Course Title:	**Introduction to Prompt Engineering**
Institute/Division:	Department of Automation and Computer Engineering Faculty of Electrical and Computer Engineering
Course code:	**E–IPE**
Erasmus subject code:	0610 Information and Communication Technologies (ICTs)
Number of contact hours:	45
Course duration:	1 semester (Fall/Winter)
ECTS credits:	6
Course description:	The course introduces students to the practical applications of large language models (LLMs), with a particular focus on content creation, generation, and co-development of programming code. The program covers the fundamentals of artificial intelligence, the working mechanisms of LLMs, tokenization, and API integration. Students will explore the capabilities of key models (ChatGPT, Claude, Gemini, Copilot, Gamma, DeepSeek, Perplexity), learn to formulate effective queries (prompt engineering), and utilize LLMs as assistants in the programming process.The course also emphasizes the practical use of models for generating, debugging, and optimizing code across different programming languages, as well as methods for integrating AI tools into the software development lifecycle. The classes cover intelligent information retrieval techniques and methods to minimize the risk of hallucinations. Practical laboratory sessions allow students to experiment with various LLM models in the context of content creation and problem-solving in programming. Course completion is based on the assessment of laboratory exercises and the execution and presentation of an individual project that leverages LLM technologies to solve a practical problem or automate a selected process.
Course type:	Lectures (20h), Computer laboratory (20h), Project (5h)
Literature:	Moreira, G. M. B. (2025). Use of large language models to support aerospace defense systems engineering (Doctoral dissertation). Instituto Tecnológico de Aeronáutica, São José dos Campos, Brazil. Albuquerque da Silva, D. C., Ferreira, C. L., Silva, S. S. C., & Cardoso, J. B. A. (2025). Analysis of the effectiveness of LLMs in handwritten essay recognition and assessment. In Proceedings of the 17th International Conference on Agents and Artificial Intelligence (ICAART 2025) - Volume 2 (pp. 776-785). SCITEPRESS. https://doi.org/10.5220/0013353700003890 Albuquerque da Silva, D. C., Ferreira, C. L., Silva, S. S. C., & Cardoso, J. B. A. (2025). Analysis of the effectiveness of LLMs in handwritten essay recognition and assessment. Military Engineering Institute (IME), Brazil. Retrieved from https://www.scitepress.org/Papers/2025/133537/133537

Assessment method:	Laboratories: 50% of the final grade (continuous assessment based on activity and completed laboratory tasks) Project: 50% of the final grade (assessment of the project and its oral presentation)
Prerequisites:	Basic knowledge of natural language processing Ability to use IT and internet tools
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