Code - Course	064622 – Artificial intelligence in tourism				
Type	Elective: specialization		Year	4th	
Thematic Area	New technologies and digital tools		Credits	3 ECTS	
In-class	30 hours	Teacher-led	20 hours	Individual	25 hours

BRIEF COURSE DESCRIPTION

Artificial Intelligence in Tourism: From Zero to Hero

Dive deep into the transformative realm of artificial intelligence tailored for the tourism sector. This course aims to provide a comprehensive understanding of AI's principles, intricacies, and its revolutionary applications within the vast landscape of tourism. Beyond traditional lectures, students will embark on a journey of experiential learning, blending theory with hands-on practical use cases that touch different verticals within the tourism industry.

Inspiration is at the heart of our approach. We challenge students to think unconventionally, harnessing AI tools in their daily endeavors, both personally and professionally. By integrating AI tools directly into the classroom, we not only teach but demonstrate the power of AI. These tools, serving as our "teaching assistants," offer students a unique opportunity to interact, experiment, and innovate.

Be prepared to be disrupted. This course goes beyond the curriculum, aiming to reshape the way students perceive and utilize AI in tourism, turning novices into pioneers and innovators.

BASIC SKILLS

BS05- Students must develop the necessary learning skill to undertake further studies with a high grade of autonomy.

GENERAL SKILLS

GS04- Have a commitment to ethics.

LEARNING OBJECTIVES

RT125: "Understand the basics of creating and managing digital platforms in the tourism sector."

RT131: "Understand the latest trends and applications of artificial intelligence in tourism."

ACADEMIC CONTENTS

1. Introduction to AI and Tourism

   - Overview of AI: Definition

   - Historical Context: Evolution of AI and the advancement of technology in tourism

   - The Intersection of AI and Tourism

2. Foundations of AI (Part I)

   - Basic AI Concepts: Machine Learning, Deep Learning, NLP (Natural Language Processing), Neural Networks, Algorithms

   - Introduction to AI tools and platforms

3. Foundations of AI (Part II)

   - Basic AI Concepts: Computer Vision, LLM (Large Language Models), Fine tuning, Grounding, Reinforcement Learning, Active Learning, Overfitting and Underfitting

   - Introduction to AI tools and platforms

4. Data in Tourism

   - The importance of data in decision-making

   - The importance of data in AI applications

   - Types of Data in Tourism: Quantitative and Qualitative

   - Data collection, cleaning, processing, and analysis within the tourism context

5. AI in Customer Experience

- Chatbots and virtual assistants for tourist inquiries

- Personalized recommendations and travel planning

- Augmented and Virtual Reality in tourism

- Practical Workshop: Test real AI tools

6. AI in Operations and Management

- Predictive analytics for demand forecasting

- Optimization algorithms for resource allocation and scheduling

- Automation and robotics in hospitality

- Practical Workshop: Test real AI tools

7. AI in Marketing and Outreach

- Predictive analytics for segmented marketing

- Sentiment analysis for feedback and reviews

- AI-driven content creation and curation

- Practical Workshop: Test real AI tools

8. Ethical Considerations in AI for Tourism

- Bias and fairness in AI models

- Concerns about data privacy and security

- Ethical considerations in data collection and AI deployment

- Cultural and societal implications of AI-driven solutions

9. Review/Buffer Session

10. AI in Smart Destinations

- Analysis of trends and patterns

- Predicting future tourist hotspots

- Understanding smart tourism destinations

- Designing a blueprint for a smart destination

11. Future of AI in Tourism

- Emerging AI technologies and their potential impact

- Long-term strategies for integrating AI into tourism businesses

- Encouraging innovative thinking and brainstorming sessions

12. AI and Communication in Tourism

- Techniques to articulate AI concepts to different stakeholders

- Role-playing and presentations: Tailoring communication based on the audience

- Podcasting and AI

- Workshop: Create a workflow for a podcast about tourism and AI

13. Course Recap Podcast Episode

- Workshop: Podcast on "AI in Tourism"

- Summarizing the main course takeaways

- Exploring avenues for further studies or specialization

- Encouraging continuous learning and innovation

LEARNING METHODOLOGY

The learning methodologies planned for the subject combine a number of processes being the most remarkable the cognitive methods related to the comprehension of the principles of tourism and the global tourism system as well as the inclusion of a set of skills, mainly technical.

