

TRAINING PROGRAM IN DISCIPLINE: Chemical Engineering

1. Basic information

Domain: Engineering and Technology

Discipline: Chemical Engineering

Degree awarded: PhD in Chemical Engineering

2. Training demand

The current demand for highly qualified engineering staff is very high and comes from the needs of higher education and research institutes, both in Poland and abroad. Our own analysis shows that doctoral candidates often receive their job offers even during their studies. Some of them are sent to study by their employers. Rapid development of economy, science and industry, allows for the assumption that this trend will continue in the coming years.

3. Detailed entry requirements

The formal requirement for candidates is the graduation from MSc course in chemical engineering or other technical course of a similar scope. In addition, the candidate should demonstrate the ability to work on their own, the ability to acquire and apply knowledge from various fields, as well as demonstrate predispositions for the objective analysis and evaluation of the collected observations and experimental results.

4. Teaching methods

Lectures, tutorials, laboratories, projects, seminars, e-learning.

5. Graduate's profile

The graduates of the IDS TUL in the discipline chemical engineering are fully skilled persons in terms of the scientific knowledge in chemical and process engineering. By developing their scientific and professional career they improve the practical applications of this area of knowledge, also taking the environmental problems into account, developing and designing research and industrial installations. In the course of training they gain the knowledge related to the most advanced technologies and development trends under the supervision of lecturers from Polish and foreign scientific centers and ultimately doctoral candidates are directed to thoroughly study the issues related to their individual doctoral theses. Advanced design and laboratory work prepare these young scientists for the tasks related to the creation of their own research teams, managing R&D departments in enterprises, creating the consortia for developing new technologies, development of products, processes and services as well as creating the independent entities like Spin off/out or Start-ups. In addition, they gain knowledge required to work in the institutions related to the technical and process safety. They can also modify, evaluate and consult new technological and product solutions in terms of their efficiency, profitability and innovativeness, also in the wider context of a sustainable and low-carbon circular economy.

For the specialists in this area all industries and institutions associated with advanced chemical engineering are open. These are processing, chemical, pharmaceutical and food industries, energy production, renewable energy sources sector. Referring to the experience of economies of innovation leaders, we are fully convinced that people with a PhD degree in chemical engineering are not only talented scientists but they also represent the most valuable and creative background - as the middle and senior management in the industry and business. They also create breakthrough technologies and solutions in the leading research and development centers. The important sectors of the employment for our graduates are also state and local government administration institutions as well as NGOs. They seek our graduates as their expert, consultative and supervisory employees to ensure environmental safety, safety of production processes and products.

6. Training plan

First year (Semester 1 and 2)		
No.	Subcategory	Subject
1	E	Entrepreneurship
2	CC1	Transport phenomena
3	CC2	Green chemistry and engineering