE OF PROGRAM: Undergraduate professional program

DURATION OF PROGRAM: 4 years /8 semesters

TOTAL NUMBER OF ECTS: 240

SCIENTIFIC AREA: Technical Sciences

SCIENTIFIC FIELD: Computing

EFFECTIVE FOR: Students enrolled starting from AY 2026/27

1. ENROLLMENT CRITERIA

Enrollment in the study program can be offered to candidates who have completed an appropriate secondary education program lasting at least four years and have passed the Croatian state exam. A person who has completed a relevant short vocational program may enroll in a professional undergraduate study. A person who completed an appropriate secondary education program lasting at least four years in the Republic of Croatia before 2010, without having passed the state exam, or a person who has completed 12 years of equivalent education abroad, may enroll in a university or professional undergraduate study,, in accordance with the conditions prescribed by the general act of the higher education institution.

For candidates who are required to take the state exam, a B level in mathematics and English is required. In addition, candidates must pass additional assessments:

- Essay
- Motivational interview

Scoring:

Mandatory part of the state exam

Subject	Level	Weighting
Croatian	B	0%
Mathematics	B	25%
English	B	35%

Additional assessments of specific knowledge, skills, and abilities

Assessment	Mandatory	Weighting
Motivational essay	YES	10%
Motivational interview	YES	30%

Candidates who completed secondary education in the Republic of Croatia before 2010 apply through the website www.croatia.rit.edu, submit copies of their high school certificates and final diploma, and undergo additional assessments: motivational interview, essay,

Transfer students from other higher education institutions also apply through the website www.croatia.rit.edu, submit their high school diploma and transcripts from their previously enrolled study program. They also undergo additional assessments: motivational interview, and essay.

Candidates who completed secondary education outside the Republic of Croatia must go through the process of recognition of foreign educational qualifications as part of the central application procedure.

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

An undergraduate student must maintain a cumulative and term Grade Point Average (GPA) of 2.00 or above at RIT Croatia in order to remain in good academic standing. RIT Croatia has set standards to help students maintain satisfactory academic performance, and serve to identify, warn, and provide timely intervention to students experiencing academic difficulty.

All probation and academic suspension actions are taken at the end of the fall, spring and summer terms. Students who attempt fewer than 9 credits in a term, and earn a term GPA less than a 2.0, but whose cumulative GPA is 2.0 or higher may be subject to academic action at the discretion of the college.

Probation refers to the academic action taken when a student is not in good academic standing. A student placed on probation is expected to sufficiently raise their GPA so as to return to good academic standing in the succeeding term. Students placed on probation will be required to complete an academic success plan. Without consultation with their advisor and written permission from the dean of the college, students on probation may enroll in no more than 16 credits. In some circumstances, a student will also be required to satisfy specific conditions required by the home program. Failure to meet the terms of probation may result in suspension. A student can be placed on probation no more than two terms during a given undergraduate degree level (i.e. bachelor) at RIT Croatia. Students who have had two academic probations and do not meet the criteria for good academic standing will be placed on academic suspension.

Academic Suspension refers to the academic action taken when a student is not permitted to enroll in courses at RIT Croatia for minimum of one term. Students who qualify for academic suspension at the end of a spring term will be placed on academic suspension for the following summer and fall terms. An appeal form can be used by a student to appeal an academic suspension decision.

Deferred Suspension refers to the academic action taken when a student appeals academic suspension and the appeal is granted. Students placed on deferred suspension will have one term to return to good academic standing and will be required to complete an academic success plan with their home program. A student on deferred suspension, enrolled in summer term, and taking 12 or more credits will be subject to this academic action policy and subsequent academic success plan.

Academic Success Plan is an agreement between a student and the student's academic program designed to facilitate success in the program. Students should consult with their academic program to determine the appropriate number of credits per term. Policy statements

- i. Any degree-seeking undergraduate student whose term or cumulative grade point average falls below a 2.00 (C average) will be placed on probation.

- ii. Students placed on probation may enroll in no more than 16 credits during the probation period and are required to complete an academic success plan with their home/primary program. Students in consultation with their faculty and/or professional academic advisor may appeal to the dean of the college for permission to take more than 16 credits while on probation.
- iii. A student can be placed on probation no more than two terms during a given undergraduate degree level (i.e. bachelor) at RIT Croatia. Students who have had two academic probations and do not meet the criteria for good academic standing will be placed on academic suspension.
- iv. Any student who has been placed on probation after having been removed from probation will be granted one term to be removed from probation before academic suspension from RIT Croatia.
- v. Any student whose term grade point average falls below 1.00 is not eligible for probation and will be placed on academic suspension through the upcoming fall or spring term, at the minimum.
- vi. Students who have been readmitted to RIT Croatia after an academic suspension will have up to two terms to return to good academic standing, and their status will be "pending action." Students who fail to return to good academic standing in two terms will be placed on academic suspension.
- vii. A student on academic suspension cannot enroll in any credit or non-credit course at RIT Croatia while on academic suspension.
- viii. Students on academic suspension may appeal an academic suspension decision to the Ombudsperson. If the appeal is granted, the student will be placed on deferred suspension for one term.
- ix. Decisions regarding deferred suspension require dean (or designee) approval. For programs housed outside the college structure, the approval of the academic unit in which the enrollment is requested is required.
- x. Students placed on deferred suspension will have one term to return to good academic standing and will be required to complete an academic success plan with their home department.
- xi. Academic suspension refers to the academic action taken when a student is not permitted to enroll in courses at RIT for a minimum of one term. A student on academic suspension will be excluded from classes, university housing, and all other university activities during the period of academic suspension.
- xii. Students on academic suspension may be required to satisfy specific academic requirements imposed by the home program in order to be considered for readmission to their program.

xiii. Students on academic suspension may be admitted to another program if it is approved by the dean (or designee) of the college in which enrollment is requested. Such students will be placed on deferred suspension and required to complete an academic success plan with the new program. For programs housed outside the college structure, the approval of the academic program in which the enrollment is requested is required.

xiv. Readmitted students will be required to complete an academic success plan and will have up to two terms to return to good academic standing. After two terms, students who do not maintain both cumulative and term GPA of 2.0 or above will be placed on academic suspension.

3. TRANSFER PROCEDURE

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

4. GRADUATION REQUIREMENT

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

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

Graduation with Honors

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

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

5. DEGREES UPON COMPLETION OF THE STUDIES

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

Upon successful completion of the four-year program in Web and Mobile Computing students receive a Bachelor of Science (B.S.) degree in Cybersecurity. Studies at RIT Croatia are also accredited by the Croatian Ministry of Science, Education and Sports and

meet the requirements of the Bologna Agreement. As a result, all students completing the four-year IT program will receive the degree title of prvostupnik/prvostupnica (baccalaureus/baccalaurea) inženjer/inženjerka kibernetičke sigurnosti.

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

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

Hospitality and Tourism Management

Web and Mobile Computing

International Business

7. PROGRAM LEARNING OUTCOMES

WMC1	Analyze security issues by applying cybersecurity principles and practices.
WMC2	Apply cybersecurity knowledge and critical thinking skills to manage security risks and compliance with security standards.
WMC3	Design secure solutions by employing cybersecurity principles and incorporating interdisciplinary perspectives including business, ethics, policy, and law.
WMC4	Develop contemporary software solutions for common cybersecurity challenges using current and emerging technologies.
WMC5	Assess business, technical, and ethical considerations that arise in the cybersecurity field.
WMC6	Collaborate on multidisciplinary professional projects in the cybersecurity field.
WMC7	Produce comprehensive technical documentation and professional presentations in the cybersecurity field.
WMC8	Communicate field-specific information in written and oral form using a standard English variety.
WMC9	Critically evaluate text and other media in a specific field.
WMC10	Reevaluate existing principles and practices in a specific field.
WMC11	Manage one's professional development and engage in lifelong learning activities pertaining to the field.
WMC12	Apply scientific principles in solving contemporary issues in a specific field.

8. LIST OF COURSES

FALL SEMESTER 2261				SPRING SEMESTER 2265			
Course No.	Course Name	Credits	ECTS	Course No.	Course Name	Credits	ECTS
YEAR 1				YEAR 1			
GCIS-123	Software Development and Problem Solving I	4	6	GCIS-124	Software Development and Problem Solving II	4	6
CSEC-140	Introduction to Cybersecurity	3	6	NSSA-241	Introduction to Routing and Switching	3	6
MATH-181	Project based Calculus I	4	5	MATH-182	Project-based Calculus II	4	6
PSYC-101	Introduction to Psychology	3	5	MATH-190	Discrete Mathematics for Computing	3	5
UWRT-100	Critical Reading and Writing	3	5	UWRT-150	Writing Seminar	3	5
YOPS-010	RIT 365: RIT Connections	0	0				

YEAR 1-4 – COURSES DESCRIPTIONS

General Information

Course title:	Software Development and Problem Solving I
Course leader:	Alan Mutka
Study programme:	Cybersecurity
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

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
- Mentorski rad
- 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

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:	Introduction to Cybersecurity
Course leader:	Branko Mihaljević
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	First
ECTS points:	5
Teaching hours (L+S+E):	45 (30+0+15)

Course Description

This course introduces fundamental cybersecurity concepts. The course teaches students to think about information systems with an adversarial mindset, evaluate risk to information systems, and introduce controls that can be implemented to reduce that risk. Topics will include authentication systems, data security and encryption, risk management and security regulatory frameworks, networking and system security, application security, organizational and human security considerations, and societal implications of cybersecurity issues. These topics will be discussed at an introductory level with a focus on applied learning through hands-on virtual lab exercises. Students will also be introduced to traditional and generative AI tools used in professional practice for threat analysis, security automation, and defensive tooling.

Course objectives:

- Understand fundamental cybersecurity concepts and develop an adversarial mindset to evaluate risks to information systems.
- Analyze and implement controls to reduce risks in information systems, including authentication, data security, and encryption.
- Explore risk management strategies, security regulatory frameworks, and their application to protect information systems.
- Examine networking, system security, and application security principles through practical, hands-on virtual lab exercises.
- Assess organizational, human, and societal implications of cybersecurity, including ethical considerations and security impacts.

Conditions for enrolment in the course:

None

Expected learning outcomes of the course:

A student will be able to:

- L01:** Evaluate cybersecurity concepts application in an information system to assess security risks and recommend security improvements.
- L02:** Analyze application of cryptographic principles for authentication and encryption to ensure confidentiality and integrity of sensitive data at rest and in transit.
- L03:** Assess non-technical cybersecurity challenges that could impact the security of an organization or system.
- L04:** Debate ethical considerations in cybersecurity and their impact on the security of society.

Course content:

- First Principles in Cybersecurity
 - Confidentiality, Integrity, and Availability
 - Threats, Vulnerabilities, and Types of Attacks
 - Basic concepts in threat modeling
 - Classes of Security Controls
 - Defense in Depth
- Identification and Authentication
 - Identification mechanisms
 - Authentication mechanisms
 - Multi-factor authentication
 - Mutual authentication
 - Single-sign on
- Authorization, Access Control, and Accountability
 - Users and groups
 - User account management
 - Access control models (DAC, MAC, role-based, rule-based)
 - Principle of least privilege
 - Separation of duties
 - Non-repudiation
 - Monitoring, logging, and auditing
- Data Security and Basic Cryptography
 - Symmetric and asymmetric cryptography
 - Data integrity
 - Public key infrastructure and trust anchors
 - Cryptography in authentication protocols
 - High-level overview of cryptographic standards (e.g. FIPS)
 - High-level discussion of cryptographic attacks
- Security Risk Analysis
 - Formal definition of risk
 - Risk mitigation strategies
 - High-level risk assessment procedures

- Common risk management frameworks
- Compliance, Laws, Regulation
 - Types of compliance and liability
 - Overview of common compliance frameworks
 - Legal issues in information security
 - Privacy and privacy laws
- Networking and Network Security
 - TCP/IP and OSI Models
 - Basic networking equipment and functionality
 - Packet captures and traffic analysis
 - Network firewalls
 - Network address translation, segmentation, and isolation as security controls
 - Broad classes of adversarial behavior and network monitoring
 - Basic wireless security concepts
- System Security
 - Virtualization and system isolation
 - Minimizing system software and attack surfaces
 - Types of malware and their effects on systems
 - Intrusion detection software and techniques
- Software Security
 - Software bugs and vulnerabilities
 - Security requirements analysis
 - Secure software lifecycle
- Organizational and Human Security
 - Elements of cybersecurity programs such as change, patch, and vulnerability management
 - Incident response
 - Backup and recovery procedures
 - Security impacts on business processes
 - Social engineering and open source intelligence
- Security, Ethics, and Society
 - Ethical issues in Cybersecurity
 - Cybersecurity issues and foreign policy
 - Cybersecurity issues and national security
 - Cybersecurity issues and critical infrastructure

Teaching delivery methods:

- Lectures
- Exercises
- Independent work
- Group project

Student obligations:

- Attending classes
- Submitting assignments

- Participate in class activities

Monitoring student work:

Activity	ECTS
Quizzes	0.75
Assignments	1.75
Class Activities	0.75
Exams	1.75
Total	5

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

Assessment and evaluation of student work

Components of evaluation:

Component	Points/%
Quizzes	15
Assignments	35
Class Activities	15
Exams	35
Total:	100

Required reading:

- Andress, J. (2019). Foundations of information security: A straightforward introduction. No Starch Press.
- Aumasson, J.-P. (2017). Serious cryptography: A practical introduction to modern encryption. No Starch Press.

Additional reading:

- Bishop, M. (2019). Computer Security Art and Science, 2nd Ed. Addison-Wesley Professional.
- Stallings, W. (2023). Cryptography and Network Security Principles and Practice, 8th Edition. Pearson.

- Oakley, J. G., Butler, M., York, W., Puckett, M., & Sewell, J. L. (2022). Theoretical cybersecurity: Principles and advanced concepts (1st ed.). Apress.
- Gupta, C. P., Goyal, K. K. (2020). Cybersecurity: A self-teaching introduction. Mercury Learning and Information.

