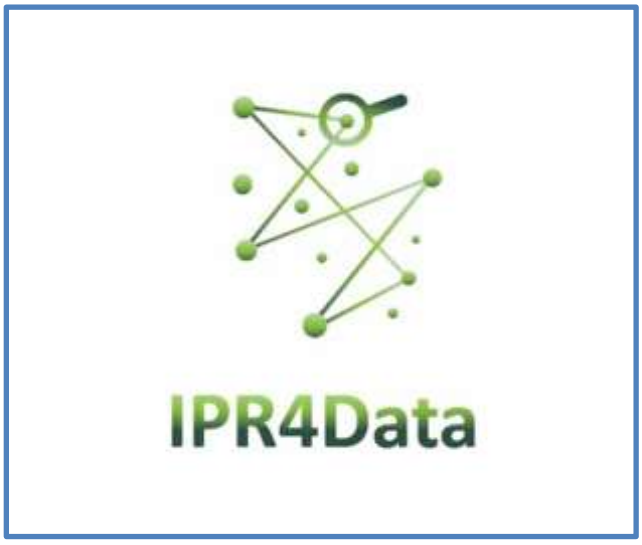
HELLENIC OPEN UNIVERSITY

Lifelong Learning Center

Programme Study Guide

«IPR4DATA »



PATRA, 2024

Table of Contents

A. General Information & Programme Description

Program Title: IPR4DATA

Total duration (in number of hours and number of weeks): 75/4

ECTS credits:3

Implementation Method and monitoring procedures:A. In distance

Thematic Field

1. Science and Technology x
2. Social Sciences x

Curricular Units of the Programme:

1. Unit Title 1 : Introduction to Patent Analysis
2. Unit Title 2 : Designing and Refining Search Queries and Tools for Patent Analysis
3. Unit Title 3: Data Management and Visualization
4. Unit Title 4: Interpreting Patent Analysis Results
5. Unit Title 5 : Assessment

Purpose and expected learning outcomes of the programme:

The IPR4Data Course is an expertly designed program aimed at providing participants with a thorough understanding of patent analysis. This course covers a comprehensive range of topics including the fundamentals of patent searches, the design and refinement of search queries, effective management and visualization of patent data, and the interpretation of analysis results to support strategic decisions.

The course is structured into several interdependent blocks, each focusing on a specific aspect of patent analysis. This modular approach ensures that each block is comprehensive enough to stand alone while following a logical sequence for optimal learning progression. The main course consists of four primary blocks that cover the essential pillars of patent data analysis: understanding what a patent is, designing search queries, using tools for patent analysis, and data visualization and interpretation. Additionally, an introductory block is available for beginners, along with add-on material for those who wish to delve deeper into more detailed topics.

The program is designed for a diverse audience, including professionals, students, and researchers in intellectual property and technology-driven fields. It caters to individuals with varying levels of knowledge, from beginners with no prior experience to those with foundational understanding seeking advanced skills. The training combines theoretical foundations with practical, hands-on experience through examples and workshops, ensuring participants can apply their learning in real-world scenarios.

By the end of the course, participants will be well-equipped with the skills necessary to conduct comprehensive patent searches, manage and visualize patent data, interpret analysis results, and support strategic business decisions, thus addressing the evolving needs of the labor market and preparing them for success in their respective fields.

The program will be provided by an international team of distinguished academics and instructors. The official language of the program is English.

Addressing Labor Market Needs

The training course is designed to address the evolving needs of the labour market, particularly in the fields of intellectual property and innovation management. As companies increasingly recognize the strategic importance of patents in securing competitive advantage and fostering innovation, the demand for skilled professionals in patent analysis has surged. This course aims to fill this gap by equipping participants with essential skills in patent searches, data management, and strategic decision-making. By providing comprehensive training that ranges from fundamental concepts to advanced analytical techniques, the program ensures that graduates are well-prepared to meet the demands of employers in technology-driven industries, legal firms, and research institutions.

Awareness of this data and the skills to interpret and exploit it allow for: understanding the current state of technology, enriching creative activities, understanding future trends, emerging trends, and identifying potential partners and competitors or potential licensors for technology transfer.

This can be leveraged by various entities, from innovative start-ups and technology transfer offices to students who can apply their knowledge as soon as they enter the job market.

The main priorities of the new EU Industrial Strategy (COM/2020/102 final) include maintaining the global competitiveness of European industry, Europe's goal of climate neutrality by 2050, and shaping Europe's digital future. It is also linked to understanding the Intellectual Property Action Plan to support the EU's recovery and resilience, which declares IP and IPR as supporting European innovation, enabling the EU to remain a global leader and facilitating Europe's digital and green transitions - thus making sustainability possible. One of the key vehicles for the latter is Circular Economy (CE) strategies. CE is considered essential for developing a sustainable, resource-efficient, and low-carbon Europe, while also offering significant business opportunities (EU Circular Economy Action Plan, 2020), reinforced by innovative solutions. The 'smart use' of IPR (COM(2020) 628 final) is therefore based on developing 'IPR for business' skills, while enhancing entrepreneurial, digital, and green qualifications.

