SYLLABUS

1. Information about the program

1.1 Higher education institution	Politehnica University of Timisoara
1.2 Faculty[1] / Department[2]	Faculty of Automation and Computing / Department of Computer and Information Technology
1.3 Field of study (name/code[3])	Computer and Information Technology
1.4 Study cycle	Master
1.5 Study program (name/code/qualification)	Quantum Computing

2. Information about discipline

2.1 Name of discipline/The educational classe[4]			Research Topics in QC / DCAV				
2.2 Coordinator (holder) of course activities			Prof. Dr. habil. Eng. Mihai V. Micea				
2.3 Coordinator (holder) of applied activities[5]			N/A				
2.4 Year of study[6]	1	**2.5** Semester	1	**2.6** Type of evaluation	D	**2.7** Regime of discipline[7]	Di

3. Total estimated time (direct activities (fully assisted), partially assisted activities and unassisted activities[8])

3.1 Number of hours fully assisted/week	2 ,of which:	course	2	seminar/laboratory/project			
3.1* Total number of hours fully assisted/sem.	28 ,of which:	course	28	seminar/laboratory/project			
3.2 Number of on-line hours fully assisted/sem	16 ,of which:	course	16	seminar/laboratory/project			
3.3 Number of hours partially assisted/week	12 ,of which:	project, research	12	training		hours designing M.A. dissertation	
3.3* Number of hours partially assisted/ semester	168 ,of which:	project of research	168	training		hours designing M.A. dissertation	
3.4 Number of hours of unassisted activities/ week	2.07 ,of which:	Additional documentation in the library, on specialized electronic platforms, and on the field					0.57
		Study using a manual, course materials, bibliography and lecture notes					0.75
		Preparation of seminars/ laboratories, homework, assignments, portfolios, and essays					0.75
3.4* Total number of hours of unasssited asctivities/ semester	29 ,of which:	Additional documentation in the library, on specialized electronic platforms, and on the field					7.98
		Study using a manual, course materials, bibliography and lecture notes					10.5
		Preparation of seminars/ laboratories, homework, assignments, portfolios, and essays					10.5
3.5 Total hrs./week[9]	16.07						
3.5* Total hrs./semester	225						
3.6 No. of credits	9						

4. Prerequisites (where applicable)

4.1 Curriculum	• N/A

[1] The name of the faculty which manages the educational curriculum to which the discipline belongs
[2] The name of the department entrusted with the discipline, and to which the course coordinator/holder belongs.
[3] The code provided in HG - on the approval of the Nomenclature of fields and specializations / study programs, annually updated.
[4] The educational classes of disciplines are: thoroughgoing study discipline (DA), advanced knowledge discipline (DCAV), synthesis discipline (DS) or complementary discipline (DC).
[5] The applied activities refer to: seminar (S) / laboratory (L) / project (P) / practice/training (Pr).
[6] The year of study to which the discipline is provided in the curriculum .
[7] Discipline may have one of the following regimes: imposed discipline (DI) or compulsory discipline (DOb)-for the other fundamental fields of studies offered by UPT or optional discipline (DO).
[8] Within UPT, the number of hours from 3.1*, 3.2*,…,3.9* are obtained by multipling by 14 (weeks) the number of hours from 3.1, 3.2,…, 3.9.
[9] The total number of hours/week is obtained by summing up the number of hours from 3.1, 3.4 şi 3.8.

4.2 Competencies	• N/A

5. Conditions (where applicable)

5.1 of the course	• Medium size lecture room; • Lecture support: laptop, video projector, screen and whiteboard; • Internet connection.
5.2 to conduct practical activities	• N/A

6. Specific competencies acquired through this discipline

Specific competencies	• General competencies and skills needed to research and study specialized documentation and scientific papers in the field of information technology; • Learn the main types of scientific publications, as well as the requirements and the procedures of publishing scientific papers; • Learn the main topics and issues regarding intellectual property, professional ethics and scientific paper review process.
Professional competencies ascribed to the specific competencies	• Advanced knowledge of the main topics and problems in the field of quantum computing; • Knowledge of current technologies and ability to select and apply them in the development of quantum computing projects; • Combining knowledge from the area of computer and information technology, with skills to critically analyze and innovate, in order to research, design, optimize, implement and test specific methods and systems; • Development of techniques, technologies, methods and methodologies specific to computer systems, information technology and quantum computing.
Transversal competencies ascribed to the specific competencies	• Behaving honorably, responsibly and ethical, according to the law, to ensure problem solving; • Identifying, describing and executing the processes of project management, by fulfilling various roles within the team, and describing the results in the field of activity, in a clear and concise manner, verbal and in writing, using the Romanian language and an international language; • Proving action and initiative spirit to get current with the knowledge at professional, economic and management levels.