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:	Project-Based Calculus I
Course leader:	Kristina Šorić
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	First
ECTS points:	5
Teaching hours (L+S+E):	60 (2+0+2)

Course Description

Course objectives:

- To have students exhibit skill in, and knowledge and comprehension of a breadth of mathematical topics.
- To have students use analytical methods and computational tools to solve mathematical problems.
- To have students explain mathematical ideas and arguments in both presentations and writing.

Conditions for enrolment in the course:

None

Expected learning outcomes of the course:

A student will be able to:

LO1: Analyze functions, continuity, limit, derivative and integral

LO2: Analyze mathematical concepts for modeling and solving problems from real world environment

LO3: Evaluate functions, derivatives and definite integrals

LO4: Formulate mathematical equations from verbal descriptions in applications

Course content:

1 REVIEW OF FUNCTIONS AND THEIR GRAPHS

- 1.1 Algebra of functions, including shifting and scaling, and composition
- 1.2 Exponential functions, and hyperbolic trigonometric functions
- 1.3 Trigonometric functions
- 1.4 Inverse functions (incl. logarithms and inverse trigonometric functions)

2 LIMITS

- 2.1 Rates of change and tangent lines
- 2.2 Properties of limits
- 2.3 One-sided limits
- 2.4 Continuity and types of discontinuities
- 2.5 Intermediate Value Theorem
- 2.6 Extreme Value Theorem
- 2.7 Limits at infinity, infinite limits and asymptotes

3 DIFFERENTIATION

- 3.1 Tangent lines and the derivative at a point
- 3.2 The derivative as a function
- 3.3 Differentiation rules for elementary functions
- 3.4 The Product Rule and Quotient Rule
- 3.5 The Chain Rule
- 3.6 Implicit differentiation
- 3.7 Derivatives of inverse functions (incl. logarithms and inverse trig functions)
- 3.8 Linear approximations and differentials

4 APPLICATIONS OF DIFFERENTIATION

- 4.1 Rate of change
- 4.2 Related rates
- 4.3 Critical points and Fermat's Theorem
- 4.4 Rolle's Theorem and Mean Value Theorem
- 4.5 Monotonicity, and the First Derivative Test
- 4.6 Concavity, and the Second Derivative Test

4.7 Curve sketching (synthesis of derivative information)

4.8 Indeterminate forms and L'Hôpital's Rule

4.9 Optimization

4.10 Newton's Method*

5 INTEGRATION

5.1 Estimating area

5.2 Sigma notation and Riemann sums

5.3 Antiderivatives

5.4 The definite integral, area, and net change

5.5 Fundamental Theorem of Calculus

5.6 Indefinite integrals

5.7 Method of Substitution

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	1.5
Quizzes/	
Continuous work /	1
Participation	
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 (at the moment of submitting the Study Programme Report):

- Stewart, J., Calculus, Early Transcendentals, Cengage, Boston, MA

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

- 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

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:	Introduction to Psychology
Course leader:	Maja Vurnek Živković
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	First
ECTS points:	5
Teaching hours (L+S+E):	45 (2+0+1)

Course Description

Course objectives:

- Interpret basic concepts, research findings and ethical principles in psychology.
- Evaluate logical and objective conclusions about behavior and mental processes from empirical evidence and everyday life.
- Analyze written scientific papers from various psychology topics.

Conditions for enrolment in the course:

None

Expected learning outcomes of the course:

A student will be able to:

L01: Describe the concept and consequences from each of the 10 topic areas

L02: Implement the relationship between individuals, the environment, cognition and behaviour

L03: Argue the major critical debates in psychology and connect scientific evidence from different sides of each debate

Course content:

Introduction to the field of psychology. Provides a survey of basic concepts, theories, and research methods. Topics include: thinking critically with psychological science; neuroscience and behavior; sensation and perception; learning; memory; thinking, language, and intelligence; motivation and emotion; personality; psychological disorders and therapy; and social psychology.

Teaching delivery methods:

- Lectures
- Seminars

Student obligations:

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

Monitoring student work:

Activity	ECTS
Exam 1	1.25
Exam 2	1.5
Exam 3	1.5
Research report	0.5
Presentation	0.25
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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Exam 1	25
Exam 2	30
Exam 3	30
Research report	10
Presentation	5
Total:	100

Course learning outcomes based grading table:

	As 1	As 2	As 3	As 4	As 5	ECTS	Points
ECTS	1.3	1.3	1.3	1.5	0.6		
Points	20	20	20	25	10		
CLO1	x	x		x		2	40
CLO2		x	x	x		1	30
CLO3			x	x		2	30

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

- Myers, D.G. & De Waal N. C. (2018). Psychology (12th Edition). New York: Worth Publishers.
- APA Monitor Journal – monthly edition

- Other sources will be advised for use through Wallace Library at RIT and additional readings from various sources will be available on myCourses.

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

- Other sources will be advised for use through Wallace Library at RIT and additional readings from various sources will be available on myCourses.

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.

Attendance and participation:

- Class attendance is mandatory. Three absences during the semester are allowed and will not incur penalty. Your sick days are a part of these three allowed absences. Two points will be deducted for each additional absence, regardless of the reason. These points are deducted from the overall score at the end of the semester. A student who repeatedly comes late to class will be marked as absent and lose attendance points. If a student is absent, it is still their responsibility to do the assignment for the missed class and to find out what the assignment is for the next class. A student who has missed more than 40% of classes cannot pass the course, regardless of the number of points acquired.
- Work submitted past the due date will not be accepted. The dropbox folder in which the work is submitted is automatically locked after the deadline. Email submissions will not be accepted.
- Participation means coming to class prepared, listening attentively, taking notes, not engaging in disruptive behavior (side conversations with classmates, chewing gum, drinking, eating, talking on the cell phone, texting, etc.), engaging in discussions, and doing all assigned work. Participation does not equal attendance – it means contributing to the class and showing effort. Students who come to class unprepared (i.e. not having read the assigned text or seen the assigned film) may be asked to leave, thus losing the attendance for that day.

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

Course Schedule

Week/Lecture	Topic/Activity	Assignments due
W1 L1 W1 L2	Introduction to the course What is Psychology?	
W2 L3 W2 L4	Thinking Critically about Psychology The Biology of the Mind (Neuroscience of Behavior)	
W3 L5 W3 L6	Consciousness and the Two-Track Mind Sleep and Dreams	Pick the topic for group presentation from MyCourses
W4 L7 W4 L8	Basics of Perception and Sensation Learning 1	
W5 L9 W5 L10	Learning 2 Exam 1	
W6 L11 W6 L12	Memory Thinking	Pick the article for research report
W7 L13 W7 L14	Intelligence Nature, Nurture	
W8 L15	Personality	

W8 L16	Emotions and Stress	
W9 L17	Emotions and Health	
W9 L18	Motivation – What drives us	
W10 L19	Social Psychology 1	Research report submission until midnight
W10 L20	Exam 2	
W11 L21	Social Psychology 2	
W11 L22	Psychological Disorders	
W12 L23	Therapy	
W12 L24	Student's presentations	
W13 L25	Student's presentations	
W13 L26		
W14 L27	Student's presentations	
W14 L28		
W15	Exam 3	

Additional Policies and Procedures:

It is the student's duty to thoroughly familiarize themselves with all the policies applied in the course. The policies can be found on the links below:

Equal Access and Disability Accommodation Policy

This policy outlines RIT Croatia's values regarding diversity, equity, and inclusion. [More](#)

Academic Honesty Policy

This policy provides information about academic honesty, academic dishonesty, and related procedures. [More](#)

Resources

Writing Lab

The Writing Lab is a free service which enables students to have a writing assignment for **any class** critiqued with suggested corrections and improvements by an instructor. Using this service improves the quality of the work the student hands in for a grade. [More](#)

General Information

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

Course Description

Course objectives:

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

Conditions for enrolment in the course:

Introduction to Academic English – passed or tested out

Expected learning outcomes of the course:

A student will be able to:

- LO1:** Critically analyze a variety of texts.
- LO2:** Evaluate peer work.
- LO3:** Use APA style in citing and referencing.
- LO4:** Compose texts in standard English using appropriate style and rhetorical strategy.

Course content:

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

Teaching delivery methods:

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

Student obligations:

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

Monitoring student work:

Activity	ECTS
Fallacies & Cognitive Biases Quiz	0.5
Language Quiz	1
Critical Analysis 1	0.5
Critical Analysis 2	0.5
Critical Analysis 3	0.5
Peer Review 1	0.25
Persuasive Essay Draft	0.75
Persuasive Essay Peer Review	0.25
Persuasive Essay Final	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/%
Fallacies & Cognitive Biases Quiz	10
Language Quiz	20
Critical Analysis 1	10
Critical Analysis 2	10
Critical Analysis 3	10
Peer Review 1	5
Persuasive Essay Draft	15
Persuasive Essay Peer Review	5
Persuasive Essay Final	15
Total:	100

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

- VanderMey, R., Meyer, V., Van Rys, J., & Sebranek, P. (2012). *The college writer: A guide to thinking, writing, and researching*. Boston, MA: Wadsworth.
- Lunsford, A. A. (2010). *The St. Martin's handbook*. Boston, MA: Bedford/St. Martin's.

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

- Anker, S. (2010). *Real writing with readings*. Bedford/St. Martin's.

- Scarry, S., & Scarry, J. (2011). *The writer's workplace with readings. Building college writing skills*. Wadsworth.
- VanderMey, R., Meyer, V., Van Rys, J., & Sebranek, P. (2012). *The college writer: A guide to thinking, writing, and researching*. Wadsworth.

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:	Software Development and Problem Solving II
Course leader:	Alan Mutka
Study programme:	Cybersecurity
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:

GCIS-123 Software Development and Problem Solving I

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
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
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:	Introduction to Routing and Switching
Course leader:	Mladen Jurković
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	First
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

Course objectives:

- Introduce the foundational aspects of wired network infrastructures, including topologies and technologies, along with the protocols required for effective TCP/IP based communication.
- Dive into basic security concepts pertinent to TCP/IP networks and examine the layers 1, 2, and 3 in-depth using the ISO Open Systems Interconnection and TCP/IP models.
- Provide a comprehensive focus on the TCP/IP protocol suite and explore the Ethernet LAN protocol, emphasizing their roles and implementations in network environments.
- Explore advanced network functionalities through switching technology and the use of routed and routing protocols common in TCP/IP networks.
- Enhance theoretical knowledge with practical application through lab assignments that reflect the lecture content, focusing on experiential learning for each covered topic.

Conditions for enrolment in the course:

CSEC-140 Introduction to Cybersecurity

Expected learning outcomes of the course:

A student will be able to:

LO1: Evaluate RFCs, IEEE standards, and the standardization process as they relate to local and TCP/IP-based networks.

L02: Analyze the OSI and TCP/IP models, with emphasis on layers 1, 2, and 3 in modern communication protocols.

L03: Implement protocols and technologies for switched and routed IPv4 and IPv6 networks, including dynamic routing, VLANs, and network security measures.

L04: Use common network utilities in both Windows and Linux operating systems for troubleshooting and configuration.

Course content:

1. Review of Communications Models
2. Ethernet: Physical and Data Link Layer (802.3)
3. Overview of Internetworking Devices
4. Switch Operations
5. Spanning Tree Protocol(802.1D)
6. Internet Protocol (IP)
7. Basic networking tools and problem solving
8. Routing Basics – workstation perspective
9. Routing Basics – router perspective
10. Routing Metrics
11. Subnetting and CIDR Notation
12. Dynamic Routing Protocols – RIP
13. Dynamic Routing Introduction to OSPF
14. VLANs and Trunking
15. Securing the Network with Access Control Lists
16. Network Address Translation (NAT)
17. IPv6 Structure, Addressing and Neighbor Protocol

Teaching delivery methods:

- Lectures
- Laboratory
- Independent work
- Project

Student obligations:

- Attending classes
- Submitting assignments
- Participate in class activities

Monitoring student work:

Activity	ECTS
Quizzes	0.6
Homeworks	0.6
Daily Quizzes	0.9
Laboratory Assignments	1.8
Midterm Exam	0.9
Final Exam/Project	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
Homeworks	10
Daily Quizzes	15
Laboratory Assignments	30
Midterm Exam	15
Final Exam/Project	20
Total:	100

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

- “Packet Guide to Core Network Protocols” by Bruce Hartpence, O’Reilly, ISBN 978-1-449-30653-3
- “Packet Guide to Routing and Switching” by Bruce Hartpence, O’Reilly, ISBN 978-1-449-30655-7

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

-

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:	Project-Based Calculus II
Course leader:	Kristina Šorić
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	First
ECTS points:	5
Teaching hours (L+S+E):	60 (2+0+2)

Course Description

Course objectives:

- To have students exhibit skill in, and knowledge and comprehension of a breadth of mathematical topics.
- To have students use analytical methods and computational tools to solve mathematical problems.
- To have students explain mathematical ideas and arguments in both presentations and writing.