Offered New Skills

Upon completion of the program, participants will have developed the skills to:

- *Understand Patents: Gain a thorough understanding of what patents are, their significance in intellectual property, and their role in fostering innovation.*
- *Conduct Patent Searches: Perform comprehensive patent searches using various databases and tools, ensuring accurate and relevant results.*
- *Design and Refine Queries: Design effective search queries and refine them for optimal precision in retrieving patent information.*
- *Manage Patent Data: Organize and manage large datasets of patent information efficiently.*
- *Visualize Patent Data: Be able to understand and use various techniques to visualize patent data, identifying trends, patterns, and insights.*
- *Interpret Analysis Results: Analyse and interpret patent data to derive meaningful conclusions that support strategic decisions.*
- *Apply Analytical Techniques: Apply analytical techniques to conduct in-depth patent analysis.*
- *Support Strategic Decisions: Leverage patent analysis to inform and support strategic business decisions, contributing to the organization's competitive advantage.*

- *Engage in Practical Application: Apply theoretical knowledge through hands-on workshops and real-world examples, ensuring practical expertise in patent analysis.*

This program is designed to cater to a diverse audience, including beginners and those with some foundational knowledge of patent analysis. By progressing through the program blocks, participants will build a solid foundation and advance to more complex analytical techniques, ensuring a comprehensive and practical learning experience that prepares them for success in the field of patent analysis.

Upon completion of the program, the trainee will have developed skills to:

- *Conduct comprehensive patent searches using various databases and tools.*
- *Design and refine search queries to yield accurate and relevant results.*
- *Manage and visualize patent data effectively for analysis.*
- *Interpret patent analysis results to inform and support strategic business decisions.*
- *Apply theoretical and methodological foundations to practical examples and case studies.*
- *Utilize advanced tools and techniques for in-depth patent analysis.*
- *Understand and navigate the fundamental concepts and processes involved in patent analysis.*
- *Leverage patent data to support innovation and competitive strategy within their organizations.*

***Whom the project is aimed at**:*

This training program is designed for a diverse audience, including professionals, students, and researchers involved in intellectual property, innovation management, and technology-driven fields. It is particularly beneficial for those working in legal firms, corporate R&D departments, and research institutions who need to enhance their skills in patent analysis. The course caters to both beginners with no prior knowledge of patent data analysis and individuals with some foundational understanding looking to deepen their expertise. The modular structure allows participants to progress from basic concepts to advanced analytical techniques, ensuring a comprehensive learning experience tailored to varying levels of experience and professional needs. By equipping participants with the necessary skills to conduct thorough patent searches, manage and visualize data, and support strategic decisions, this program prepares them to meet the growing demands of employers in an increasingly innovation-focused market.

Details of the Scientific Director

Full Name: Achilles D. Kameas

Title: Professor

Email of Scientific Officer: Kameas@eap.gr

Department: Hellenic Open University

School: School of Science and Technology (SST)

Full curriculum vitae of the Scientific Director:**http://daissy.eap.gr/resume/kameas/**

Short CV of the Scientific Director

Achilles D. Kameas

Professor of Pervasive Systems and Director of the MSc course "Pervasive and Mobile Computing Systems" at HOU, he serves as the Deputy Dean of the School of Science & Technology and as Director of the Ubiquitous and Mobile Computing, Quality and Ambient Intelligence Laboratory, thus providing the opportunity to directly apply project results to existing curricula or create new ones (especially short VET courses). Valuable insights on skills practices, frameworks and methodologies stem from his participation in numerous boards and committees (Chair of the Board of ALL DIGITAL European network (20192021); member of the ESCO Reference Group on ICT Services, the CEN PC428 on e-competences and ICT professionalism, the CEPIS IT Professionalism in Europe, the EADTU Course & Curriculum pool of experts; the ELOT Standardization Committee on Smart Cities. He has participated in more than 60 EU and national R&D projects (coordinated more than 10 of them) in FP5, FP6, FP7, H2020, Lifelong Learning, Erasmus+, AMIF and other frameworks. He has contributed to the formation and standardization of EN 16234 (eCompetence Framework), the evaluation of DigComp 2.1 and the adaptation in Greece of ISO 37101 on Smart and Sustainable Cities.

