

KODOLANYI JANOS UNIVERSITY

PROGRAM DESCRIPTION

BPROF IN

COMPUTER SCIENCE OPERATIONAL ENGINEERING

Intended Learning Outcomes in BPROF in Computer Science Operational Engineering (ILO)

Outcomes of the Program	
1. Knowledge	
1.1.	Graduates are familiar with and understand/support (IT) global, international, regional- including- European political, legal, economic and civilizational knowledge areas, and external environment.
1.2.	<i>Supporting (IT) of multilateral political practices:</i> international systems, regional systems, main actors: states, IGOs, INGOs, knowledge organizations, multilateral diplomacy practices
1.3.	The degree program is expected to provide a broad, analytical, and highly integrated study of computer sciences, its comprehensive terms, concerning national and international requirements, relevant actors, functions, and processes.
1.4.	They are familiar with appropriate theories and practices, and engaged with basic information gathering, mathematical and statistical, AI analysis methods.
1.5.	Graduates should be able to demonstrate relevant knowledge and understanding/supporting (IT) of organizations, the business environment in which they operate and their management. Programs emphasize understanding/supporting (IT), responding and shaping the dynamic and changing nature of business and the consideration of the future of organizations within the global business environment including the management of risk.
1.6.	The business environment: this encompasses the fast pace of change within a wide range of factors, including economic, environmental, cultural, ethical, legal and regulatory, political, sociological, digital and technological, together with their effects at local, national and global levels upon the strategy, behavior, management and sustainability of organizations.
1.7.	Organizations: this encompasses the internal aspects, functions and processes/supports (IT) of organizations including their diverse nature, purposes, structures, size/scale, governance, operations and management, together with the individual and corporate behaviors and cultures which exist within and between different organizations and their influence upon the external environment.
1.8.	Management: this encompasses the various processes, procedures, and practices for effective management/support (IT) of organizations. It includes theories, models, frameworks, tasks, and roles of IT, including the management of people and corporate social responsibility, together with rational analysis/support and other processes of decision making/support within different organizations.
1.9.	Professional knowledge and understanding/supporting (IT) of business operations and services: <i>Supporting (IT) of Markets, marketing and sales:</i> the development, access and operation of markets for resources, goods and services, different

	<p>approaches for segmentation, targeting, positioning generating sales and the need for innovation in product and service design.</p> <p><i>Supporting (IT) of Customers:</i> management of customer expectations, relationships and development of service excellence.</p> <p><i>Supporting (IT) of Finance:</i> the sources, uses and management of finance and the use of accounting and other information systems for planning, control, decision making and managing financial risk.</p> <p><i>Supporting (IT) of People:</i> leadership, management and development of people and organizations including the implications of the legal context.</p> <p><i>Supporting (IT) of Organizational behavior:</i> design, development of organizations, including cross-cultural issues, change, diversity and values.</p> <p><i>Supporting (IT) of Operations:</i> the management/support (IT) of resources, the supply chain, procurement, logistics, outsourcing and quality systems.</p> <p><i>Information systems and business intelligence:</i> the development, management, application and implementation of information systems and their impact upon organizations.</p> <p><i>Communications:</i> the comprehension and use of relevant communications for application in business and management, including the use of digital tools.</p> <p><i>Digital business:</i> the development of strategic priorities to deliver business at speed in an environment where digital technology has reshaped traditional revenue and business models.</p> <p><i>Supporting (IT) of Business policy and strategy:</i> the development of appropriate policies and strategies within a changing environment to meet stakeholder interests, and the use of risk management techniques and business continuity planning to help maximize achievement of strategic objectives.</p> <p><i>Supporting (IT) of Business innovation and enterprise development:</i> taking innovative business ideas to create new products, services or organizations including the identification of Intellectual Property and appreciation of its value.</p> <p><i>Supporting (IT) of Social responsibility:</i> the need for individuals and organizations to manage responsibly and behave ethically in relation to social, cultural, economic and environmental issues.</p>
2. Skills	
2.1.	The degree holder is capable of IT activity for enterprise, project planning, organizing, leading, and monitoring.
2.2.	It is capable of making/supporting (IT) decision preparatory reports and drawing decisions by using different theories, tools in routine and non-routine environment.
2.3.	It is capable of understanding/supporting (IT), analyzing adapting to relevant international business processes, functional policies, monitoring changing law environment.
2.4.	It is capable of understanding/supporting (IT) impacts of economic processes and organizational changes.
2.5.	It is capable of cooperation, working in teams, leading them, for cooperation I interdisciplinary projects.
2.6.	It is capable of leading IT-SMEs, or units in large corporations.