Conditions for enrolment in the course:

MATH-181 Project-Based Calculus I

Expected learning outcomes of the course:

A student will be able to:

- L01:** Analyze integral, parametric curves, infinite sequences and series
- L02:** Analyze mathematical concepts for modeling and solving problems from real world environment
- L03:** Evaluate definite integrals
- L04:** Formulate mathematical equations from verbal descriptions in applications

Course content:

1 TECHNIQUES OF INTEGRATION

- 1.1 Review of substitution
- 1.2 Integration by parts
- 1.3 Trigonometric integrals
- 1.4 Trigonometric substitution
- 1.5 Partial fractions decomposition
- 1.6 Trapezoid Rule (other numerical methods optional)
- 1.7 Improper integrals and comparison theorems

2 APPLICATIONS OF INTEGRATION

- 2.1 Area between curves
- 2.2 Calculation of volume using the method of slicing
 - 2.2.1 Method of disks/washers applied to solids of revolution
 - 2.2.2 Volumes of solids with other (constant) cross-sectional geometry
 - 2.2.3 Calculation of volume using the method of cylindrical shells
- 2.3 Average value
- 2.4 Arc length
- 2.5 Further applications (at least one of the following):
 - 2.5.1 Area of a surface of revolution
 - 2.5.2 Hydrostatic force
 - 2.5.3 Moments, and center of mass
 - 2.5.4 Work

3 PARAMETRIC CURVES

- 3.1 Plane curves defined by parametric equations
- 3.2 Calculus applied to parametric curves
 - 3.2.1 Tangent line
 - 3.2.2 Arc length

4 POLAR COORDINATES

- 4.1 Relationship to Cartesian coordinates
- 4.2 Curves described by equations in polar coordinates

4.3 Area and arc length in polar coordinates

5 INFINITE SEQUENCES

5.1 Definition and examples

5.2 Bounded Monotone Convergence Theorem

6 INFINITE SERIES

6.1 Infinite sum as a limit of partial sums

6.2 Geometric and telescoping series

6.3 The Integral Test and estimates of sums

6.4 Direct Comparison Test

6.5 Limit Comparison Test

6.6 Alternating series

6.7 Absolute and conditional convergence

6.8 Ratio Test and Root Test

6.9 Power series

6.9.1 Definition and examples

6.9.2 Interval of convergence

6.10 Maclaurin series

6.11 Taylor series

6.12 Binomial 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 (at the moment of submitting the Study Programme Report):

- Stewart, J., Calculus, Early Transcendentals, Cengage, Boston, MA

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

- 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

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:	Discrete Mathematics for Computing
Course leader:	Kristijan Tabak
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	First
ECTS points:	5
Teaching hours (L+S+E):	45 (1+1+1)

Course Description

Course objectives:

- Examine systems of propositional and predicate calculus.
- Demonstrate basic concepts in set theory.
- Compose various types of relations.
- Formulate recursive structures with applications on counting methods.

Conditions for enrolment in the course:

Co-requisites: MATH-182 Project-Based Calculus II

Expected learning outcomes of the course:

A student will be able to:

- L01:** Create formal methods to evaluate complex logical expressions,
- L02:** Classify different properties of graphs.
- L03:** Analyze enumeration methods for complex combinatorial enumeration problems.
- L04:** Construct sets of solutions for congruences.

Course content:

Number Systems. Modular arithmetic. Set representations. Intersections, unions, and complement. Logic, conjunction, disjunction, and negation. Tautologies and contradictions. Counting. Permutations and combinations. Graph traversal problems, including the traveling salesman problem. Shortest paths and Dijkstra's algorithm Matrix operations. Regular Sets. Regular expressions. Linear grammars. Finite state automata. Equivalence of regular expressions, linear grammars, and finite state automata.

Teaching delivery methods:

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

Student obligations:

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

Monitoring student work:

Activity	ECTS
Assignment 1	1.5
Assignment 2	1.5
Assignment 3	1.5
Quizzes/	

Continuous work/ 0.5

Participation

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/%
Assignment I	25
Assignment II	25
Assignment III	30
Quizzes/ Continuous work/ Participation	20
Total:	100

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

- 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 (at the moment of submitting the Study Programme Report):

-

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:	WRITING SEMINAR (UWRT 150)
Course leader:	Rebecca Charry Roje
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	First
ECTS points:	5
Teaching hours (L+S+E):	45 (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:

UWRT-100 Critical Reading and Writing

Expected learning outcomes of the course:

A student will be able to:

- L01:** Examine a variety of intellectually challenging non-fiction texts
- L02:** Criticize peer work
- L03:** Produce and revise a research project in written and oral form

Course content:

- paper structure
- conducting research
- finding sources
- identifying credible sources
- integrating sources
- citing and referencing
- peer review
- reporting findings
- presenting research

Teaching delivery methods:

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

Student obligations:

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

Monitoring student work:

Activity	ECTS
Topic Proposal	0.25
Quick Topic Presentation	0.5
Working Bibliography	0.25

Credibility Quiz	0.5
Research Paper 500 Draft	0.5
Peer Review 1	0.25
Annotated Bibliography	0.5
Research Paper 2000 Draft	0.5
Peer Review 2	0.25
Research Paper Present.	0.5
Final Paper	1
Total	5

Teaching time has been incorporated in time for assignments..

Assessment and evaluation of student work

Components of evaluation:

Component	Points/%
Topic Proposal	5
Quick Topic Presentation	10
Working Bibliography	5
Credibility Quiz	10
RP 500 Draft	10
Peer Review 1	5
Annotated Bibliography	10
RP 2000 Draft	10
Peer Review 2	5
RP Presentation	10
RP Final	20
Total:	100

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

- 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 (at the moment of submitting the Study Programme Report):

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

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:	Programming for Information Security
Course leader:	Alan Mutka
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	Second
ECTS points:	6
Teaching hours (L+S+E):	45 (2+0+1)

Course Description

Course objectives:

- Builds upon basic programming skills to provide programming knowledge for studying computing security.
- Covers network programming, memory management, and operating system calls.
- Includes associated security concepts related to these topics.
- Emphasizes understanding the compilation process.
- Focuses on the relationship between high-level and low-level programming concepts.
- Culminates in identifying and exploiting memory corruption vulnerabilities.

Conditions for enrolment in the course:

CSEC-140 Introduction to Cybersecurity

GCIS-124 Software Development and Problem Solving II

Expected learning outcomes of the course:

A student will be able to:

LO1: Develop a program using sockets in multiple programming languages.

- LO2:** Construct solutions that optimize memory management concepts and techniques for efficient resource allocation and deallocation.
- LO3:** Analyze the compilation process and how high-level code is translated into low-level code.
- LO4:** Implement applications in a low-level programming language such as x86 assembly.
- LO5:** Create memory corruption exploits to demonstrate how memory vulnerabilities can be exploited.

Course content:

1. Threads and Exceptions in Python
2. Sockets in Python
3. Intro to C. Types in C. C Sockets.
4. Memory management in C.
5. Buffers and vulnerabilities. Buffer overflows. Integer Overflows.
6. Linking DLLs and Hooking. Linux and Windows internals and system calls (messaging, IPC).
7. Compilation process. Parts of a compiler. Compiler optimizations. Decorators.
8. CPU Architecture. Context switching. Registers. Drivers.
9. Overview of x86 Assembly.
10. Fuzzing and debugging crashes
11. Exploitation of stack corruption vulnerabilities, analyzing stack corruption exploits and identifying IoCs
12. Stack protections. Bypassing stack protections
13. Exploitation of heap vulnerabilities, analyzing heap corruption exploits and identifying IoCs.

Teaching delivery methods:

- Lectures
- Exercises
- Laboratory
- Independent work
- Group Project
- Mentoring

Student obligations:

- Attending classes
- Submitting assignments
- Participate in discussions

Monitoring student work:

Activity	ECTS
In-class Activities	0.6
Laboratory	1.9
Mini-Practicals & Quizzes	1.2
Midterm Exam	1.2
Final Exam	1.2
Project	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/%
In-class Activities	10
Laboratory	15
Mini-Practicals & Quizzes	20
Midterm Exam	20
Final Exam	20
Project	15
Total:	100

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

- Erickson, J. (2008). Hacking: The art of exploitation. No Starch Press.
- Seitz, J. (2014). Black Hat Python: Python programming for hackers and pentesters. No Starch Press.

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

- Anley, C., Heasman, J., Leindner, S., & Richarte, G. (2007). Shellcoder's handbook: Discovering and exploiting security holes. Wiley.
- Kerrisk, M. (2010). The Linux programming interface. No Starch Press.

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:	System Administration I
Course leader:	Mladen Jurković
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	Second
ECTS points:	6
Teaching hours (L+S+E):	45 (2+0+1)

Course Description

Course objectives:

- Understand the role of a system administrator in a large organization.
- Configure various services on Linux and Windows servers.
- Write scripts to automate administrative tasks.
- Manage and deploy Linux and Windows servers.
- Apply concepts and techniques to secure and protect infrastructure.
- Explore operating systems, server administration, security, and deployment strategies.
- Participate actively in lectures and labs.

Conditions for enrolment in the course:

NSSA-241 Introduction to Routing and Switching

GCIS 123 Software Development and Problem Solving I

Expected learning outcomes of the course:

A student will be able to:

LO1: Evaluate ethical principles and their application in Systems Administration.

L02: Design secure system architectures by integrating core services and deployment strategies..

L03: Configure and manage Active Directory, Linux, and Windows Server environments to meet organizational needs.

L04: Implement virtualization and cloud computing solutions within system infrastructures.

L05: Analyze system and data security practices to identify potential vulnerabilities and recommend improvements.

Course content:

1. Role of the System Administrator
2. Ethics and System Administration
3. Standards and organizations
4. Systems Administration Tasks and Responsibilities
5. Basic troubleshooting and monitoring concepts
6. Operating Systems Architecture
7. Virtualization
8. Cloud Computing
9. System and Data Security Basics
10. Core Services and Deployment Concepts
11. Enterprise Security Fundamentals

Teaching delivery methods:

- Lectures
- Laboratory
- Independent work
- Mentoring
- Group Project

Student obligations:

- Attending classes
- Submitting assignments
- Participate in discussions

Monitoring student work:

Activity	ECTS
Laboratory	1.8
Scripting Assignments	0.6

Ethics Essay	0.6
Midterm	0.6
Final	0.9
Project	1.5
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/%
Laboratory	30
Scripting Assignments	10
Ethics Essay	10
Midterm	10
Final	15
Project	25
Total:	100

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

- Negus, C. (2015). Linux Bible (9th ed.). Wiley.
- Thomas, O. (2017). Windows Server 2016 inside out. Microsoft Press.

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

- Kent, K. G. (2010). Network documentation - The "how to" made simple. Etapmus Press.

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:	COS-ENVS-151- Scientific Inquiries in Environmental Science
Course leader:	Staša Puškarić
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	Second
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:

None

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	2.5
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 title:	Probability and Statistics I
Course leader:	Kristijan Tabak
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	Second
ECTS points:	5
Teaching hours (L+S+E):	45 (1+1+1)

Course Description

Course objectives:

- List axioms of probability theory
- State concept of classical probability theory
- Extend classical probability theory to application of conditional probability theory
- Interpret results of statistical analysis
- Classify discrete random variables

Conditions for enrolment in the course:

MATH-182 Project-Based Calculus II

Expected learning outcomes of the course:

A student will be able to:

- L01:** Analyze axiomatic frame of probability theory
- L02:** Interpret the results of statistical analysis
- L03:** Generate random events and apply conditional probabilities
- L04:** Compose discrete random variables to model complex systems.

Course content:

Axioms of probability. Random variables. Classical and conditional probability. Data descriptions, average, deviation, variance. Descriptive statistics. Bayes rule, total probability law. Combinatorics and special numbers. Enumerative techniques.

Teaching delivery methods:

- Lectures
- Exercises
- Remote learning
- Independent work
- Laboratory
- Mentoring
- Peer review

Student obligations:

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

Monitoring student work:

Activity	ECTS
Assignment 1	1.5
Assignment 2	1.5
Assignment 3	1.5
Quizz	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/%
Assignment 1	25

Assignment 2	25
Assignment 3	30
Quiz	20
Total:	100

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

- Devore, Probability and Statistics for Engineering and the Sciences, Brooks/Cole, Pacific Grove, CA
- Miller, Freund, and Johnson, Probability and Statistics for Engineers, Prentice Hall, Upper Saddle River, NJ
- Hines, Montgomery, Goldsman, Borror, Probability and Statistics in Engineering, Wiley, Hoboken, NJ
- Ross, Introduction to Probability and Statistics for Engineers and Scientists, Academic Press, New York, NY

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

-

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:	Beginning French I
Course leader:	Tea Kovačević
Study programme:	Cybersecurity
Course status:	Elective
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:

- Horizons, 6th edition by Manley, Smith, McMinn, and Prévost
- Horizons, Workbook/Lab Manual—available online via QUIA
- Text Audio CDs & Resources available through the Heinle Learning Center (iLrn)

Additional reading:

Les 500 Exercices de phonétique A1/A2 – Hachette, 2009

Les 500 Exercices de grammaire A1-Hachette, 2005

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 - Glauud 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

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:	Cybersecurity
Course status:	Elective
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 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 Germany and German speaking countries
- Engage students in in-class dialogues and readings

Conditions for enrolment in the course:

None

Expected learning outcomes of the course:

A student will be able to:

- L01:** Produce short and simple texts in written form about real life situations
- L02:** Select appropriate grammar and vocabulary at beginner level
- L03:** Combine a range of vocabulary to communicate effectively at beginner level
- L04:** 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
- Participate 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 (at the moment of submitting the Study Programme Report):

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

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

- Studio d A2, Deutsch als Fremdsprache, Kurs- und Übungsbuch, Cornelsen, Berlin

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:	Beginning Italian I
Course leader:	Zrinka Friganović Sain
Study programme:	Cybersecurity
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:

None

Expected learning outcomes of the course:

A student will be able to:

- L01:** Produce short and simple texts in written form about real life situations.
- L02:** Select appropriate grammar and vocabulary at beginner level.
- L03:** Combine a range of vocabulary to communicate effectively at beginner level.
- L04:** Differentiate some aspects of Italian life and culture.

Course content:

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

Teaching delivery methods:

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

Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate 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 (at the moment of submitting the Study Programme Report):

- 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 (at the moment of submitting the Study Programme Report):

- Cozzarelli, J.M. (2020). *Sentieri*. Vista Higher Learning

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

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

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

General Information

Course title:	Beginning Spanish I
Course leader:	Barbara Perić
Study programme:	Cybersecurity
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
- expressing ideas coherently at beginner level in writing
- gaining basic unders
- 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:

None

Expected learning outcomes of the course:

A student will be able to:

- LO1:** Produce short and simple texts in written form about real life situations.
- LO2:** Select appropriate grammar and vocabulary at beginner level
- LO3:** Combine a range of vocabulary to communicate effectively at beginner level

LO4: 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 tanding 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
- Participate 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 (at the moment of submitting the Study Programme Report):

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

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

- 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:	Reverse Engineering Fundamentals
Course leader:	Alan Mutka
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	Second
ECTS points:	6
Teaching hours (L+S+E):	45 (2+0+1)

Course Description

Course objectives:

- Analyze unknown source code using core concepts.
- Study a variety of low-level programming languages.
- Relate high-level programming language structures to low-level programming languages.
- Utilize tools and techniques for static analysis of unknown binaries.
- Apply dynamic analysis methods to unknown binaries.
- Build a foundation for further study in malware analysis..