Teachers

Brief CV of tutor 1

Aris Anagnostakis, Lecturer in Digital Economy

Aris Anagnostakis is a Lecturer in Digital Economy and Decentralized Finance at the Economics and Administrative Sciences School, and fellow at the department of Informatics and Telecommunications, at the University of Ioannina, Greece. His first degree being the Diploma on Computer Engineering, he holds an MSc on Computer Science and Technology (former scholar at the University of Patras), and PhD on Blockchain and Distributed Systems. He has been the project owner and technical coordinator of more than 20 national and international Research and Development projects for several high-profile R&D institutes in Greece, including among others the Foundation for Research and Technology – HELLAS (FORTH), the Research Academic Computer Technology Institute (CTI), the Biomedical Research Institute (FORTH), and the Epirus Center of Mixed and Augmented Reality (EPIRUS XR-CENTER). He bears significant hands-on experience on Innovation and Entrepreneurship in practice as a scientific advisor to technology startups and has participated actively as contributor - keynote speaker on several Innovation, Technology Transfer and Sustainable Development networking events and Projects over the past years. His current research interests focus on the achievement of fully distributed consensus over autonomous systems, for which he has published in high impact scientific Journals (such as the IEEE IoTJ - 4*eq.). He is also an active reviewer on high impact scientific journals and publications, participating in organizing committees and chairing in sessions on high-validity international scientific conferences.

Brief CV of tutor 2

Dimitrios Dimopoulos

Graduate of the Department of Physics of the University of Ioannina. Ph.D. degree from the Medical School of the University of Ioannina. His main research interests are in the fields of Biomedical Technology, Human Walking Analysis, Medical Software and Systems Development. Member of the scientific team for the development, calibration and operation of the Ariel Dynamics 3D Motion Analysis System (APAS) at the Kinesiology Laboratory of Medical Physics of the University of Ioannina. Participation in many research projects in the field of New Technologies and Biomedical Technology. Autonomous teaching of Biomedical Technology, Medical Informatics, Microelectronics, Signal Processing, etc. at the level of Lecturer, Scientific Associate and Academic Scholar at TEI of Epirus and the University of Ioannina. His research work consists of more than 30 scientific publications in international scientific journals and conferences.

Brief CV of tutor 3

Nikolaos Giannakeas, Associate Professor in Bioinformatics

Nikolaos Giannakeas received degree in physics from the University of Ioannina, Greece, degree in computer science from Hellenic Open University, Greece, and the Ph.D. Diploma in the field of bioinformatics from the Medical School, University of Ioannina. He has worked for more than 15 years in research projects funded by National and European Programs (3rd CSF, NSRF 2007–2013, NSRF 2014–2020, FP6, FP7, and Horizon 2020). Since 2019, he is an Assistant Professor at the Informatics and Telecommunications Department, University of Ioannina. His research interests include signal processing and image analysis, artificial intelligence and machine learning, bioinformatics, and biomedical engineering. He has published more than 160 articles in scientific journals, international conference proceedings, and scientific books chapters.

Brief CV of tutor 4

Dolores Modic, Associate Professor in Innovation and Management

Dolores Modic is an Associate Professor in Innovation and Management at Nord University Business School, Steinkjer, Norway, in the Innovation and Entrepreneurship division. She is also a Senior Research Fellow at Rudolfovo - scientific and technological centre Novo Mesto, where she is the leader of the research group Center for technology transfer and intellectual property. Previously, she has been a Fulbright Scholar in the US at UNC Chapel Hill (2015), and the JSPS Research Fellow at Kyushu University in Japan (2016-2018). Dolores has published in leading scientific journals in innovation and management (including journals like Research Policy – AJG 4). She is also an ad hoc reviewer for several top tier journals such as Journal of Technology Transfer, and Journal of Business Research. Dolores has participated in more than 15 projects (sponsored by agencies in Europe, USA and Asia), with various roles (authoring, PI, WP leader, etc.), including on projects related to intellectual property, university technology transfer, digital innovation, circular economy and patent informatics. She is also currently a WP leader in two circular economy related European multi-national projects: Development of Circular Public Procurement for establishment of Material Local Loops (NoviKrog) and a project on IP skills for circular economy (IPR4SC), as well as several other international and national*

projects related to circular economy and sustainability. She also teaches several circular economy courses, from BA to PhD level.

Brief CV of tutor 5

Rannveig Edda Hjaltadottir, Associate Professor in Innovation

Rannveig Edda is an Associate Professor in Innovation at the Center for Industrial Business Development, Nord University Business School, Mo I Rana, Norway, Department of Innovation and Entrepreneurship. She is also a researcher II at Norland Research Institute in Norway and a member of a research group on sustainable transition. Rannveig's research focuses on innovation and Circular Economy in businesses and at a regional level. She has published her work in high-impact journals (Journal of Cleaner Production, European Planning Studies) and is a reviewer for leading journals dealing with regional economics. Rannveig has participated as a researcher and WP leader in five international projects and is currently involved in two European-funded international research projects (IPR4SC & NoviKrog) focusing on Circular Economy and regional development and the role of IPR in sustainable transformation. Rannveig is also a working group leader in a six-year regional development project, INDIGO, to build regional innovation and Circular transformation capacity. Besides her doctorate in Business and Economics, Rannveig holds a B.Ed degree in pedagogics and has extensive experience of teaching and developing courses at the Bachelor, Master and PhD levels in several European countries.