2.7.	It is capable of IT professional suggestions orally, in writing, in foreign languages by the professional business communication rules.
3. Business and IT competencies, behavior and attitudes	
3.1.	Capable of proactive behavior, resolving problems, for constructive behavior.
3.2.	Problem solving and critical analysis also in an automated way: analyzing facts and circumstances to determine the cause of a problem and identifying, and selecting appropriate solutions.
3.3.	Research: the ability to analyze and evaluate a range of business data, sources of information and appropriate methodologies, which includes the need for strong digital literacy, and to use that research for evidence-based decision-making.
3.4.	Commercial acumen: based on an awareness of the key drivers for business success, causes of failure and the importance of providing customer satisfaction and building customer loyalty.
3.5.	Innovation, quality management & creativity and enterprise: the ability to act entrepreneurially to generate, develop and communicate ideas, manage, and exploit intellectual property, gain support, and deliver successful outcomes.
3.6.	Numeracy: the use of quantitative skills to manipulate data, evaluate, estimate, and model business problems, functions, and phenomena.
3.7.	Networking: an awareness of the interpersonal skills of effective listening, negotiating, persuasion and presentation and their use in generating business contacts.
4. Generic competencies	
4.1.	Ability to work collaboratively both internally and with external customers and an awareness of mutual interdependence.
4.2.	Ability to work with people from a range of cultures.
4.3.	Building and maintaining relationships.
4.4.	Emotional intelligence and empathy.
4.5.	Conceptual and critical thinking, analysis, synthesis, and evaluation.
4.6.	Self-management: a readiness to accept responsibility and flexibility, to be resilient, self-starting and appropriately assertive, to plan, organize and manage time.
4.7.	Self-reflection: self-analysis and an awareness/sensitivity to diversity in terms of people and cultures. This includes a continuing appetite for development.

Rules of the credit allocation and conversion of grades

EQF Levels of the subject: secondary school education (level 4), vocational level of education/short cycle (level 5), bachelor's (level 6), master's (level 7), Doctorate, Ph.D. (level 8)

Functions of the subject: I: Introductory, C: Core compulsory, S: specialization, P: preparatory for the Master level

Types of the subject: Theoretical- Colloquia: T, Seminar (portfolio task): S, Mixed (colloquia and portfolio task): M; Practice (project/internship: PRI, work-based learning: WBL): PRI, WBL, L-skills-tests, and other measurement): L

Types of grades of different types of subject: T: 1-5; S 1-5; M: 1-5; PRI/WBL: passed, satisfactory, very good, excellent. S: passed, satisfactory, very good, excellent.

Transcript of grades:

Performance in %	Performance by value	Grading Hungarian	ECTS grading	USA grading	China grading	India grading	UK grading
90-100	Excellent	5/A	A	A	A	A	A
81-90	Very Good	4/B	B+	B+	B	B	A/B+
71-80	Satisfactory	3/C	B+	B+	C	C	B
51-70	Passed	2/D	C+	C+	D	D	B-
0-50	Failed	1/F	C	C	E	E	C
0-50	No credit	No credit			F	F	F

Module allocation by clusters of modules

Module title	Code of the subject	Title of the subject	Level of the subject	Type of the subject ⁴	Contact lessons+ working hours	ECTS	Semester of education
Preparatory modules		Basic computer and online skills	5th	L-T	15+120	5	0
		Application Skills	5th	L-T	60+120	10	0
		Webediting	5th	L-T	15+120	5	0
		English in Use (Grammar and Writing)	5th	L-T	30+120	5	0
		Communication Skills (Oral)	5th	L-T	30+120	5	0
		International Week		6th	PT	30+120	5
		Free Elective	6th			5	
Interdisciplinary Globalization studies and generic		Understanding Europe	6-I	M	30+120	5	1-2
		International Business Law and Regulations	6-C	M	30+120	5	3