Conditions for enrolment in the course:

CSEC-201 Programming for Information Security

Expected learning outcomes of the course:

A student will be able to:

L01: Develop code using a variety of low-level programming languages.

L02: Evaluate high-level programming structures in low-level code.

L03: Analyze the use of debuggers to trace code execution and the behavior of unknown executables.

L04: Course content:

1. Review of CPU Architecture
2. x86 and x64 Assembly
3. ARM Assembly
4. Windows kernel fundamentals. System calls. Process and thread execution. Drivers
5. Debugging and automation. Scripting with debugging tools.
6. Privacy, copy protections, and ethics
7. Code analysis. Analyzing code obfuscation and compiler optimizations.
8. Basic reverse engineering. Keygens. CD bypass.
9. Basic malware reverse engineering concepts

Teaching delivery methods:

- Lectures
- Laboratory
- Independent work
- Project
- Mentoring

Student obligations:

- Attending classes
- Submitting assignments
- Participate in discussions

Monitoring student work:

Activity	ECTS
Laboratory	3.6
Project	1.2
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/%
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Laboratory	3.6
Project	20
Final Exam	20
Total:	100

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

- Weissman, J. S. (2021). Principles of computer security: CompTIA Security+ and beyond lab manual (Exam SY0-601). McGraw-Hill.
- Sikorski, M., & Honig, A. (2012). Practical malware analysis. No Starch Press.

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

- Monnappa, K. A. (2018). Learning malware analysis. Packt Publishing.

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:	Network Services
Course leader:	Mladen Jurković
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	Second
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

Course objectives:

- Investigate protocols that support network-based services.
- Configure and administer network services in virtualized Linux and Windows internetworking environments.
- Explore the TCP/IP protocol suite, with a focus on TCP and UDP.
- Administer network-based services, including DHCP, DNS, SSH, and VoIP.
- Develop a thorough theoretical understanding of IP, TCP, and UDP.
- Gain experience in administering, monitoring, securing, and troubleshooting internetworks running these protocols and services.

Conditions for enrolment in the course:

NSSA-241 Introduction to Routing and Switching

GCIS 123 Software Development and Problem Solving I

NSSA-221 Systems Administration I

Expected learning outcomes of the course:

A student will be able to:

- L01:** Architect DHCP and DNS configurations for optimized network performance.
- L02:** Justify the use of TCP and UDP protocols in different network scenarios.
- L03:** Analyze protocols and implementation strategies for DHCP and DNS servers in both Windows and Linux environments.
- L04:** Develop solutions using Voice over IP protocols, devices, and deployment strategies.

Course content:

- 1. IPv4
 - 4.1.1. structure, operation, addressing
- 2. Transport Layer Protocols
 - 4.1.1. Overview of the TCP/IP Protocol Suite
 - 4.1.2. Specifics of UDP and TCP (v4)
 - 4.1.3. UDP and TCP operation (v6)
- 4.2. Dynamic Configuration (DHCP)
 - 4.1.1. Evolution of RARP, BootP and DHCP
 - 4.1.2. Configuration/installation of BootP/DHCP service
 - 4.1.3. Neighbor discovery and other essential ICMP services in IPv6
 - 4.1.4. DHCP v6
 - 4.1.5. IPv6 address allocation strategies
- 6.2. DNS
 - 4.1.1. History
 - 4.1.2. Servers
 - 4.1.3. Record types
 - 4.1.4. Configuration files
 - 4.1.5. Primary versus Secondary servers
 - 4.1.6. Subdomains
 - 4.1.7. Fail Over
 - 4.1.8. DNS Security
 - 4.1.9. DNS for IPv6
- 6.2. SSH
 - 4.1.1. Overview of remote access
 - 4.1.2. Overview of SSH
 - 4.1.3. SSH configuration/installation implementation and administration
 - 4.1.4. Secure SSH
- 4.2. Voice over IP
 - 4.6.1 Codec operation (ex. PCM)
 - 4.6.1.1 Audio
 - 4.6.1.2 Video
 - 4.6.2 SIP
 - 4.6.3 RTP/RTCP H.323

Teaching delivery methods:

- Lectures
- Laboratory
- Independent work
- Mentoring
- Project

Student obligations:

- Attending classes
- Submitting assignments
- Participate in discussions

Monitoring student work:

Activity	ECTS
Laboratory	1.2
Class Exercises	0.6
Quizzes	0.9
Midterm Exam	1.2
Project	0.6
Final Exam	1.5
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/%
Lab Reports	20
Class Exercises	10
Quizzes	15
Midterm Exam	20
Project	10

Final Exam	25
Total:	100

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

- Kozierok, C. (2005). The TCP/IP guide: A comprehensive, illustrated internet protocols reference. No Starch Press.
- Liu, C., & Albitz, P. (2006). DNS and BIND. O'Reilly.

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

- Hartpence, B. (2013). Packet guide to Voice over IP. O'Reilly Media, Inc.

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:	Statistical Inference, STAT - 257
Course leader:	Kristijan Tabak
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	Second
ECTS points:	5
Teaching hours (L+S+E):	45 (1+1+1)

Course Description

Course objectives:

- Learn how data furthers understanding of science and engineering.
- Learn basic statistical concepts in sampling theory.
- Learn hypothesis testing and confidence intervals.
- Learn point estimation and simple linear regression.

Conditions for enrolment in the course:

MATH-251 Probability and Statistics I

Expected learning outcomes of the course:

A student will be able to:

- LO1:** Develop an understanding of the statistical framework that supports engineering and science.
- LO2:** Develop critical and analytical thinking.
- LO3:** Develop an appropriate level of statistical literacy and competency.
- LO4:** Effectively use statistics to model, analyze, and solve problems arising in science, engineering, business, and other disciplines.

Course content:

This course introduces the fundamental principles and methods of statistical inference. Topics include point and interval estimation, properties of estimators, hypothesis testing, likelihood-based inference, and an introduction to Bayesian methods. Emphasis is placed on both theoretical understanding and practical application using statistical software. Students will develop the ability to draw valid conclusions from data and assess the reliability of those conclusions in real-world contexts.

Teaching delivery methods:

- Lectures
- Workshops
- Exercises
- Remote learning
- Independent work
- Multimedia
- Laboratory
- 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
Quizz	1
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/%
Assignment 1	25
Assignment 2	25
Assignment 3	30
Quizz	20
Total:	100

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

- Probability and Statistics for Engineering and the Sciences, 9th Edition, Jay L. Devore,

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

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:	Introduction to Moral Issues
Course leader:	Vanda Bazdan
Study programme:	Cybersecurity BS
Course status:	Obligatory
Year:	Second
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

This course examines ethical questions that arise in the course of day-to-day individual and social life. Some consideration will be given to ethical theory and its application to such questions, but emphasis will be on basic moral questions and practical issues. Examples of typical issues to be examined are: What are the grounds for moral obligations like keeping promises or obeying the law? How do we reason about what to do? Examples of typical moral issues that may be introduced are capital punishment, euthanasia, abortion, corporate responsibility, the treatment of animals, and so forth

Course objectives:

The principal goal of this course is for each student to become more aware of moral reasoning and to become more proficient at evaluating and producing sound moral arguments. The aims of the course include for students:

- to be able to identify moral arguments.
- to develop the ability to critically evaluate the assumptions which ground such arguments,
- to support moral arguments with coherent, relevant, and sound reasons,
- to communicate thoughts clearly and precisely,
- to become familiar with the history of ethical thought in the western tradition,
- to learn about pressing moral questions,
- to develop the habit of careful analysis and critical evaluation of beliefs,

- to become aware of the importance of basic assumptions in his thinking and acting,
- to become aware of some of the philosophical assumptions one ordinarily makes,
- to examine those assumptions critically considering the reasons or evidence that could be offered both for and against them,
- to become aware of alternative assumptions one might make together with reasons for choosing or rejecting them,
- to develop a more reasonable and coherent view of oneself in relation to others and to the universe in which one lives.

Conditions for enrolment in the course:

None

Expected learning outcomes of the course:

A student will be able to:

LO1: Evaluate moral problems and ethical issues in morally salient situations and events.

LO2: Apply core concepts of ethical analysis, and main tenets of ethical theories.

LO3: Compose arguments to support and defend their attitudes in written format, and in competitive debates (in keeping with the academic standards).

Course content:

Introduction to morality

Moral values

Moral Issues and Moral Problems

Moral Judgments

Universal principles?

Responsibility and Rights?

The good life?

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
- Participate in discussions

Monitoring student work:

Activity	ECTS
Discussions	3
Exam 1	1
Exam 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

Discussions	60
Total:	100

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

- Perry, J., Bratman, M., & Fischer, J. M. (2018). Introduction to philosophy: Classical and contemporary readings. Oxford University Press.
- Shafer-Landau, R. (2020). Fundamentals of Ethics. Oxford University Press.
- Vaughn, L., & Pojman, L.P. (2021). The moral life: *An introductory reader in ethics and literature*. Oxford University Press.

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

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

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:	Beginning French II
Course leader:	Tea Kovačević
Study programme:	CSEC
Course status:	Elective
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 France 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:

Horizons, 6th edition by Manley, Smith, McMinn, and Prévost

Horizons, Workbook/Lab Manual—available online via QUIA

Text Audio CDs & Resources available through the Heinle Learning Center (iLrn)

Additional reading:

Les 500 Exercices de phonétique A1/A2 – Hachette, 2009

Les 500 Exercices de grammaire A1-Hachette, 2005

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

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:	Program
Course status:	Elective
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:

Beginning German I

Expected learning outcomes of the course:

A student will be able to:

L01: Produce short texts in written form

L02: Implement appropriate grammar rules and vocabulary at sentence and text level in written form

L03: Combine a range of vocabulary to communicate effectively at beginner level

L04: 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
- Participate 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 (at the moment of submitting the Study Programme Report):

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

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

- Studio d A2, Deutsch als Fremdsprache, Kurs- und Übungsbuch, Cornelsen, Berlin

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:	Beginning Italian II
Course leader:	Zrinka Friganović Sain
Study programme:	Cybersecurity
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:

- | | |
|-------------|---|
| L01: | Produce short texts in written form |
| L02: | Implement appropriate grammar rules and vocabulary at sentence and text level in written form |
| L03: | Combine more complex vocabulary to improve communication skills |
| L04: | 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
- Remote learning
- Independent work
- Project work
- Multimedia

Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate 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 (at the moment of submitting the Study Programme Report):

- 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 (at the moment of submitting the Study Programme Report):

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

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

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

General Information

Course title:	Beginning Spanish II
Course leader:	Barbara Perić
Study programme:	Cybersecurity
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:

L01: Produce short texts in written form1

L02: Implement appropriate grammar rules and vocabulary at sentence and text level in written form

L03: Combine more complex vocabulary to improve communication skills

L04:

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
- Remote learning
- Independent work
- Project work
- Multimedia

Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate 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 (at the moment of submitting the Study Programme Report):

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

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

- 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:	Industrial/Organisational I/O Psychology
Course leader:	Ana Havelka Meštrović
Study programme:	Cybersecurity
Course status:	Elective
Year:	Second
ECTS points:	5
	45 (3+0+0)
Teaching hours (L+S+E):	

Course Description

This course will provide an Introduction to Industrial and Organisational Psychology, a scientific discipline that studies human behaviour in the workplace. Organisational psychologists help institutions hire, manage, develop, support employees and align employee efforts with business needs. Their work contributes to outcomes such as better talent to achieve the strategic goals of the organisation, reduced turnover, increased productivity, and improved employee engagement. In February 2014, the U.S. The Bureau of Labor Statistics named Industrial and Organisational Psychology as the fastest growing profession with a projected growth of 53% until 2022.

Course objectives:

- Explain key concepts and principles of Industrial and Organisational Psychology.
- Apply psychological theories to workplace behaviour and performance.
- Analyze factors influencing motivation, leadership, and teamwork.
- Evaluate methods for employee selection, training, and assessment.
- Discuss strategies to improve job satisfaction and organizational effectiveness.

Conditions for enrolment in the course:

Prerequisite: PSYC-101 Introduction to Psychology

Expected learning outcomes of the course:

A student will be able to:

CLO 1 Interpret different methods of psychological research required to study problems in industrial and organisational settings.

CLO 2 Compose and evaluate basic principles of I/O Psychology to Human Resources management in organisations: job analysis, staffing decisions (selection, job performance evaluation, promotion, and separation), and employee development.

CLO 3 Analyze workplace diversity, justice and fairness in a dynamic, global, and multicultural job market.

Course content:

- Industrial and organisational (I/O) psychology - history
- Job analysis
- Defining and measuring job performance
- Performance appraisal, tests, employment interviews
- Employee selection and training, and human factors
- Human factors in working environment

Teaching delivery methods:

- Lectures
- Remote learning
- Project work
- Individual work

Student obligations:

- Attending classes
- Submitting projects and assignments

- Participate in discussions

Monitoring student work:

Activity	ECTS
Exam 1	0.5
Exam 2	0.5
Exam 3	1.0
I/O Portfolio	2.0
Presentation	1.0

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/%
Exam 1	20/20
Exam 2	20/20
Exam 3	20/20
I/O Portfolio	20/20
Presentation Individual work	20/20
Total:	100/100

Description of assignments

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

Portfolio This is a multistep project involving a job analysis, selection system, and performance rating. Detailed instructions are provided on a separate handout Required reading:

Required reading:

- Landy, F. J., & Conte, J. M. (2013). Work in the 21st century: An introduction to industrial and organizational psychology (4th ed.). Hoboken, NJ, US: John Wiley & Sons Inc.
 - Levy, P. (2013). Industrial/Organizational Psychology: Understanding the Workplace (4th ed.). New York: Worth Publishers
-

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:	Social Psychology
Course leader:	Ana Havelka Meštrović
Study programme:	Cybersecurity
Course status:	Elective
Year:	Second
ECTS points:	5
	45 (3+0+0)
Teaching hours (L+S+E):	

Course Description

This course explores topics related to behaviors and mental processes of individuals in social situations. Topics include: methodology, social perception, social cognition, the self, attitudes, prejudice, attraction, social influence, pro-social behavior, aggression, and behavior in groups.