Brief CV of tutor 6

Alan R. Johnson, PhD

Born 1962 in Ireland, Male. Married with one daughter (b. 2009).

ORCID: https://orcid.org/0000-0002-8001-5522

PERSONAL STATEMENT

Alan holds a BA degree in Economics and Philosophy (1985) from Trinity College, Dublin, an MBA in International Business (2002) from University College, Dublin, and a PhD in Management and Entrepreneurship (2013) from EM Lyon Business School, France. He has held Research Scientist positions at Lund University, Sweden, (2014-2018) and Nord University, Norway (2015-2020, 2023-2024). Alan also has 18 years of experience working in the Fast Moving Consumer Goods, e.g., McVities Biscuits, Proctor & Gamble (Health and Beauty Care), and Storch AG, in sales management, marketing, key account management, and management information system development roles in Ireland. Alan's research interests focus on multilevel and longitudinal research designs and data analysis for questions about innovation, new venture creation and growth, and team behavior and decision-making in those environments. His final research projects included:

1) An archival (linked open data) study of circular economy-related innovation to model the process from a) basic scientific research to b) intellectual property registration, and c) adoption and diffusion in the public and/or private sectors (with Dolores Modic).

2) A field study of entrepreneurial ecosystems at a district (NUTS3) level of analysis using a sample of 1,200 knowledge-intensive new ventures in Baden-Württemberg, Germany (with Sophia Hess and Andreas Wahl).

3) A biography/business history project entitled: "Double Cousins, Dermot P., and Harold C.S. Johnson: Custodians of the Johnson Brothers business and beyond" (with Dermot W. M. Johnson).

Academic Service

Editorial board member for Small Group Research (SGR) with an impact factor of 1.163 (2010-2020), Journal of Business Venturing (JBV) with impact factor 6.000 (2018-2020). Substantial competence in quantitative research design, data analysis, both in theory and in practice, especially using Stata and Mplus (advanced), and R (intermediate) software packages. Building on these competences, to support colleagues and develop research projects on these issues.

Brief CV of tutor 7

Name: Leo

Surname: Mršić

Title: Professor

University and department of affiliation: Algebra University

Short biography:

Expert/scientist with proven experience in managing companies and teams (micro teams to large corporations) and a strong orientation on digital innovation. In numerous projects he led and participated in (150+), he has a particularly emphasized orientation on strategy, planning and efficient business use of technical / ICT capacities, evaluation and creation of business value and impact from the use of technologies in business.

Holder of a diploma in the field of insurance at Department of foreign trade and Master's degree in business economics of the IT Department of Faculty of Economics in Zagreb, and a Doctorate of social sciences in the field of graph theory and the application of statistical models in business, of Department of information sciences of Faculty of Humanities and Social Sciences in Zagreb. Holder of academic title Associate professor in the field of information sciences (5.04/HR), Associate professor in the field of informatics (5.13/SLO), Assistant professor in the field of computing (2.07/SLO) and teaching title Professor of professional studies with tenure in the field of economics (5.01/HR). Permanent court expert in the fields of finance, accounting, bookkeeping and informatics (12 years) with a large number (150+) of successfully completed complex expertise procedures. IPMA A Certified Project Director with 100+ successfully completed complex projects.

Vice rector for science and research at the University Algebra, Director of Algebra LAB research and innovation center, Head of the Digital Transformation Center at the Rudolfovo Public Research Center (SLO), Head of BDV i-Silver Data Center Algebra LAB, mentor on several incubator programs (Algebra LAB, Uplift), and Head of the Data science study program at the Algebra University College in Zagreb, with a delivered total of 4,500+ equivalent working hours of teaching. He is an associate and mentor at Faculty of Information Studies in Novo mesto, Faculty of Social Studies in Nova Gorica and Faculty for media in Ljubljana, Rudolfovo Public Research Center in Slovenia and Police Academy within the Ministry of the Interior of the Republic of Croatia.

Consultant on projects in the region related to strengthening education capacity (MRMS, CEP). Consultant on projects to attract subsidies/funds from local (CES) and international investment programs (competence buliding and innovation). Registered consultant GOPA Consulting Group Germany for the areas of business consulting, application of analytical /statistical methods, analysis

of the labor market and support to educational policy making. From 2022, an official observer/expert for labour market analysis and education as part of MSWG at the European Commission in Brussels.

Member of the National Council for Higher Education, Science and Technological Development, where he also serve as the Vice President for Technological Development.