The activities and methodologies -both group and individual- designed for this subject are the following:

- Activity 1: Challenges in tourist data management.
- Activity 2: Testing AI for trip planning. How do we enhance the experience? Challenges?
- Activity 3: Robotics in daily hotel operations. How do we improve the experience? Challenges?
- Activity 4: Testing AI for responding to comments. How do we improve the experience? Challenges?
- Activity 5: Social and ethical impact of AI papers. Summary and analysis of AI-related papers and conclusions by the student.
- Activity 6: Role Play: Ethical dilemmas in Tourism.

  Activity 1 EU: Papers on the social and ethical impact of AI. Summary and analysis of AI-related papers and conclusions by the student.

  Activity 2 EU: Creating a customer service chatbot using AI tools.

ASSESSMENT SYSTEM

The assessment system measures the student's achievement of learning outcomes regarding the subject's competences and contents.

Students may choose continuous assessment or single assessment:

Continuous Assessment: the teaching-learning process is assessed by a continuous monitoring of the work done by the students throughout the course and a final individual examination. Students must attend classes in order to be assessed by continuous assessment.

Single Assessment: for those students who cannot come to class regularly, they can choose to be assessed by single assessment. The teaching-learning process is assessed by means of the assessment of all activities and in-person individual examination at the end of the course.

To qualify for this form of assessment, students must apply within the first 15 days of the start of the course through the assessment section of Virtual Campus.

The assessment activities planning will be public for the students from the start.

Activities	Type	Continuous	Single	Week deadline
Activity 1: Challenges in tourist data management.	Group	8%	-	4 week
Activity 2: Testing AI for trip planning. How do we enhance the experience? Challenges?	Group	8%	-	5 week
Activity 3: Robotics in daily hotel operations. How do we improve the experience? Challenges?	Group	8%	-	6 week
Activity 4: Testing AI for responding to comments. How do we improve the experience? Challenges?	Group	8%	-	7 week
Activity 5: Social and ethical impact of AI papers. Summary and analysis of AI-related papers and conclusions by the student.	Individual	20%	20%	10 week
Activity 6: Role Play: Ethical dilemmas in Tourism.	Group	8%	-	12 week

Activity 2 EU: Creating a customer service chatbot using AI tools.	Individual	-	20%	12 week
Final exam	Individual	40%	60%	Exam week
Total		**100%**	**100%**	

To pass the course, it is mandatory to have obtained a minimum final grade of "5", as long as the student has completed the individual exam/s or work/s established in the course. This exam/s or final work/s must be graded with a minimum of "4" in order to be able to calculate the average of all the assessment activities carried out during the course.

Revision and Reassessment of the Course

The student has the right to revise all the evidences that have been designed for the assessment of learning.

If a student fails to achieve the learning objectives of the course, in order to opt for the subject reassessment, it will be necessary to have obtained a final grade of the subject between "4-4.9", and to have attended the individual final exam/s or final work/s of the course.

The reassessment process will only involve the modification of the final grade in the case that the new assessment activity is passed and, in any case, the maximum grade will be "5". This grade will be averaged with the other grades of the assessment activities carried out by the student during the corresponding academic period, considering the percentages established in each subject, setting the final grade for the course.

REFERENCES

Coeckelbergh. M. y Gunkel, D. (2023) "ChatGPT: deconstructing the debate and moving it forward". AI & Society. (June 2023)

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Cristch, A. y Russel, S. "TASRA: a Taxonomy and Analysis of Societal-Scale Risks from AI". (January 2023)

Deloitte AI Institute (2023). "Proactive Risk Management in Generative AI"

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UNESCO (2023) "Foundation models such as ChatGPT through the prism of the UNESCO Recommendation on the Ethics of Artificial Intelligence". (June 2023).