COURSE SYLLABUS

1. Program information

1.1. Institution	Petroleum - Gas University of Ploiesti
1.2. Faculty	Petroleum Refining and Petrochemistry
1.3. Department	IPPPM
1.4. Field of study	Chemical Engineering
1.5.Study cycle	Master
1.6. Study program	Chemical Engineering for Refineries and Petrochemistry

2. Course information

2.1.Course title	**Ethics and academic integrity**
2.2. Course coordinator	Assist. Prof. Ph.D. Eng. Movileanu Daniela Luminița
2.3.Laboratory / seminar coordinator	-
2.4. Year of study	II
2.5. Semester *	3
2.6.Evaluation type	V
2.7. Course type - formative category **/ Type of subject matter ***	C3/C

*the semester number is in accordance with the curriculum;

**fundamental = F0; domain = D1; speciality = S2; complementary = C3

***compulsory = C; optional = O; elective= E

3. Total estimated time (teaching hours per semester)

3.1. Number of hours per week	1	of which: 3.2. course	1	3.3.Seminar/laboratory	-	3.4.Project	-
3.5. Total hours from curriculum	14	of which: 3.6. course	14	3.7. Seminar/laboratory	-	3.8. Project	-
3.9. Total hours of individual study (Study of textbook, course support, bibliography, study of textbook, course support, further reading in the library, on online platforms, preparing seminars/laboratories, homework, portfolios and essays)							106
3.10. Total hours per semester							120
3.11. Number of credits							4

4. Prerequisites (where applicable)

4.1. Curriculum requirements	➢ graduated bachelor ➢ basic knowledge of using computer technologies for data acquisition, data processing and documentation
4.2. Course requirements:	➢ Course room with video projector
4.3. Seminar/Laboratory requirements:	

5. Specific competences acquired and learning achievements* outcomes

Professional competences	**Learning achievements***
3. Integrates principles of sustainable development and circular economy	K1 - The student describes advanced concepts of sustainable development applicable in chemical engineering. K2 - The student identifies strategies for reducing, reusing, and valorizing resources. K3 - The student defines performance indicators for sustainable processes. S1 - The student evaluates the environmental impact of chemical processes. S2 - The student proposes technological solutions for pollution reduction and energy efficiency. LO1 - The student makes decisions in accordance with environmental legislation and sustainability principles. LO2 - The student promotes ethical conduct in resource use.
4.Uses advanced techniques of analysis and quality control	K1 - The student describes modern methods of instrumental analysis and material characterization. K2 - The student explains principles of validation and calibration of analytical methods. S1 - The student applies advanced experimental methods for product characterization. S2 - The student uses statistical tools for analytical data interpretation. LO1 - The student takes responsibility for validating and reporting results. LO2 - The student prepares quality reports according to international standards.
5.Carries out research and innovation activities in chemical engineering	K1 - The student describes advanced research methodologies in chemical engineering. K2 - The student identifies innovative directions for the development of processes and products. K3 - The student defines methods for experiment design and interpretation. S1 - The student applies experimental and computational methods to obtain original results. S2 - The student writes scientific papers and research projects. LO1 - The student demonstrates autonomy in carrying out research projects. LO2 - The student disseminates results nationally and internationally.
Transversal competences	**Learning achievements***
Develops critical thinking and the ability to solve complex problems	K1 - The student identifies reasoning models applicable in interdisciplinary contexts. S1 - The student applies methods of analysis and synthesis to solve complex problems. S2 - The student uses modern tools for decision evaluation and substantiation. LO1 - The student takes responsibility for the proposed solutions and their impact. LO2 - The student demonstrates autonomy in the critical approach of complex situations.
Communicates effectively orally and in writing in Romanian and in an international language	K1 - The student explains the specialized terminology in Romanian and in a foreign language. S1 - The student drafts reports, presentations, and professional documents.

	S2 - The student delivers oral presentations and debates in academic and professional contexts. LO1 - The student takes responsibility for the correct and clear transmission of information. LO2 - The student demonstrates autonomy in selecting means and communication strategies.
Collaborates effectively in multidisciplinary and intercultural teams	K1 - The student explains the dynamics and roles of members in a multidisciplinary team. S1 - The student actively participates in team activities and contributes to achieving common goals. S2 - The student uses collaboration and communication management tools. LO1 - The student assumes responsibility for their role in the team and respects cultural diversity. LO2 - The student demonstrates autonomy and initiative in conflict resolution and collaboration facilitation.
Demonstrates lifelong learning ability and the use of IT resources	K1 - The student explains the principles of responsible use of IT resources. S1 - The student uses digital platforms and resources for documentation and learning. S2 - The student integrates new information in solving professional tasks. LO2 - The student demonstrates autonomy in selecting and using learning resources.
Displays social responsibility, professional ethics, and civic spirit	K1 - The student describes the principles of professional ethics and social responsibility. K2 - The student explains the ethical implications of professional decisions. S1 - The student applies ethical principles in professional and academic activities. LO1 - The student takes responsibility for the ethical consequences of decisions. LO2 - The student demonstrates autonomy in promoting ethical and civic conduct.