Brief CV of tutor 8

Giovanni Pianigiani, Document Intelligence Team Leader at Erre Quadro

With a master's degree in Management Engineering, he has gained extensive experience in the field of patent analysis and its applications in many different industrial areas. At Erre Quadro, he leads the team responsible for developing algorithmic solutions for the analysis of technical documentation in various application areas. He serves as a Project Manager for numerous projects in both the industrial sector and within the context of European innovation projects. These projects are focused on technological mapping based on patent analytics and the development of advanced data mining tools.

Brief CV of tutor 9

Cristian Gangaliuc, Assist. Prof. in Sociology

Cristian Gangaliuc is an Assisting Professor and researcher for the Institute of Innovation and Technology in Regional Innovation at the Faculty of Information Studies in Novo mesto. He finished his PhD on the topic of "The Role of Transnational Value Chains in Regional Innovation. Analysis of Central and Eastern European Regions engaged in Automotive and Electronics Production Networks" in 2022 in the fields of Regional Innovation, Innovation, and Embeddedness of Value Chains in Regional Development. Cristian is an Editor and reviewer for the Research in Social Science Journal. During his career, he collaborated within international partnerships on multiple EU-funded projects dealing with technological innovation, the innovation potential of Small and Medium Enterprises, intersectoral cooperation between public and private organisations, and integrating Intellectual Property Rights into the innovation process. He has experience in teaching at Bachelor's and Master's education levels.

Brief CV of tutor 10

Aleksandra Ceglar Vidmar, Expert Associate at Education Centre Geoss

Aleksandra Ceglar Vidmar has a degree in geography and is working as an Expert Associate in the Project office at Education centre Geoss in Litija. Since 2004, she has been working as project manager or project collaborator in many European funded projects (Interreg Europe, Interreg MED, Interreg Alpine Space, Interreg Central Europe, COSME, Europe for citizens, Erasmus+) and thus collaborated within multiple international partnerships dealing with tourism and heritage, sustainability, social innovation, local entrepreneurship, lifelong learning, gender equality in STEM, post-human architecture, new learning pathways for low-skilled adults, migrant parents and schools, digital skills, combatting fake news in social media etc. She has worked as a coordinator of Local action group for rural development in the area Heart of Slovenia, as a coordinator of the Development partnership of the Heart of Slovenia and as a manager of public institution Monastery Mekinje in Kamnik. She has

experiences in providing non-formal and informal trainings for vulnerable groups (for example national Social activation program) and implementing project communication and dissemination activities.

Brief CV of tutor 11

Luca Boggio is an Associate Professor in Business Law and in Bank, Financial Intermediary, and Insurance Company Law at Università degli Studi Link – Rome. He also teaches Digital Economy Law at Università degli Studi di Torino.

Research Fellow at the European Law Institute and member of the Consultative Committee related to the project "Guiding Principles and Model Rules on Algorithmic Contracts" at the European Law Institute (ELI). Research Fellow in the Competence Center on Acquis (CCA) "Social innovation Ecosystem Development" (SEED) funded by the European Social Fund. Director of the Observatory on Corporate Development and Reorganization (CoDR) established at IUSE – Istituto Universitario di Studi Europei (italian hub of the European Law Institute). Member of other research groups in the field of Intellectual Property Rights co-funded by the European Union and of Centro CRISI – Centro di Ricerca interdipartimentale su Impresa, Sovraindebitamento e Insolvenza dell'Università degli Studi di Torino.

Editorial boards of Giurisprudenza Italiana, Rivista di Diritto Societario, Il Diritto Fallimentare e delle Società Commerciali, Giurisprudenza Commerciale, Giurisprudenza Arbitrale.

Author of four books on corporate restructurings, on corporate dispute resolution, on mediation and on company cross-border mobility, as well as more than 140 essays, articles and comments on Company, Insolvency, Banking, Finance, Digital Transformation and Sovereign Debt Laws and Regulations.

Brief CV of tutor 12

Dario Carrera

PhD in Public Administration and Management, title of thesis "Creating social entrepreneurs. From civil society movements to social innovation: the role of the social enterprise incubators and centres for social innovation", University of Rome "Tor Vergata". Research Fellow in Social Innovation and Imoact Economy and Contract Professor in Startup at Link Campus University of Rome.

Co-founder of Impact Hub in Milan and Rome, centres for social innovation, part of the global Network Impact Hub, made up by 110 cities and more than 26k members.

In 2013-14 Member of the Italian "Groupe d'Experts de la Commission sur l'Entrepreneuriat Social (GECES)", appointed by the Italian Minister of Labour and Welfare.

In 2012 advisor of the Italian Ministry in charge for Education and Innovation, consulting on the issues related to the Digital Agenda for Italy and the adoption of national policies and initiatives for digital skills, ICT for social change and social innovation.

President of Italian Social Innovation Network (I-Sin), 2012-13.