Course activities include lecture, class demonstrations, and assignments. The flavor of the course is experiential and applications-oriented.

Course objectives:

- Obtain new knowledge about Social Psychology.
- Understand the concept of social psychology
- Examine group behavior
- Develop a critical understanding of diffusion of responsibility
- To have better understanding about social and group behaviors

Conditions for enrolment in the course:

Prerequisite: PSYC-101 Introduction to Psychology

Expected learning outcomes of the course:

A student will be able to:

CLO 1 Describe major people, concepts, and theoretical models covered in the course.

CLO 2 Implement major concepts in social perception and social cognition

CLO 3 Argue sources of attitudes, stereotypes, and prejudices including possible ways of reducing stereotypes and prejudice.

Course content:

- Introduction to social psychology: history, key concepts
- Major experiments in social psychology
- Group effects on behavior
- Difusion of responsibility
- Social Psychology Theories
- Obedience to authority
- Group cohesion

Teaching delivery methods:

- Lectures
- Remote learning
- Project work
- Individual work

Student obligations:

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

Monitoring student work:

Activity	ECTS
Exam 1	0,25
Exam 2	0,5
Exam 3	0,5
Personal Exercise	2,5
Group presentation	1,25

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/%
Exam 1	5/5
Exam 2	10/10
Exam 3	10/10
Social portfolio and experiment	50/50
Group presentation	25/25
Total:	100

Description of assignments

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

Personal Experiment promote students' practical involvement within the Social Psychology Sciences. Students need to design one social psychology experiment and test hypotheses on 10 colleagues.

Required reading:

- Baron & Branscombe (2012) Social Psychology (you have online access via MyCourses and hard copy in library)
- I will place a selection of readings from various sources on MyCourses. I will also direct you to possible resources available through the Wallace Library at RIT.
- Other sources will be advised for use through Wallace Library at RIT and additional readings from various sources will be 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:	CSEC COOPERATIVE EDUCATION 1
Course leader:	Irena Guszak
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	Second
ECTS points:	12
Teaching hours (L+S+E):	co-op

Course Description

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 106 ECTS 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 organisation.

CLO4: Reflect on professional and personal growth, and work-related competencies gained during co-op.

Course content:

Co-op documentation

- Registration & offer letter
- Reports
- Evaluations

Field work

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

General Information

Course title:	Introduction to Cryptography
Course leader:	Branko Mihaljević
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	Third
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

Course objectives:

- Introduce the fundamentals of cryptography and its mathematical foundations.
- Explore the relationship between cryptography and security.
- Analyze classical cryptosystems and their applications.
- Examine private-key cryptosystems, including DES and AES.
- Study hashing algorithms and their role in data security.
- Investigate public-key cryptosystems, including RSA.
- Introduce concepts of data integrity and authentication.

Conditions for enrolment in the course:

CSEC-202 Reverse Engineering Fundamentals

MATH-190 Discrete Mathematics for Computing

Expected learning outcomes of the course:

A student will be able to:

L01: Evaluate classical and contemporary encryption techniques and cryptographic algorithms for strengths and vulnerabilities in various security scenarios.

- L02:** Assess the role of present mathematical concepts in ensuring the robustness and computational hardness of modern cryptographic algorithms.
- L03:** Cryptanalyze modern symmetric and asymmetric (public-key) cryptographic algorithms considering their computational weaknesses and insecurities.
- L04:** Develop a cryptographic solution for a real-world problem using contemporary encryption.

Course content:

- 4.1 History, overview and the need for cryptography
- 4.2 Classical cryptosystems, such as:
 - 4.2.1 Shift
 - 4.2.2 Substitution
 - 4.2.3 Affine
 - 4.2.4 Hill
 - 4.2.5 Vigenère
- 4.3 Mathematical basics, including:
 - 4.3.1 Modular arithmetic
 - 4.3.2 Euclidean algorithm
 - 4.3.3 Probabilistic independence
 - 4.3.4 Linear algebra
 - 4.3.5 Number theory
 - 4.3.6 Finite fields
 - 4.3.7 Complexity
 - 4.3.8 Asymptotic analysis
- 4.4 Primality and factoring
- 4.5 Private-key cryptosystems
 - 4.5.1 Substitution-permutation networks
 - 4.5.2 Linear cryptanalysis
 - 4.5.3 Differential cryptanalysis
 - 4.5.4 DES
 - 4.5.5 AES
- 4.6 Public-key cryptosystems
 - 4.6.1 Diffie-Hellman
 - 4.6.2 RSA
- 4.7 Data integrity and authentication
 - 4.7.1 Hashing
 - 4.7.2 Digital signatures

Teaching delivery methods:

- Lectures
- Exercises
- Independent work

Student obligations:

- Attending classes
- Submitting assignments
- Participate in discussions

Monitoring student work:

Activity	ECTS
Assignment	1.8
Exams	3.6
In-Class Activities	0.6
Total	6

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

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

Component	Points/%
Assignments	30
Exam 1	20
Exam 2	20
Exam 3	20
In-Class Activities	10
Total:	100

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

- Paar, C., Pelzl, J., Güneysu, T., & SpringerLink (Online service). (2024). Understanding cryptography: From established symmetric and asymmetric ciphers to post-quantum algorithms (2nd ed.). Springer Berlin Heidelberg.

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

- Smart, N. (2016). Cryptography made simple (1st ed.). Springer Nature.
- Mammeri, Z. Z. (2024). Cryptography. Wiley.
- Buchanan, W. J. (2017). Cryptography (1st ed.). River Publishers.
- Oppliger, R. (2021). Cryptography 101: From theory to practice (1st ed.). Artech House.
- Musa, S. M. (2022). Network security and cryptography (2nd ed.). Mercury Learning & Information.
- Bock, L. (2021). Modern cryptography for cybersecurity professionals (1st ed.). Packt Publishing.
- Wong, D. (2021). Real-world cryptography (1st ed.). Manning Publications Company.
- Aumasson, J.-P. (2017). Serious cryptography: A practical introduction to modern encryption. No Starch Press.

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:	Endpoint Security Engineering
Course leader:	Aleksander Radovan
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	Third
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

Course objectives:

- Discuss cybersecurity defensive measures and their application in protecting computing endpoints.
- Study, analyze, and understand vulnerabilities and threats to computing systems.
- Identify and implement preventative and detective controls to mitigate risks.
- Explore and apply defensive endpoint-based controls through hands-on exercises.

Conditions for enrolment in the course:

NSSA-245 Network Services

CSEC-140 Introduction to Cybersecurity

Expected learning outcomes of the course:

A student will be able to:

- L01:** Analyze threat actor behaviors, threats, vulnerabilities, and defensive strategies.
- L02:** Evaluate host-based controls to protect hosts and detect incidents..
- L03:** Develop a secure computing infrastructure, including administration, monitoring, and defense against threats.

Course content:

1. Cybersecurity terminology, concepts, and information sources.
2. Cyber threat intelligence and threat actor behavior.
3. Cybersecurity frameworks, controls, and baselines.
4. Identification of assets, threats, and vulnerabilities.
5. Software supply chain risk management.
6. Protection of hosts through the application of host-based controls.
7. Protection against social engineering through awareness training.
8. Host monitoring and identification and detection of events and incidents.
9. Incident response.
10. Ethics and professional responsibilities.

Teaching delivery methods:

- Lectures
- Independent work
- Project work

Student obligations:

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

Monitoring student work:

Activity	ECTS
Quizzes	0.5
Assignments	2.5
Project	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/%
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Quizzes	10
Assignments	40
Project	50
Total:	100

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

- Anson. (2020). Applied incident response. Wiley.
- Bollinger, Enright, & Valites. (2015). Crafting the InfoSec playbook: Security monitoring and incident response master plan. O'Reilly Media, Inc.

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

- Brotherston, & Berlin. (2017). Defensive security handbook: Best practices for securing infrastructure. O'Reilly Media, Inc.
- Dunkerley, & Tumbarello. (2022). Mastering Windows security and hardening - Second edition. Packt Publishing.

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:	Introduction to Database and Data Modeling
Course leader:	Aleksander Radovan
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	Third
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

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
- 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:

GCIS 123 Software Development and Problem Solving I

Expected learning outcomes of the course:

A student will be able to:

L01: Design a new data model based on entities in an information system

- L02:** Create relationships between database tables (1:1, 1:N, M:N)
- L03:** Examine the data model with first, second, third or Boyce-Codd normal form
- L04:** Develop a SQL query that fetches, saves, updates or delete rows from a database
- L05:** Formulate SQL query in a way to use transactions

Course content:

1. *Conceptual Foundation of Data Organization*
 - a. Logical data modeling
 - b. Physical data modeling
2. *Conceptual Foundation of the Relational Model*
 - a. Keys and referential integrity
 - b. Functional dependencies and normalization
3. *Data Modeling Techniques*
 - a. The motivation for data modeling
 - b. Basic Entity-Relationship Diagram (ERD) elements and components
 - c. Basic relationships
 - d. Reading and interpreting an ERD
4. *Relational Mapping and Normalization*
 - a. Rules for implementing relationships from an ERD within a relational model
 - b. Constructing a relational model from an ERD
 - c. Evaluating a relational model by applying normalization theory
5. *Relational Algebra and SQL*
 - a. SQL Data Definition Language (DDL) statements
 - b. Introduction to database management systems
 - c. Using SQL DDL statements to create a physical model
 - d. SQL Data Manipulation Language (DML) statements
 - e. Using SQL DML statements to query a physical model
 - f. Relational algebra operations using SQL
6. *Advanced Topics*
 - a. Backups and recovery
 - b. Transaction concepts
 - c. Complex queries
 - d. 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 X.X 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 (at the moment of submitting the Study Programme Report):

- Kroenke, D. M., & Auer, D. J. (2014). Database concepts (7th ed.). Pearson Prentice-Hall.

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

- Fehily, C. (2008). SQL Visual QuickStart guide (3rd ed.). Peachpit Press.

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:

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

General Information

Course title:	COMM-201 Public Speaking
Course leader:	Jakob Patekar
Study programme:	Cybersecurity
Course status:	Mandatory
Year:	Third
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

Course objectives:

- Equip students with an understanding of the fundamental theories and principles of formal public speaking.
- Teach students to organize informative and persuasive speeches effectively, with emphasis on evidence, language, and strategic delivery.
- Train students in the use of media aids to enhance the impact and clarity of their public speaking presentations.

Conditions for enrolment in the course:

None

Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Explain fundamental concepts of effective public speaking.
- CLO2:** Evaluate the effectiveness of speeches.
- CLO3:** Create speeches tailored to specific purposes and audiences.
- CLO4:** Critically assess one's speech.

Course content:

- Speaking in Public
- Ethics and Public Speaking
- Listening
- Speech Preparation

- Presenting the Speech
- Speaking to Inform
- Speaking to Persuade
- Methods of Persuasion
- Speaking on Special Occasions
- Speaking in Small Groups

Teaching delivery methods:

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

Student obligations:

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

Monitoring student work:

Activity	ECTS
Speech Analysis Portfolio	1
Quizzes	1
Elevator Pitch Portfolio	1
Informative Speech	1
Persuasive Speech	1
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/%
1 Speech Analysis Portfolio	20
2 Quizzes	20

3 Elevator Pitch Portfolio	20
4 Informative Speech	20
5 Persuasive Speech	20
Total:	100

Required reading:

- Lucas, S. E. (2008). *The Art of Public Speaking* (10th edition). McGraw-Hill.
- Koch, A., & Schmitt, J. (2024). *Speaking with a Purpose* (11th Edition). Rutledge.

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:	CSEC
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:

Bravo!. Eight edition, Muyskens, Harlow, Vialet, Brière

Bravo!, Student Activities Manual, , Muyskens, Harlow, Vialet, Brière

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/B1 B2 - Glaudivine, Lannier Muriel, Loiseau Yves, Didier, 2015
- Edito 2 (méthode de français et cahier d'activités) – Marie-Pierre Baylocq Sassoubre, Stéphanie Brémaud, Stefano Campopiano, Clara Cheilan, Erwan Dambrine, Cécile Pinson, Didier, 2016
- Génération B1 (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:	Cybersecurity
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:

- L01:** Produce texts in written form about a range of topics
- L02:** Argue one's point in class discussions
- L03:** Support different cultural aspects with appropriate vocabulary
- L04:** Design a presentation on a topic of interest
- L05:** 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
- Remote learning
- Independent work
- Project work
- Multimedia

Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate 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 (at the moment of submitting the Study Programme Report):

- 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 (at the moment of submitting the Study Programme Report):

- Augustyn, P.; Euba, N. (2020). Stationen, Ein Kursbuch für die Mittelstufe. Fourth Edition, Cengage Learning.
- Funk, H., Kuhn, C., Demme, S., Winzer, B. (2009). Studio d B1 Deutsch als Fremdsprache, Cornelsen Verlag Berlin.