⁴Theory (oral/written exam): T
Seminar (Portfolio tasks): S
Mixed (oral/written exam and Portfolio tasks):M
Practice (Projects/Internship): PRI
Work-based learning: WBL
Learning-skill-tests and other measurement: L

competencies modules		Introduction to mathematics	6-I	T	30+120	5	1-2
		Business Process Management	6-C	S	30+120	5	3-4
		Globalization and Social Problems	6-7-C	M	30+120	5	3
		Intercultural Communication	6-I	ST	30+120	5	1-2
		International week	6-S	PT	30+120	5	1-2
		Free Elective	6-7		30+120	5	1-2
BPROF module	IT						
For all specializations		Operation systems	6	M	30+120	5	1-6
		Networks and computer architectures	6	S	30+120	5	1-6
		Introduction to algorithms	6	S	30+120	5	1-6
		Introduction to programming	6	M	30+120	5	1-6
		Electronic circuits	6	S	30+120	5	1-6
		Introduction to electronics	6	T	30+120	5	1-6
		System modelling	6	S	30+120	5	1-6
		Data-visualization	6	S	30+120	5	1-6
		System planning	6	S	30+120	5	1-6
		Programming I	6	S	30+120	5	1-6
		Programming II	6	S	30+120	5	1-6
		Programming III	6	S	30+120	5	1-6
		Databases I	6	S	30+120	5	1-6
		Databases II	6	S	30+120	4	1-6
		System operation	6	S	30+120	5	1-6
		IT-security	6	S	30+120	5	1-6
		Software testing	6	S	30+120	4	1-6
		Software architectures	6	S	30+120	4	1-6
	Specialized Disciplinary Modules						
IT-security		ICT in the IT-security	6	S	30+120	5	1-6
		Project management and quality management in the IT-security projects	6	s	30+120	5	1-6

		Artificial intelligence in the IT-security	6	S	30+120	5	1-6
		Knowledge management in the IT-security	6	S	30+120	5	1-6
Agricultural informatics		ICT in the agriculture	6	S	30+120	5	1-6
		Project management and quality management in the agriculture	6	S	30+120	5	1-6
		Artificial intelligence in the agriculture	6	S	30+120	5	1-6
		Knowledge management in the agriculture	6	S	30+120	5	1-6
Compulsory projects		Group Project	6-PR	PRI	20+40		3-4
		Individual Project	6-PR	PRI	20+40		5-6
Voluntary service		Individual					3-4
Sport & cultural well-being for fitness		Every semester		PRI	20		1-6
Informal Curricula for Freshmen year (pre+first semester)		IT & Library competencies, professional resume writing, workplace learning-as student internship, or student job service, tuning for the profession		PRI			0-1
Informal Curricula for the Sophomore Year (2-3d semesters)		Group projects Career planning and exploring possible career path, workplace learning, voluntary jobs, personal brand development,		PR			2-3

		study tour Bronze package – visiting firms in KJU places					
Junior year 4-5th semesters		interdisciplinary group project, Erasmus mobility, Study tours for extra charges: Silver package - Hungary		PR			4-5
Senior year 6th semester		Erasmus internship mobility, Study tours for extra charges: Golden package - Europe		PR			6-7
Alumni program		Alumni CLUB		PR			

Contact lessons/semester	1st		2nd		3rd		4th		5th		6th	
30	Understanding Europe (M)	5	Electronic circuits (S)	5	International business law and regulations (M)	5	IT-security (S)	5	Specialization	5	Specialization	5
			Introduction to electronics (T.)	5			Databases II. (S)	5			Specialization	5
30	Introduction to mathematics (T)	5	System modelling (S)	5	Globalization and social problems (M)	5	Software testing (S)	5			Specialization	5
30	Introduction to algorithms (T)	5	Intercultural Communication (ST)	5	Databases I. (S)	5	Software architectures (S)	5				
30	Operation systems (T)	5	Programming I (S)	5	System operation (S)	5	Programming III. (S)	5				
30	Introduction to programming (S)	5			Programming II (S)	5	Business Process Management (S)	5				
30	Networks and computer architectures (S)	5	Data-visualization (S)	5	System planning (S)	5						
	Well-being services		Well-being services		Well-being services		Well-being services		Well-being services		Well-being services	
Interim Internship	Interim internship		Interim internship		Interim internship		Interim internship		Interim internship		Interim internship	
Internship, Thesis/ Portfolio									Internship	25	Thesis / Portfolio	15
ECTS	30		30		30		30		30		30	