Brief CV of tutor 13

Ana Hafner (PhD) is a researcher at Rudolfovo – Science and Technology Centre Novo mesto, lecturer at Faculty of Information Studies, DOBA Business School, and School of Advanced Social Studies, Slovenia. At the Slovenian Intellectual Property Office, she is a registered attorney for trademarks and industrial designs. Her research interests are inventions and intellectual property. She cooperated in several research projects, including "Innovation Potential of Slovenian Automotive Industry" supported by European Regional Development Fund, and the IPLodB project on patent related linked open data, sponsored by the European Patent Office.

Brief CV of tutor 14

Andrea Di Sante is an Italian student, graduated in a Bachelor of Business studies in particular Marketing and Brand Management at Link Campus University, Rome, Italy, with a thesis entitled, "Moral Implications of Artificial Intelligence achieving Sustainable Development Goals". Currently he is pursuing his studies at Tor Vergata school of Economics, Rome, Italy, with a Master of Science in Business Administration. In addition, he is collaborating with the Startup & Spin-off course of professor Dario Carrera, coordinating the project works and collaborating to the research project IPR4SC.

Brief CV of tutor 15

Andrea PALMISANO, Research fellow in Sports and Comparative Law.

Andrea Palmisano is a Research fellow in Sports and Comparative Law at Link Campus University, Rome, Italy. He obtained a PhD in Civil and Comparative Law at the University of Salerno, Italy. He participates in the European Project on IP skills for sustainability and the circular economy (IPR4SC).

Brief CV of tutor 16

MSc. Stanko Vegelj, Quality Manager

Stanko Vegelj graduated from the Faculty of Electrical Engineering in Ljubljana in 1993 and obtained a master's degree in quality management from the Faculty of Organizational Sciences in Kranj in 2009. He has been employed at the Ministry of Defence of the Republic of Slovenia since 1994.

Since 2015, he has been responsible for the quality management system in accordance with NATO standards – conducting quality assessments of military products and certification of quality management systems of defence industry companies in the Republic of Slovenia.

He's participating in several NATO and EU project/working groups in the field of quality management system (AC327/WG2), purchase, development and modification of military equipment and its support

throughout the life cycle (NSPA – NATO Support Procurement Agency, research and development projects), building capacity for operation in case of natural disasters (floods, fire) for the operational needs of the Protection and Rescue Administration of the Republic of Slovenia.

He has more than twenty years of pedagogical and andragogical experience in teaching the contents of military logistics and logistics engineering at the secondary, college and university levels.

B. Programme Structure

Programme Thematic Units & their Description*:*

Title of Teaching Unit 1 Introduction to Patent Searches

Summary description of the purpose and content of the TU1

- Overview of Patents: Understand what patents are, their importance, and their role in innovation and intellectual property.
- Patent Search Fundamentals: Learn the basic concepts and processes involved in conducting patent searches.

The first block of the program serves as a crucial foundation, providing students with the theoretical background necessary to comprehend the subsequent modules. It focuses on imparting the fundamental knowledge required for creating queries, utilizing patent analysis tools, managing datasets, and interpreting data obtained from patent analysis. This block consists of two sections aimed at introducing students to the complexities of patent searches and understanding the structure of patents.

The initial session provides an overview of patent searches, explaining the significance of patents and the essential processes involved in conducting searches. Students will gain insights into the purpose of patent searches and the methodologies employed in retrieving relevant patent information. Following this, the second session explores the structure of a patent and the metadata it encompasses, namely bibliographic data. Understanding the composition of a patent and its bibliographic data is pivotal as it forms the basis for formulating accurate queries, interpreting patent data, and grasping concepts such as patent families. By the end of this block, students will possess a firm understanding of the pivotal role of bibliographic data in patent searches, laying the groundwork for their exploration into more advanced topics covered in subsequent modules.

Duration in hours, Value in ECTS : 15, 0,6

Responsible trainer: Aris Anagnstakis

Title of Teaching Unit 2 Designing and Refining Search Queries and Tools for Patent Analysis

Summary description of the purpose and content of the TU2

- Query Design Techniques: Develop skills to design effective search queries for patent databases.
- Advanced Query Refinement: Learn methods to refine and optimize search queries to yield precise and relevant results.
- Patent Databases and Software: Introduction to various patent databases and analysis tools.
- Hands-On Tool Training: Practical sessions on how to use these tools for effective patent analysis.

Block number two delves into the theoretical foundations of query creation for patent analysis, focusing on distinguishing between Boolean and semantic logic. Through a series of examples, students are equipped with the foundational knowledge necessary to formulate effective queries for patent analysis tools. The block comprises three distinct sessions tailored to provide students with a comprehensive understanding of query construction and practical application using free open access tools.