7. Objectives of the discipline (based on the grid of specific competemcies acquired)

7.1 The general objective of the discipline	• To provide detailed knowledge on scientific research in the field of advanced information technologies.
7.2 Specific objectives	• Students will gain general competencies and skills needed to research and study specialized documentation and scientific papers in the field of information technology; • Students will learn the main types of scientific publications, as well as the requirements and the procedures of publishing scientific papers; • Students will also learn the main topics and issues regarding intellectual property, professional ethics and scientific paper review process.

8. Content

8.1 Course	Number of hours	Of which online	Teaching methods
Research and study of specialized documentation and scientific papers in the field of advanced information technologies. Main types of scientific publications, the requirements and the procedures of publishing scientific papers. Main topics and issues regarding intellectual property, professional ethics and scientific paper review process.	28	16	Interactive lectures supported by PowerPoint presentations and video-projections, discussions, explanations and examples

	Bibliography[10] • State of the art journal and conference papers published recently in the field of advanced cloud computing and IoT. IEEE and ACM online digital libraries, available online. • P. Perry, "Research Tips of How to Get a PHd", Dublin City University, Ireland, 1995, available online. • J.W. Chinneck, "How to Organize your Thesis", Carleton University, Ottawa, Canada, 1999, available online. • M.V. Micea, "Ghid de redactare a lucrarii de diploma", Politehnica University of Timisoara, 2009, available online. • M.V. Micea, "Ghid de redactare a prezentarii proiectului de diploma", Politehnica University of Timisoara, 2012, available online. • M.V. Micea, "Intellectual Property: Course Support", Politehnica University of Timisoara, 2012, available online. • A.J. Smith, "The Task of the Referee", IEEE, 1990, available online.

8.2 Applied activities[11]	Number of hours	Of which online	Teaching methods
N/A			

	Bibliography[12] N/A

9. Coroboration of the content of the discipline with the expectations of the main representatives of the epistemic community, professional associations and employers in the field afferent to the program

- This course provides fundamental knowledge and skills, needed for scientific research and publishing in the fields of information technology. The content of the course has been developed based on similar courses at high profile universities in the world (Harvard University, Berkeley University, University of Conneticut, etc.), as well as on the partnership, common projects and direct discussions with the research departments of important companies in the automotive, telecommunication and multimedia fields in Timisoara (Nokia, Continental, Hella, Movidius/Intel, etc.).

10. Evaluation

[10] At least one title must belong to the department staff teaching the discipline, and at least one title must refer to a relevant work for the discipline, a national and international work that can be found in the UPT Library.
[11] The types of applied activities are those mentioned in 5. If the discipline containes more types of applied activities then they are marked, consecutively, in the table below. The type of activity will be marked distinctively under the form: „Seminar:", „Laboratory:", „Project:" and/or „Practice/Training:".
[12] At least one title must belong to the staff teaching the discipline.

Type of activity	**10.1** Evaluation criteria[13]	**10.2** Evaluation methods	**10.3** Share of the final grade
10.4 Course	• A review report submitted by each student on a selected scientific manuscript in the field of advanced information technology; • Attendance at course lectures and participation at discussions on the research topics in the field.	• Evaluation of the review report submitted by each student; • Attendance at course lectures is counted on as a bonus.	100%
10.5 Applied activities	**S:**		
	L:		
	P:		
	Pr:		
	Tc-R[14]:		
10.6 Minimum performance standard (minimum amount of knowledge necessary to pass the discipline and the way in which this knowledge is verified[15]			
• Knowledge of the main types of scientific publication, of the requirements and the main steps involved in the research and publication of scientific papers; • Knowledge of the main topics and issues regarding intellectual property, professional ethics and scientific paper review process.			

Date of completion	**Course coordinator (signature)**	**Coordinator of applied activities (signature)**
20.11.2023	Prof.dr.habil.ing. Mihai V. MICEA	
Head of Department (signature)	**Date of approval in the Faculty Council [16]**	**Dean (signature)**
Prof.dr.habil.ing. Mihai V. MICEA		Prof.dr.habil.ing. Marius MARCU

[13] The Syllabus must contain the evaluation method of the discipline, specifying the criteria, the metods and the forms of evaluation, as well as mentioning the share attached to these within the final mark. The evaluation criteria must correspond to all activities stipulated in the curriculum (course, seminar, laboratory, project), as well as to the methods of continuous assessment (homework, essays etc.)

[14] Tc-R= Homework-Reports

[15] For this point turn to "Ghid de completare a Fișei disciplinei" found at: http://www.upt.ro/img/files/2018-2019/calitate/Ghid_de_completare_fisa_disciplinei.pdf

[16] The approval is preceeded by discussing the study program's board's point of view with redgards to the syllabus.