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:	Intermediate Italian I
Course leader:	Zrinka Friganović Sain
Study programme:	Cybersecurity
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:

- L01:** Produce texts in written form about a range of topics
- L02:** Argue one's point in class discussions
- L03:** Support different cultural aspects with appropriate vocabulary
- L04:** Design a presentation on a topic of interest
- L05:** 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
- Participate 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 (at the moment of submitting the Study Programme Report):

- 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 (at the moment of submitting the Study Programme Report):

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

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

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

General Information

Course title:	Intermediate Spanish I
Course leader:	Barbara Perić
Study programme:	Cybersecurity
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:

- L01:** Produce texts in written form about a range of topics
- L02:** Argue one's point in class discussions
- L03:** Support different cultural aspects with appropriate vocabulary
- L04:** Design a presentation on a topic of interest
- L05:** 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
- Remote learning
- Independent work
- Project work
- Multimedia

Student obligations:

- Attending classes
- Submitting projects and assignments
- Participate 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 (at the moment of submitting the Study Programme Report):

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

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

- Jarvis, A.C. & Lebrede, 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:	Cognitive Psychology
Course leader:	Ana Havelka Mestrović
Study programme:	Cybersecurity
Course status:	Elective
Year:	Third
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

Course objectives:

- Develop an understanding of the major theories of cognitive psychology
- Understand the methods involved in cognitive psychology research.
- Examine the ways in which humans differ with regards to the decision making process.
- Apply theories as tools for describing and explaining cognitive strategies in individuals
- Reflect on your own heuristics and mindset

Conditions for enrolment in the course:

PSYC 101

Expected learning outcomes of the course:

A student will be able to:

L01: Compare different cognitive strategies to solve the problems and thinking errors

L02: Analyze and disseminate relevant research, and master cognitive terminology used by professional psychologists

L03: Explain empirical evidence for theoretical positions within various areas of cognitive psychology

Course content:

- Cognition defined and described.
- Assessment of cognitive tests including ethical considerations and the scientific method.
- Brain development.
- Genetic approach to cognitive psychology.
- Mind trap.
- Behavioral/Learning approaches to personality.
- Heuristics
- Cultural/social/anthropological views of personality including non-Western views of cognition.
- Applications to individual differences.

Teaching delivery methods:

- Lectures
- Remote learning
- Independent work
- Project work

Student obligations:

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

Monitoring student work:

Activity	ECTS
Exam 1	1.0
Exam 2	1.5
Exam 3	1.5
Design Challenge	0.75
Presentation	0.25
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/%
Exam 1	20%/20
Exam 2	30%/30
Exam 3	30%/30
Design challenge	15%/15
Presentation	5%/5
Total	100

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

- Kanaan and Tversky(2010).Thinking fast and slow
- Gazzaniga (2011). Cognitive Neuroscience

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

- Materials from APA Monitor on Psychology (monthly edition)
- Olson & Hergenhahn (2011). An Introduction to Theories of Personality, 8th Ed.

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:	Personality
Course leader:	Ana Havelka Mestrović
Study programme:	Cybersecurity
Course status:	Elective
Year:	Third
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

Course objectives:

- Compare and contrast the major theoretical models of personality development and personality disorders, including relevant research findings.
- Critically evaluate important issues in the area of personality psychology developmental stages
- Explain biological, behavioral, and social influences on individual differences
- Recognize and appreciate diversity among people from different genders, races, ethnic, and cultural background

Conditions for enrolment in the course:

PSYC 101

Expected learning outcomes of the course:

A student will be able to:

- LO1:** Compare and contrast the major theoretical models of personality development and personality disorders, including relevant research findings.
- LO2:** Critically evaluate important issues in the area of personality psychology developmental stages
- LO3:** Explain biological, behavioral, and social influences on individual differences
- LO4:** Recognize and appreciate diversity among people from different genders, races, ethnic, and cultural background

Course content:

- Personality theories
- Sigmund Freud psychoanalytic theory of personality
- Alfred Adler theory
- OCEAN theory of personality
- Karen Horney theory of personality
- Big Five theory of personality
- Eysenck theory of personality
- Culture and personality
- Religion and personality

Teaching delivery methods:

- Lectures
- Remote learning
- Independent work

Student obligations:

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

Monitoring student work:

Activity	ECTS
Exam 1	1.0
Exam 2	1.0
Exam 3	1.0
Personality Portfolio	2.0
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/%
Exam 1	20/20
Exam 2	20/20
Exam 3	20/20
Personality portfolio	40/40
Total:	100

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

- Larsen and Buss (2000). Personality Psychology

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

- Materials from APA Monitor on Psychology (monthly edition)

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

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

General Information

Course title:	Authentication and Security Models
Course leader:	Branko Mihaljević
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	Third
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

Course objectives:

- Explore the theory, design, and implementation of access control and authentication systems in cybersecurity.
- Examine formal models of access control systems and approaches to system accreditation.
- Analyze the application of cryptography in authentication systems.
- Implement Identification, Authentication, Authorization, and Accountability (IAAA) principles in modern operating systems.
- Evaluate the concept of trust at each layer within access control and authentication processes.
- Research and write about emerging topics and future trends in access control and authentication systems.
- Develop skills to critically assess and apply IAAA principles in real-world scenarios.

Conditions for enrolment in the course:

CSCI-462 Introduction to Cryptography

Expected learning outcomes of the course:

A student will be able to:

LO1: Evaluate theoretical cybersecurity principles and trust models in the design of access control and authentication systems based on recent research findings.

LO2: Compare the effectiveness and trust of different authentication and access control systems.

LO3: Develop comprehensive authentication and authorization model with access control mechanism, suitable for modern information systems.

LO4: Critically assess the integration of IAAA principles across modern operating systems and applications, proposing improvements for enhanced accountability and trust.

Course content:

1. Identification, authentication, authorization, and accountability processes
2. Trust and trust models
3. Quantum-enabled and Quantum-resistant Cryptosystems
4. Formal models of access control systems (Bell-LaPadula, Biba, etc.)
5. Formal approaches for certification and accreditation of access control systems
6. Discretionary access control and Windows authentication/authorization systems
7. Mandatory access control and Linux authentication/authorization systems
8. Other models of access control and authentication/authorization systems
9. Single-sign on systems
10. Multi-factor authentication
11. Biometric-based Authentication

Teaching delivery methods:

- Lectures
- Exercises
- Independent work

Student obligations:

- Attending classes
- Submitting assignments
- Participate in discussions

Monitoring student work:

Activity	ECTS
Assignments	1.5
Exams	1.8

Project	2.4
In-Class Activities	0.3
Total	6

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

Assessment and evaluation of student work

Components of evaluation:

Component	Points/%
Assignments	25
Exams	30
Project	40
In-Class Activities	5
Total:	100

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

- Anderson, R. (2020). Security Engineering: A guide to building dependable distributed systems (3rd ed.). Wiley.
- Bishop, M. (2018). Computer security: Art and practice (2nd ed.). Addison-Wesley.

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

- Chin, S.-K., & Older, S. (2011). Access control, security, and trust: A logical approach. Chapman and Hall/CRC.
- Stallings, W. (2017). Computer security: Principles and practices (4th ed.). Pearson.
- Boonkrong, S. (2021). Authentication and access control: Practical cryptography methods and tools (1st ed.). Apress.

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:	Principles of Web Application Security
Course leader:	Kristina Marasović
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	Third
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

Course objectives:

- Provide a foundation in the theories and practices related to web application security.
- Introduce concepts associated with deploying and securing a typical HTTP environment.
- Teach defensive techniques applicable to web application security.

Conditions for enrolment in the course:

NSSA-245 Network Services

CSEC-140 Introduction to Cybersecurity

Expected learning outcomes of the course:

A student will be able to:

- L01:** Analyze the HTTP protocol and security issues associated with it.
- L02:** Examine the security issues related to different web application architectures.
- L03:** Evaluate the role of underlying network infrastructures and protocols in web application security.
- L04:** Design effective mitigation strategies for client and server-side web server misconfigurations.
- L05:** Assess client and server-side web application vulnerabilities and suggest remediation techniques.

Course content:

1. History and Core Web Application Concepts
2. The HTTP Protocol
3. Modern Web Application Infrastructure and Development (DevOps)
4. Web-based Authentication Models
5. Client-side Attacks
6. Client-side Defenses
7. Server-side Attacks
8. Server-side Defenses
9. Web Applications and the Cloud (as time permits)
10. Risk Management and Web Application Security

Teaching delivery methods:

- Lectures
- Independent work
- Lab assignments

Student obligations:

- Attending classes
- Submitting assignments
- Participate in discussions

Monitoring student work:

Activity	ECTS
Quizzes:	0.6
Midterm:	0.9
Final Exam:	0.9
Final Exam:	1.8
Assignments:	2.1
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%
Midterm	15%
Final Exam	15%
Project	20%
Assignments	35%
Total:	100

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

- Stuttard, D. (2011). The web application hacker's handbook: Finding and exploiting security flaws. Wiley.

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

- Zalewski, M. (2011). The tangled web: A guide to securing modern web applications. No Starch Press.
- Ball, C. (2022). Hacking APIs. No Starch Press.
- Seitz, J. (2021). Black Hat Python: Python Programming for Hackers and Pentesters (2nd ed.). No Starch Press.
- McDonald, M. (2020). Web Security for Developers. No Starch Press.
- Alcorn, W. (2014). The Browser Hacker's Handbook. Wiley Publishing.
- Studdard, D., & Pinto, M. (2011). The Web Application Hacker's Handbook. Wiley Publishing.

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:	Introduction to Intelligent Security Systems
Course leader:	Domagoj Tolić
Study programme:	Cybersecurity
Course status:	Mandatory
Year:	Third
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

Course objectives:

- Introduce students to the application of intelligent methodologies in the design of computer security and information assurance systems.
- Review various application areas, including intrusion detection and monitoring systems, access control, biological authentication, and firewall structure and design.
- Design and implement a course project focusing on creating a specific security tool using artificial intelligence methodologies.
- Evaluate the performance of the developed security tool and analyze its effectiveness in real-world scenarios.

Conditions for enrolment in the course:

3rd year standing

Expected learning outcomes of the course:

A student will be able to:

- L01:** Apply intelligent methodologies in the design of computer security and information assurance systems.
- L02:** Evaluate the performance and design concepts of fundamental computer security systems and tools.

LO3: Synthesize theoretical knowledge of artificial intelligence methodologies in practical security system design.

Course content:

- Review of intelligent methodologies: neural networks, fuzzy logic, genetic/evolutionary algorithms
- Conventional intelligent technologies: expert systems, pattern recognition, image processing, data mining, knowledge acquisition
- Intelligent systems (IS) in access control
- Biological authentication: neural networks and genetic algorithms in bio authentication subsystem design
- Intelligent intrusion detection: neural networks application
- Firewalls design based on rules processing systems: fuzzy logic application
- Study of the available tools and their application
- Project development and design, professional ethics discussion

Teaching delivery methods:

- Lectures
- Guest Lectures
- Demonstration of practical assignments

Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions
- Presenting and advocating their work

Monitoring student work:

Activity	ECTS
Midterm Exam	1.2
Final Exam	1.5

Homeworks	1.2
Project	1.8
Class Activities	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/%
Midterm Exam	20
Final Exam	25
Homeworks	20
Project	30
Class Activities	5

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

- Kizza, J. M. (2012). Guide to Computer Network Security. Springer. 2nd Ed.

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

- Computer Security Resource Center. (n.d.). National Institute of Standards and Technology. Retrieved from <http://csrc.nist.gov/>
- CERT Coordination Center. (n.d.). Carnegie Mellon University. Retrieved from <http://www.cert.org>.

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 through homeworks and exams

General Information

Course title: Applications of GIS: An Introduction to Geographic Information Systems and the Power of Maps

Course leader: Martin Žagar

Study programme: Cybersecurity

Course status: Mandatory

Year: Third

ECTS points: 5

Teaching hours (L+S+E): 60 (4+0+0)

Course Description

Course objectives:

- To gain an appreciation for, and an understanding of, the use of maps (especially digital maps) for the purpose of conveying information effectively;
- To critically appraise how the information conveyed can be deceptive or misleading;
- To learn how GIS works by integrating maps and their underlying databases (vector and raster);
- To learn how GIS can be used as an analytical tool in a wide variety of projects/disciplines, and
- To learn how to use ArcGIS Pro (the newest version of a widely used GIS computer application from ESRI)
- To learn how to use ArcGIS Online, including data resources, field apps, and Story maps.

Conditions for enrolment in the course:

None

Expected learning outcomes of the course:

A student will be able to:

- LO1:** Explain the core concepts and functionalities of Geographic Information Systems, and critically evaluate the strengths and limitations of spatial data and maps..
- LO2:** Apply GIS software and spatial analysis techniques to collect, manage, analyze, and visualize geographic information for real-world problem solving.
- LO3:** Design and complete a GIS-based project, effectively communicating methods, results, and implications using professional standards in mapping and reporting.
- LO4:** Demonstrate awareness of the ethical and societal implications of GIS applications across different disciplinary contexts.

Course content:

- Introduction to GIS: Concepts, history, types of GIS programs, industry applications, and spatial thinking.
- GIS Data: Sources, data structures (vector and raster), projections/coordinate systems, GPS, and data entry/output.
- GIS Software and Tools: Training in ESRI's ArcGIS Pro and ArcGIS Online, including project setup, managing databases, and digital/field data collection.
- Vector Data Creation and Editing: Digitizing, overlays, spatial analysis functions, and combining multiple data layers.
- Raster Data Management and Analysis: Understanding raster data, key differences from vector, raster database management, and types of analyses.
- Spatial Analysis: Buffering, overlays, pattern and distance analyses, network (routing/service areas), and map algebra.
- Thematic and Attribute Mapping: Creating effective and honest maps, exploring how cartography can mislead, and map interpretation.
- Critical GIS Applications: Use cases in environmental science, public health, business, and urban planning.
- GIS Project Design: Planning, executing, and presenting GIS-based research or management projects using professional standards and ethical awareness.

Teaching delivery methods:

- Lectures
- Guest Lectures
- Demonstration of practical assignments

Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions
- Presenting and advocating their work

Monitoring student work:

Activity	ECTS
Midterm Exam	1.0
Final Exam	1.25
Homeworks	1.0
Project	1.5
Class Activities	0.25
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	20
Final Exam	25
Homeworks	20
Project	30
Class Activities	5

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

- GIS Tutorial for ArcGIS Pro 3.4 by Gorr and Kurland

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

- Getting to Know ArcGIS Pro 3.2 by Michael Law and Amy Collins

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 through homeworks and exams

General Information

Course title:	Psychological Disorders
Course leader:	Ana Havelka Mestrovic
Study programme:	Cybersecurity
Course status:	Elective
Year:	Third
ECTS points:	5
	45 (3+0+0)
Teaching hours (L+S+E):	

Course Description

This course will serve as an introduction to the study of psychopathology and mental illness. The course examines the major categories of mental disorder not only from the descriptive point of view, but also in terms of the major theoretical explanations of the causes of disorder. The major treatment modalities also are covered.