The first session presents the theory behind query construction, revealing the principles of Boolean logic and semantic logic. Students learn key concepts such as stemming, keywords, and the use of synonyms, which are essential for crafting precise and targeted search queries. The second session introduces students to a range of free open access tools commonly used in patent analysis, providing insights into their main features and functionalities. Finally, the third session is dedicated to a hands-on workshop where participants have the opportunity to apply their newfound knowledge by using the free open access tools to query databases and retrieve patent sets.

The primary objective of this block is to equip students with the skills necessary to construct effective Boolean queries, enabling them to obtain more accurate results in patent searches. By understanding the main features of each tool and how they build queries, students will be able to select the most suitable tool based on their research objectives. This comprehensive understanding of query construction and tool selection will enable students to optimize their patent search strategies effectively, leveraging a variety of tools to achieve their research goals.

Duration in hours, Value in ECTS , 15, 0,6

Responsible trainer: Dimitrios Dimopoulos

Title of Teaching Unit 3 Data Management and Visualization

Summary description of the purpose and content of the TU3

- Data Organization: Learn techniques for managing large sets of patent data.
- Visualization Techniques: Explore methods for visualizing patent data to identify trends, patterns, and insights.

Block number three of the program, dedicated to managing the substantial volumes of data extracted from patent databases, emphasizes the criticality of ensuring a clean and reliable dataset. Beyond merely handling large quantities of data, individuals engaged in data analysis must also address challenges such as term disambiguation and merging patent sets obtained from various tools. Comprising four sessions, this block guides students through the difficulties of data management and visualization, each session targeting a specific aspect essential for refining and comprehending the dataset.

The initial session focuses on gaining a comprehensive understanding of the dataset, enabling students to grasp its characteristics and complexities. Subsequent sessions delve into crucial techniques for enhancing dataset quality: disambiguation, which aids in eliminating duplicate or ambiguous results, and merging, which facilitates the integration of results from disparate sources. By mastering these techniques, students can achieve a dataset that is both complete and accurate. The final session introduces students to data visualization solutions, empowering them to explore and present their findings effectively. Ultimately, the main objective of this block is to equip students with the skills necessary to clean and refine datasets obtained from querying patent databases, thereby enabling them to derive meaningful insights and make informed decisions based on their research objectives.

Duration in hours, Value in ECTS 15, 0,6

Responsible trainer: Dimitrios Dimopoulos

Title of Teaching Unit 4 Interpreting Patent Analysis Results

Summary description of the purpose and content of the TU4

- Analytical Techniques: Develop the ability to interpret patent data and analysis results.
- Strategic Decision Making: Learn how to use patent analysis to support strategic business decisions.

The final block of training material serves as a culmination of the course, focusing on the interpretation of data gathered from patent analysis tools. Through a presentation of a real case study, this block showcases the potential insights derived from patent analysis and their strategic value for companies. Participants are guided through an examination of strategic questions that arise during a company's growth, particularly when pivotal decisions must be made. Block number four consists of a single session that spans two distinct periods in the real company's history: pre-2002 and post-2002 to 2012. By studying these periods, participants gain a comprehensive understanding of how patent analytics can inform strategic investigatory processes.

The main objective of this block is to equip students with the skills to understand and leverage patent analytics for strategic investigations. By the end of the session, participants are expected to grasp the utility of patent analytics in guiding strategic decision-making processes. They will also recognize the importance of selecting appropriate data visualization techniques to aid in information generation and interpretation. Understanding that the quality of the results depends on both the chosen visualization type and the questions asked, participants will be well-prepared to apply their newfound knowledge in real-world scenarios, making informed strategic decisions based on patent analysis insights.

Duration in hours, Value in ECTS 15, 0,6

Responsible trainer: Dimitrios Dimopoulos

Title of Teaching Unit 5 Assessment

Summary description of the purpose and content of the TU5

Assignment / Case Study. Participants will utilize the knowledge and skills acquired during the program for the successful execution of a final evaluation survey.

Duration in hours, Value in ECTS 15, 0,6

Responsible trainer: *Aris Anagnstakis*

Additional Materials:

- Introductory Block for Beginners
  - o Supplementary materials covering basic introductory topics in patent analysis
  - o Additional support and resources for beginners
- Add-On Materials
  - o Advanced content for participants seeking to delve deeper into specific aspects of patent analysis
  - o Specialized topics and detailed case studies

Each block includes a combination of lectures, practical workshops, and real-world examples to ensure that participants not only understand the theoretical aspects of patent analysis but also gain hands-on experience in applying their knowledge. The flexible structure of the course allows participants to progress at their own pace while ensuring a comprehensive learning experience that equips them with the skills necessary for effective patent analysis.