* K – knowledge; S – skills; LO – responsibility and autonomy.

6. Course objectives (based on the competence grid)

6.1. General objective	➢ knowledge and understanding of the issues, concepts and principles of ethics and academic integrity; ➢ developing documentation skills; ➢ developing skills for understanding and analysis of technical and scientific documents (patents, scientific papers) of various degrees of difficulty.
6.2. Specific objectives	➢ knowledge and application of the principles and norms of professional ethics and deontology; ➢ identification and analysis of academic ethics and integrity issues, use and citation of sources, objective presentation of data; ➢ understanding the importance of performing replicable and reliable research and appreciation of factors that lead to rigorous research; ➢ application of critical thinking in solving ethical problems; ➢ expression of a responsible attitude towards the scientific field to optimal and creative capitalization of their own potential; ➢ teamwork, interpersonal communication and the assumption of specific roles.

7. Contents

7.1. Course	Time	Teaching methods	Comments
Ethics, deontology and integrity – introductory notices, terminology, history. The role of ethics and integrity in the academic field	1	Lecture, conversation and debate	
Intellectual fraud: terminology, legal regulations. Plagiarism. Authorship, ownership and plagiarism in the digital age. Scientific communication and deontology.	2		
Relations in the community and with the society; students' behaviour	1		
The code of academic ethics and deontology. Regulation of organization and functioning of the university ethics committee	2		
Documentation in scientific research. Ethical challenges caused by fast development of mass media.	1		
Data acquisition, management and sharing; Sloppiness vs Fabrication	1		
Industrial property. Right protection systems: patent, utility model, design, trademark. International treaties in patents field.	2		
Online database of patents and scientific papers	3		
Management of patenting. Legal exploitation of patents. Rights and obligations	1		

Bibliography

1. Constantinescu, M., Mureşan, V., *Institutionalizarea eticii: mecanisme si instrumente*, Editura Universitatii din Bucuresti, 2013
2. ****Ullmann's Encyclopedia of Industrial Chemistry*, 40 Volume Set, *7th Edition*. *Wiley-VCH* (Editor), 2011
*3. ****Kirk-Othmer Encyclopedia of Chemical Technology Fourth Edition, John Wiley & Sons, 1998;*
4. Erhan, V., *Brevetul de Inventie – Obtinere si exploatare*, Editura Lumina Lex, Bucuresti, 1995
5. Sutherland – Smith, W., *Plagiarism. The internet and student learning. Improving Academic Integrity*, Routledge, Taylor and Francis Group, New York and London, 2008
6. Macfarlane, B., *Researching with integrity. The ethics of academic enquiry*, Routledge, Taylor and Francis Group, New York and London, 2009
7. Brennecke, P., *Academic integrity at the Massachusetts Institute of Technology*. *A handbook for students*, 2012
8. Bretag, T., Handbook of Academic Integrity, Springer Reference, Singapore, 2016
9. Eaton, S.E., Second handbook of Academic Integrity, Springer International Handbooks of Education, Springer Nature Reference, Switzerland AG, 2024

7.2. Seminar / laboratory	Time	Teaching methods	Comments
Bibliography			

7.3. Project	Time	Teaching methods	Comments
Bibliography			

8. Correlation of the course contents with the demands of the epistemic community representatives, professional associations and representative employersin the field of the program

The content of the course and seminars is in agreement with the curricula of other universities, from our country or abroad. In order to better adapt the curriculum content to the requirements of labour market, meetings with economic partners, graduates and teachers from faculties in chemical engineering field were held.

9.Evaluation

Activity	9.1. Evaluation criteria	9.2. Evaluation methods	9.3. Percentage of final grade
9.4. Course	Correctness and completeness of acquired knowledge	Oral exam with theoretical questions	80%
	The degree of acquiring the specific language		

	Scientific report related to ethics and academic integrity	Power point presentation	20%
9.5. Seminar / laboratory / project			
9.6. Minimum performance standard			
➢ Minimum 5 for each examination subject			

Signature/date	Course coordinator	Laboratory coordinator	Project coordinator
22.09.2025			

Date of approval in the department	Head of department	Dean
26.09.2025		