Course objectives:

- Obtain new knowledge about Psychological Disorders.
- Understanding history and prejudice about disorders
- Understanding the Classification system of disorders DSM 5
- Develop a critical understanding of disorder symptoms and diagnostic issues
- To have better understanding about different disorders

Conditions for enrolment in the course:

Prerequisite: PSYC-101 Introduction to Psychology

Expected learning outcomes of the course:

A student will be able to:

- L01:** Explain abnormal vs. normal behaviours in historical, social, and cultural contexts (exams, group-led learning, film project).
- L02:** Compare a wide variety of behavior patterns that are labeled as “abnormal” (exams, group-led learning, film project).
- L03:** Identify the various diagnostic categories in the DSM -5 (exams, group-led learning, film project)

Course content:

- Introduction to psychological disorders: history, key concepts
- Major classification systems in disorders
- Different diagnostic instruments
- Diagnostic criteria
- Stigmatization of psychological disorders
- Treatment of disorders
- Therapeutic and Biological models in disorders

Teaching delivery methods:

- Lectures
- Remote learning
- Project work
- Individual work

Student obligations:

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

Monitoring student work:

Activity	ECTS
Exam 1	0,25
Exam 2	0,5
Exam 3	0,5
Movie project	2,5
Group presentation	1,25
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/%
Exam 1	5/5
Exam 2	10/10
Exam 3	10/10
Movie Project	50/50
Group presentation	25/25
Total:	100

Description of assignments

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

Movie project promote students' practical involvement within the research of psychological disorders and character analysis

Required reading:

- Durand & Barlow (2013). Essentials of Abnormal Psychology, 6th ed.
- Sue, Sue, Sue, & Sue (2013). Foundations of Abnormal Behavior, 10th ed.
- Selection of readings from various sources on MyCourses. I will also direct you to possible resources available through the Wallace Library at RIT.
- APA Monitor Journal – monthly edition
- Other sources will be advised for use through Wallace Library at RIT and additional readings from various sources will be 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:	Positive Psychology
Course leader:	Ana Havelka Meštrović
Study programme:	Cybersecurity
Course status:	Elective
Year:	Third
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

This course will provide a survey of the emerging field of Positive Psychology. Topics covered will include defining and assessing “the good life”; the relationships between life satisfaction and personal factors such as wealth, education, and longevity; cross-cultural perspectives; virtues and strengths; and biological factors (i.e., genetics and neurological correlates). The focus will be on contemporary empirical psychology literature, though the course will also draw on literature from historical, philosophical, and economic disciplines.

Course objectives:

- Obtain new knowledge about Positive Psychology.
- Understand the concept of positive psychology, i.e. well being
- Examine prosocial and altruistic behaviour
- Develop a critical understanding of resilience and optimism
- To have better understanding about subjective well being, happiness and personal well

Conditions for enrolment in the course:

Prerequisite: PSYC-101 Introduction to Psychology

Expected learning outcomes of the course:

A student will be able to:

CLO 1: Identify the basic premises of Positive Psychology and different ways to measure happiness and wellbeing

CLO 2: Analyse the history of Positive Psychology and its relationship to traditional psychology

CLO 3: Interpret current theories in Positive Psychology (values, character strengths, flow, mindfulness)

CLO 4: Compose Positive Psychology interventions to increase personal well-being.

Course content:

- Introduction to positive psychology: history, key concepts
- Positive psychology and Martin Seligman
- Well being and happiness
- Resilience
- optimism theories
- Personal Growth
- Flow
- Positive education

Teaching delivery methods:

- Lectures
- Remote learning
- Project work
- Individual work

Student obligations:

- Attending classes

- Submitting projects and assignments
- Participate in discussions

Monitoring student work:

Activity	ECTS
Exam 1	1.0
Exam 2	1.0
Exam 3	1.0
Personal Exercise	1.25
Group presentation	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/%
Exam 1	20/20
Exam 2	20/20
Exam 3	20/20
APS's	25/25
Group presentation	15/15
Total:	100

Description of assignments

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

Personal Experiment promote students' practical involvement within the Social Psychology Sciences. Students need to design one social psychology experiment and test hypotheses on 10 colleagues.

Required reading:

1. Seligman M. 2001. Positive Psychology, 11th Ed, McGraw Hill

Additional reading:

- Materials from APA Monitor on Psychology (monthly edition)

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

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

General Information

Course title:	Intermediate French II
Course leader:	Tea Kovačević
Study programme:	Cybersecurity
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:

- Bravo!. Eight edition, Muyskens, Harlow, Vialet, Brière
- Bravo!, Student Activities Manual, , Muyskens, Harlow, Vialet, Brière

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/B1 B2 - Glaudivine, Lannier Muriel, Loiseau Yves, Didier, 2015
- Edito 2 (méthode de français et cahier d'activités) – Marie-Pierre Baylocq Sassoubre, Stéphanie Brémaud, Stefano Campopiano, Clara Cheilan, Erwan Dambrine, Cécile Pinson, Didier, 2016
- Génération B1 (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 II
Course leader:	Nikolina Božinović
Study programme:	Cybersecurity
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.

Additional reading:

- 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.
- Langenscheidt Großwörterbuch Deutsch als Fremdsprache / PONS Großwörterbuch Deutsch als Fremdsprache or DWDS Website

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

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

General Information

Course title:	Intermediate Italian II
Course leader:	Zrinka Friganović Sain
Study programme:	Cybersecurity
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 Italian language and understand better all aspects of Italian culture, formal and informal.
- Practice formal language in written and oral form as well as cultural behavior in professional environment.
- Engage students in complex communication activities, contemporary texts, and more advanced study of vocabulary and grammar to further develop all four language skills, especially oral proficiency.
- Study and critically evaluate different aspects of contemporary Italian life and culture.

Conditions for enrolment in the course:

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

Expected learning outcomes of the course:

A student will be able to:

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

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

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

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

Course content:

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

Teaching delivery methods:

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

Student obligations:

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

Monitoring student work:

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

Teaching time has been incorporated in time for assignments.

Assessment and evaluation of student work

Components of evaluation:

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

Required reading:

Pelizza, G. & Mezzadri, M. (2015). Un vero affare! Corso di italiano per gli affari. Bonacci editore. Torino.

Cherubini, N. (2015). L'italiano per gli affari: Corso comunicativo di lingua e cultura aziendale. Bonacci editore. Roma.

Cini, L. (2015). Strategie di scrittura: Quaderno di scrittura. Livello intermedio. Bonacci editore, Roma.

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

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

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

Tognozzi, E. & Cavatorta, G. (2013). Ponti: italiano terzo millennio. Student Activities Manual.

3rd edition. Heinle Cengage Learning. Boston. MA. United States.

Additional reading:

Manella, C. (2010). Ecco! Grammatica Italiana. 12th edition. Progetto Lingua, Firenze.

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

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

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

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

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

comprensione orale, ALMA Edizioni, Firenze.

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

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

General Information

Course title:	Intermediate Spanish II
Course leader:	Barbara Perić
Study programme:	Cybersecurity
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.
- Hershberger, R., Navey-Davis, S. & Borrás Álvarez, G. (2016). *Plazas, Lugar de encuentros* (5th ed.), Heinle 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:	CSEC COOPERATIVE EDUCATION 2
Course leader:	Irena Guszak
Study programme:	Cybersecurity
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 Cybersecurity 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:

Completed CSEC cooperative education 1

Expected learning outcomes of the course:

A student will be able to:

- CLO1:** Apply the relevant ethical principles and work-environment behaviors within the co-op position and organization.
- CLO2:** Propose solutions to challenges within the area of co-op specialization.
- CLO3:** Integrate the creation and communication of the professional content in oral and written forms.
- CLO4:** Utilize appropriate tools, methods and techniques used in the co-op tasks or projects.

Course content:

Co-op documentation

- Registration & offer letter
- Reports
- Evaluations

Field work

Teaching delivery methods:

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

Student obligations:

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

Monitoring student work:

Activity	ECTS
Mentored fieldwork	11.7
Co-op evaluation reports	0.3
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

General Information

Course title:	Cyber Security Policy and Law
Course leader:	Branko Mihaljević
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	Fourth
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

Course objectives:

- Compare cybersecurity laws and policies from the EU, US, and UAE/GCC.
- Examine how social, political, and legal factors affect cybersecurity challenges.
- Perform a needs assessment in preparation for writing security policies.
- Analyze EU directives and certification schemes (NIS2, CSA, EUCC, EUCS) and their impact on policy and compliance.

Conditions for enrolment in the course:

None.

Expected learning outcomes of the course:

A student will be able to:

- L01:** Compare cybersecurity laws and policies from the EU, US, and UAE/GCC..
- L02:** Evaluate how social, political, and legal factors influence cybersecurity challenges and compliance requirements.
- L03:** Assess the impact of market incentives and regulatory obligations on security policies and technical protection mechanisms.
- L04:** Evaluate international norms and EU directives (e.g., NIS2) in promoting global cooperation and organizational accountability.
- L05:** Evaluate international norms on cybersecurity and their effectiveness in promoting global cooperation.

Course content:

6.1 Policies

- Need, Implementation and Use
- Systems Policies
- Network Policies
- Electronic Communication Policies
- Software Policies
- Host Policies
- Perimeter Control Policies
- Physical Security Policies
- Acceptable Use
- Remote Access
- Information Protection

6.2 Trust

- Models
- People versus Resources

6.3 Standards Mandates and Laws

- ISO Standards
- HIPAA
- NIST Security Standards
- ISF Standard of Good Practice for Information Security
- Sarbanes–Oxley (SOX)
- Applicable EU laws (**including NIS2 Directive**)
- Other laws and precedent
- Implementation
- **EU Cybersecurity Act (CSA) and ENISA schemes (EUCC, EUCS, EU5G)**
- Certification
- Enforcement

6.4 Design

- Development Team
- Assessment (Business Needs, User Needs, Laws, Standards)
- Awareness

6.5 Incident Response

- Response team
- Investigation
- Information Release (**including NIS2 incident reporting obligations**)

6.6 Disaster Recovery

- Backup
- Off-site storage
- Media

6.7 Evolving Policies, Standards and Mandates

Teaching delivery methods:

- Lectures
- Guest Lectures
- Demonstration of practical assignments
- Projects

Student obligations:

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

Monitoring student work:

Activity	ECTS
Midterm Exam	1.8
Final Exam	1.8
Quizzes	0.6
Project	1.8
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:

Sastavnica	Bodovi/%
Midterm Exam	30
Final Exam	30
Quizzes	10
Project	30
Total	100

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

- Landoll, D. J. (2016). Information Security Policies, Procedures, and Standards: A Practitioner's Reference (1st ed.). CRC Press.
- IETF. (n.d.). RFC 2196 – Site Security Handbook. Retrieved from: <http://www.ietf.org/rfc/rfc2196.txt>
- ENISA. EUCC: Candidate EU Cybersecurity Certification Scheme. (latest version, available on ENISA website).
- European Commission. Directive (EU) 2022/2555 (NIS2 Directive). Official Journal of the EU.

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

- Dreyfus, S. (n.d.). Underground. Retrieved from: <http://www.gutenberg.org/ebooks/4686>
- ENISA. EUCS: Cloud Services Cybersecurity Certification Scheme. (drafts and updates available on ENISA portal).
- ENISA. EU5G Cybersecurity Certification Scheme. (candidate scheme materials).
- European Union Agency for Cybersecurity (ENISA). Guidelines, reports, and whitepapers on the EU Cybersecurity Act.
- Academic and professional articles on GDPR audits, ISO/IEC 27001 compliance, and NIS2 enforcement (distributed via MyCourses).

Additional Resources

- EU Law Portal: <https://eur-lex.europa.eu> (for up-to-date directives, regulations, and acts).
- ENISA Certification Portal: <https://certification.enisa.europa.eu>.
- RIT Croatia's online library (The Wallace Center) for supplementary readings.

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:

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

General Information

Course title:	Risk Management for Information Security
Course leader:	Branko Mihaljević
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	Fourth
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

Course objectives:

- Introduce principles of risk management and its three key components: risk analysis, risk assessment, and vulnerability assessment.
- Teach quantitative and qualitative assessment methodologies.
- Develop ability to design and apply security metrics.
- Strengthen teamwork and communication skills through case study analyses.
- Enable students to assess and mitigate cybersecurity risks effectively.

Conditions for enrolment in the course:

CSEC-101 or CSEC-102 or CSEC-140 or equivalent course and at least 3rd year standing

Expected learning outcomes of the course:

A student will be able to:

LO1: Analyze risk management principles and elements for a context-specific framework.

LO2: Evaluate threats and quantified risks for a prioritized control selection.

LO3: Appraise cost–benefit and business impact analyses for evidence-based treatment options.

LO4: Design security metrics with defined data sources, thresholds, and cadence.

LO5: Create an executive-grade risk assessment report with recommendations and an implementation roadmap.

Course content:

- Risk management overview (purpose, scope, stakeholders)
- Risk identification (assets, threats, vulnerabilities)
- Risk assessment (likelihood, impact, risk rating)
- Quantitative vs. qualitative techniques (e.g., ALE, matrices, scoring)
- Defining information security metrics (KPIs/KRIs)
- Automating and monitoring metrics (calculations, tools, dashboards)
- Risk treatment and mitigation planning (avoid, reduce, transfer, accept)
- Evaluation and continuous improvement (review, reassess, report)

Teaching delivery methods:

- Lectures
- Team-based case studies
- Group projects and oral presentations

Student obligations:

- Attending classes
- Submitting assignments
- Participate in discussions

Monitoring student work:

Activity	ECTS
Case study analysis	0.6
Team risk assessment plan (scoping, methodology)	1.2
Midterm presentation (threats, risk rating, treatment options)	0.9
Metrics design assignment (KPIs/KRIs with thresholds)	0.9
Final risk assessment report (complete, evidence-based)	1.5
Final presentation (executive briefing)	0.6
Quizzes	0.3

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/%
Case study analysis	10
Team risk assessment plan (scoping, methodology)	20
Midterm presentation (threats, risk rating, treatment options)	15
Metrics design assignment (KPIs/KRIs with thresholds)	15
Final risk assessment report (complete, evidence-based)	25
Final presentation (executive briefing)	10
Quizzes	5
Total	100

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

- Landoll, D. J. (2021). The security risk assessment handbook (3rd ed.). CRC Press.
- Brumfield, C., & Haugli, B. (2021). Cybersecurity risk management. Wiley.