Timetable for the Implementation of Individual Teaching Units:

Unit Title	Week	Hours	ECTS	Teacher
Introduction to Patent Analysis	0,75	15	0,6	Kameas Aris Anagnstakis Dimitrios Dimopoulos Dolores Modic
Designing and Refining Search Queries and Tools for Patent Analysis	0,75	15	0,6	Dimitrios Dimopoulos Dolores Modic, Rannveig Edda Hareem Arshad
Data Management and Visualization	0,75	15	0,6	Dimitrios Dimopoulos Dolores Modic, Rannveig Edda Hareem Arshad
Interpreting Patent Analysis Results	0,75	15	0,6	Aris Anagnstakis Dimitrios Dimopoulos Cristian Gangaliuc
Assesment	1	15	0.6	Aris Anagnstakis Dimitrios Dimopoulos Nikolaos Giannakeas Leo Mršić
Total	**4**	**75**	**3**	

C. Programme Implementation Methodology, Evaluation & Certification

Teaching & Attending:

The educational design follows the methodology that supports Open and Distance electronic learning. Teaching through an asynchronous tele-education system is primarily based on the asynchronous study of educational material and the development of activities to ensure a high degree of learner autonomy. However, based on educational needs, synchronous learning via a synchronous tele-education system is also conducted as necessary.

The distribution of educational and support material is done gradually and on a weekly basis. The educational material is available online in digital form, while it can also be locally stored. It is easily printable for users who prefer printed material. Additionally, there is the option for learners to upload material and assignments for evaluation..

Sample of educational material :Block 4_Method Products case study.pptx

How trainees are assessed:

All participants who have demonstrably attended at least 80% of the teaching hours of the offered program (synchronous and asynchronous education) will be eligible to receive a participation certificate.

The assessment of learners, which will lead to a training certificate, will be conducted in multiple stages.

There will be four self-assessment tests, which will be in the form of multiple-choice quizzes. One for units DE2 and DE3, one for units DE4 and DE5, one for units DE6 and DE7, and one for units DE8 and DE9. Each learner will be able to take each test as many times as they want. An attempt is considered successful with a score of at least 70/100.

Upon completion of the program, participants will work on small group assignments/case studies. Participants must use the knowledge and skills they acquired during the program for successful execution, writing, and presentation of their work.

The work will be evaluated by members of the teaching staff. A successful assignment is one that is scored at least 70/100. The assessment committee may request revisions to some assignments. The weight of each type of assessment in the overall assessment will be 40 (self-assessment) / 60 (assignment) respectively.

Assessment of the Programme

For the evaluation of the services provided by the Programme at the level of educational work as well as administrative and technical support, the Trainee is asked at the end of the Programme to complete a single questionnaire, which includes specific axes and evaluation indicators, which is processed and followed up by the Internal Assessment and Training Unit of H.O.U.[1]

Type of certificate issued

After the successful completion of the programme, a " Training Certificate " and an "Annex to the Certificate of Training" are issued, which include the following information: a) the duration of the

[1] According to the Internal Regulation of the L.L.C., Article 8

programme in hours, b) the teaching method, c) the credit units (ECTS) and d) the titles of the thematic or teaching units of the programme.

The certificates shall be signed by the Scientific Director of the programme, the President of the L.L.C. and shall be available after the completion of the programme. In case of unsuccessful completion of the Programme, a simple 'Certificate of Attendance' will be issued. In addition, payment of the full tuition fees for the Programme is required for the award of the certificates.

Other Obligations of Trainees

In addition to the successful completion of the programme, the following are required from the trainees **for the award of the Certificate**:

- Full payment of tuition fees
- Acceptance of their participation in the programme assessment process

Obligations of Trainers

- Communicates through the training platform with the trainees, answering any questions/clarifications that may have been raised by the trainees.
- Posts announcements on the educational platform regarding the course and the way it is conducted
- Resolves questions, guides learners in the correct study of the training material, suggests additional literature - if requested.
- Encourage trainees to participate in the learning process, if it is found that some of them abstain from the learning process.
- Carry out any task or work related to the educational support of trainees.
- Grades the development questions (open-ended questions) and the trainees' work.

D. Selection Method & Registration in the Programme

Qualifications and supporting documents required:

Educational Level: Bachelor/ Mase/PhD Degree

Knowledge of a foreign language (e.g., English, Italian): English

Method of selection of trainees:

Priority Order

Interview if necessary (if number of applications exceed maximum place numbers)

Maximum offered places number :140

Way to register in the programme:

The registration in the Programme is done online by submitting a Registration Application Form at https://apps.eap.gr/kedivim_en/web/index.php

Tuition fees and payment method:

This program is provided free of charge and is implemented within the framework of the IPR4SC project 'Developing skills in Intellectual Property Rights Open Data for sustainability and circularity', K.E.-80359, which is funded by the European Union (ERASMUS+/ERASMUS-EDU-2021, PI-ALL-INNO) and is implemented by the Special Account for Research Funds (ELKE) of the Hellenic Open University (HOU).

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