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

- Hubbard, D. W., & Seiersen, R. (2023). How to measure anything in cybersecurity risk (2nd ed.). Wiley. — Best practical guide to quantifying uncertainty and “intangibles” in cyber risk

- European Parliament and the Council of the European Union. (2022). *Directive (EU) 2022/2555 of the European Parliament and of the Council of 14 December 2022 on measures for a high common level of cybersecurity across the Union, amending Regulation (EU) No 910/2014 and Directive (EU) 2018/1972, and repealing Directive (EU) 2016/1148 (NIS 2)*. *Official Journal of the European Union*, L 333, 80–152
- European Parliament and the Council of the European Union. (2022). Regulation (EU) 2022/2554 of the European Parliament and of the Council of 14 December 2022 on digital operational resilience for the financial sector, and amending Regulations (EC) No 1060/2009, (EU) No 648/2012, (EU) No 600/2014, (EU) No 909/2014 and (EU) 2016/1011 (DORA). *Official Journal of the European Union*, L 333, 1–79.
- European Parliament and the Council of the European Union. (2022). Directive (EU) 2022/2557 of the European Parliament and of the Council of 14 December 2022 on the resilience of critical entities and repealing Council Directive 2008/114/EC (CER). *Official Journal of the European Union*, L 333, 164–198..
- International Organization for Standardization. (2022). ISO/IEC 27005:2022 Information security, cybersecurity and privacy protection—Guidance on managing information security risks. ISO.
- International Organization for Standardization. (2022). ISO/IEC 27001:2022 Information security, cybersecurity and privacy protection—Information security management systems—Requirements. ISO.
- European Union Agency for Cybersecurity. (2024). *ENISA Threat Landscape 2024*. .

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:	Cyber Analytics and Machine Learning
Course leader:	Domagoj Tolić
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	Fourth
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

Course objectives:

- Explore methods and applications in cyber analytics using advanced machine learning algorithms, including deep learning.
- Apply machine learning techniques to solve cybersecurity challenges, such as network security, anomaly detection, and malware analysis.
- Understand and explain foundational concepts and algorithms in machine learning, including clustering, neural networks, and adversarial machine learning.
- Implement machine learning models to address real-world cybersecurity problems.
- Analyze the effectiveness of various machine learning approaches in cybersecurity contexts.

Conditions for enrolment in the course:

MATH-190 Discrete Mathematics for Computing and STAT-257 Statistical Inference and MATH-251 Probability and Statistics I and at least 4th year standing

Expected learning outcomes of the course:

A student will be able to:

L01: Analyze basic concepts and algorithms of machine learning and deep learning.

L02: Evaluate appropriate machine learning algorithms to solve complex computing security problems.

L03: Develop an original solution for computing security problems using machine learning.

L04: Evaluate existing machine learning solutions for computing security problems.

Course content:

- Fundamentals of Machine Learning and Deep Learning
 - Clustering and Classification
 - Neural Nets and Deep Learning
- ML for Anomaly Detection
 - Host intrusion detection
 - Network intrusion detection
 - Web app intrusion detection
- ML for Malware Analysis
 - Malware classification
 - Botnet traffic detection
- ML for Network Traffic Analysis
 - Network attack classification
- Adversarial Machine Learning
 - Security vulnerabilities in machine learning algorithms
 - Model Poisoning
 - Evasion attack

Teaching delivery methods:

- Lectures
- Guest Lectures
- Demonstration of practical assignments
- Group project

Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions
- Presenting and advocating their work

Monitoring student work:

Activity	ECTS
Midterm Exam	1.2
Final Exam	1.5
Homeworks	1.2
Project	1.8
Class Activities	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/%
Midterm Exam	20
Final Exam	25
Homeworks	20
Project	30
Class Activities	5

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

- Saxe, J., & Sanders, H. (2018). Malware data science: Attack detection and attribution. No Starch Press. ASIN: B077X1V9SY

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

- Chio, C., & Freeman, D. (2018). Machine learning and security: Protecting systems with data and algorithms. O'Reilly Media. ISBN-10: 1491979909, ISBN-13: 978-1491979907
- Stamp, M. (2017). Introduction to machine learning with applications in information security. Chapman & Hall/CRC. ISBN-10: 1138626783, ISBN-13: 978-1138626782

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 through homeworks and exams

General Information

Course title:	Network Security and Forensics
Course leader:	Bruno Valić
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	Fourth
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

Course objectives:

- Investigate the fundamental aspects of network security and forensics.
- Examine the principles and practices of intrusion detection systems.
- Analyze methods for evidence collection in network environments.
- Evaluate techniques for conducting network audits and assessments.
- Design and implement comprehensive network security policies.
- Prepare for and defend against potential network attacks.
- Explore the tools and methods used by both intruders and network administrators.
- Demonstrate the impact of network security measures through hands-on laboratory exercises.

Conditions for enrolment in the course:

NSSA-245 Network Services, and CSEC-140 Introduction to Cybersecurity

Expected learning outcomes of the course:

A student will be able to:

L01: Evaluate network architecture issues affecting security.

L02: Develop strategies to assess and address network security issues using various tools.

L03: Analyze the attributes associated with network security intrusion and techniques for tracking/stopping intruders.

L04: Assess various network monitoring solutions and their associated challenges.

Course content:

- Secure Data Network Operations
- Secure Data Network Architectures
- Information Security Model
- Data Network Security Policies
- Survey of Common Security Lapses
- Taxonomy of Security Breaches
- Examination of Tools for Data Network Security Monitoring, Forensics, and Auditing
- Network Monitoring Techniques and Practices
- Wired Network Forensics Techniques and Practices

Teaching delivery methods:

- Lectures
- Guest Lectures
- Homework assignments
- Demonstration of practical assignments

Student obligations:

- Attending classes
- Submitting assignments
- Participate in discussions

Monitoring student work:

Activity	ECTS
Homework	2.4

Midterm 1.8

Final Exam 1.8

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 Exam	30
Midterm	30
Total	100

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

- Forshaw, C. (2018). Attacking network protocols: A hacker's guide to capture, analysis, and exploitation. No Starch Press.
- Sanders, C. (2014). Applied network security monitoring: Collection, detection, and analysis. Syngress.

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

- Davidoff, S., & Ham, J. (2012). Network forensics: Tracking hackers through cyberspace. Prentice Hall.

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 through homeworks and exams

General Information

Course title:	Capstone in Computing Security
Course leader:	Martin Žagar
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	Fourth
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

Course objectives:

- Review short modules on teamwork, project management, report writing, and presentations.
- Apply knowledge and skills in real-world cybersecurity projects.
- Perform security analysis of systems, networks, software, and policies.
- Devise and implement security solutions in real-world applications.
- Collaborate effectively in teams to address complex cybersecurity challenges.

Conditions for enrolment in the course:

4th year standing

Expected learning outcomes of the course:

A student will be able to:

- LO1:** Analyze security needs for real world applications.
- LO2:** Devise security solutions for real world applications.
- LO3:** Implement security solutions effectively in a team.
- LO4:** Test security implementations for vulnerabilities and possible exploitations.
- LO5:** Communicate effectively with users and upper management.

Course content:

This is a capstone course for the BS students in the Cybersecurity program. Students will review modules on topics such as teamwork, project management, report writing, and presentations, and will work in a team to apply your knowledge and skills to a real-world project. Projects may require performing security analysis of systems, networks, software, etc.; and devising and implementing security solutions in real-world applications.

Teaching delivery methods:

- Lectures
- Independent work
- Project work

Student obligations:

- Attending classes
- Submitting assignments
- Participate in discussions

Monitoring student work:

Activity	ECTS
Review Modules Quizzes	0.48
Progress Report #1	0.3
Project Report Draft #1	0.6
Progress Report #2	0.3
Project Report Draft #2	0.72
Presentation	1.2
Project Report Final	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/%
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Review Modules Quizzes	8
Progress Report #1	5
Project Report Draft #1	10
Progress Report #2	5
Project Report Draft #2	12
Presentation	20
Project Report Final	40
Total:	100

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

- 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 (at the moment of submitting the Study Programme Report):

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:	Cyber Defense Techniques
Course leader:	Mladen Jurković
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	Fourth
ECTS points:	6
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

Course objectives:

- Analyze business needs and constraints to guide secure system and network design.
- Design and document secure infrastructure and hardening baselines.
- Operate and maintain systems securely under real-world attack conditions.
- Evaluate vulnerabilities and prioritize practical mitigations.
- Create and use incident response playbooks; deliver after-action reviews.
- Plan and test backup, recovery, and resilience strategies.
- Apply risk and project management to coordinate team defense and communicate results.

Conditions for enrolment in the course:

4th year standing

Expected learning outcomes of the course:

A student will be able to:

- LO1:** Analyze enterprise and network architectures for defensive requirements and secure design.
- LO2:** Evaluate vulnerabilities and incidents with prioritized mitigations and response.

LO3: Design hardening baselines, logging/monitoring, and secure configurations aligned with benchmarks.

LO4: Create incident response playbooks and blue-team procedures for live attack scenarios.

LO5: Assess backup, recovery, and resilience strategies for sustained operations under attack.

Course content:

- Auditing
- Designing a secure infrastructure
- System & network operation
- System & network hardening
- Vulnerability detection and manipulation
- Vulnerability mitigation
- Project management and effective team communication
- System sustainment through backups, redundancy and resiliency
- Incident response
- Risk management

Teaching delivery methods:

- Studio-style sessions with live Red/Blue/Grey team exercises using virtualization infrastructure.
- Short lectures + guided labs-in-studio; team drills; incident simulations.

Student obligations:

- Attend studio sessions and team exercises.
- Contribute to blue-team operations, artifacts, and after-action reviews.
- Submit technical artifacts (configs, baselines, IR playbooks) and briefings.

Monitoring student work:

Activity	ECTS
Hardening baseline	0.9
Vulnerability assessment	1.2
Midterm IR mini-playbook + AAR	0.9

Final live-exercise defense	1.2
Final AAR executive briefing	1.5
Quizzes	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/%
Hardening baseline (config + evidence)	15
Vulnerability assessment & mitigation plan	20
Midterm IR mini-playbook + AAR	15
Final live-exercise defense (tech performance)	20
Final AAR executive briefing (report + oral)	25
Quizzes	5
Total:	100

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

- ISO/IEC 27001:2022 — Information security management systems — Requirements
- ISO/IEC 27002:2022 — Information security controls
- ISO/IEC 27035-1:2023 — Information security incident management — Principles
- Directive (EU) 2022/2555 (NIS2) — Network and Information Security Directive
- ENISA Threat Landscape 2024

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

- ISO/IEC 27005:2022 — Information security risk management
- ENISA — NIS2 Technical Implementation Guidance (latest)
- ENISA — Best Practices for Cyber Crisis Management (latest)

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 or online.

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 Security and Privacy
Course leader:	Branko Mihaljević
Study programme:	Cybersecurity
Course status:	Obligatory
Year:	Fourth
ECTS points:	5
Teaching hours (L+S+E):	45 (3+0+0)

Course Description

Course objectives:

- Examine policies, methods, and mechanisms for securing enterprise and personal data.
- Analyze concepts related to data integrity and confidentiality.
- Evaluate various access control models and their effectiveness.
- Design secure database architectures and transaction processing systems.
- Implement information flow, aggregation, and inference controls.
- Conduct auditing procedures to ensure data security.
- Secure data within contemporary database systems, including relational, XML, and NoSQL databases.
- Address data privacy issues and understand legal and ethical considerations in data protection.
- Develop and complete programming projects that apply security principles and practices.

Conditions for enrolment in the course:

4th year standing

Expected learning outcomes of the course:

A student will be able to:

- L01:** Formulate principles, policies, and mechanisms for efficient secure data management.
- L02:** Develop a secure data management application using a contemporary database system.
- L03:** Investigate active areas of research in data security and privacy.
- L04:** Analyze legal and ethical issues underlying data security and privacy.

Course content:

- Introduction to secure data management, and data privacy.
- Overview of data breaches.
- Principles of general security and privacy, with focus on data management issues.
- Data access control (discretionary, mandatory, role-based, and others).
- Data integrity models and mechanisms.
- Information flows, aggregation, and inference mechanisms.
- Data privacy.
- Cryptographic and other techniques for achieving privacy.
- Auditing approaches and architectures for data security and privacy.
- Secure transaction processing.
- Security and privacy in relational database systems.
- Security and privacy in non-relational (XML, NoSQL, etc.) databases systems.
- Privacy preserving data mining.
- Legal and ethical issues.
- Research directions in data security and privacy.

Teaching delivery methods:

- Lectures
- Guest Lectures
- Demonstration of practical assignments

Student obligations:

- Attending classes
- Submitting projects and assignments
- Participating in discussions
- Presenting and advocating their work

Monitoring student work:

Activity	ECTS
Midterm Exam	1.2
Final Exam	1.5
Homeworks	1.2
Project	1.8
Class Activities	0.3
Total	6

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

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

Component	Points/%
Midterm Exam	20
Final Exam	25
Homework	20
Projects	30
Class Activities	5
Total	100

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

- Ben-Natan, R. (2005). Implementing database security and auditing. Elsevier Digital Press.
- Litchfield, D. (2007). The Oracle hacker's handbook: Hacking and defending Oracle. Wiley.

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

- Verizon. (2024). Data breach investigations report (DBIR). [This report is updated annually.]
- Diaz, C. (2022). Database security: Problems and solutions (1st ed.). Mercury Learning & Information.
- Danturthi, R. S. (2024). Database and application security: A practitioner's guide. Addison-Wesley Professional.
- Current research papers and industry reports identified by the instructor.

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 through homeworks and exams