Synthetic Chemist in Medicinal Chemistry

Synthetic Chemists in Medicinal Chemistry design and synthesise complex chemical compounds for drug discovery and development. They specialise in small molecules, drug conjugates, and new modalities like RNA or peptide therapeutics. Their work involves route design, lab experimentation, and cross-disciplinary collaboration to bring innovative medicines to market, with a growing focus on sustainable practices and digital research tools.

<ESCO Mapping> - <link to ESCO (European Skills, Competences, Qualifications and Occupations)>

ID	NAME	Concept URI
2113.1	Chemist	http://data.europa.eu/esco/occupation/0d937 06d-32fd-4de3-aa08-be1003e325da

Context

EQF Levels	7-8
Departments	R&D (Research and Development)
Profile Sectors	Pharmaceutical industry, biotechnology, healthcare & life sciences R&D, chemical manufacturing, green & sustainable chemistry

Green Competences

Name	Type	Description	Level	ESCO
Green Chemistry	Knowledge	The process of creating chemical products that diminish or cancel the negative impact on the environment caused by the use of hazardous substances. It follows all the phases of chemical product generation from the design to the manufacturing and its disposal.	2	http://data.europa.eu/esco/skill/b589fa82-f177-4cce-9fb4-31bbbebf792b
Life cycle assessment (LCA)	Knowledge	Evaluate the use and possible recycling of raw materials in the whole product life cycle	2	http://data.europa.eu/esco/skill/4e87c852-602a-4a0e-b8d8-20709ce14ac5
Assess environmental impact	Skill	Monitor environmental impacts and carry out assessments to identify and to reduce the organisation's environmental risks while taking costs into account.	1	http://data.europa.eu/esco/skill/e541c69c-ea80-4b17-87cb-4001d0b9d303

Digital Competences

Name	Type	Description	Level	ESCO
Artificial Intelligence	Knowledge	Understanding the principles and potential applications of AI and algorithmic tools in research and innovation processes	2	http://data.europa.eu/esco/skill/e465a154-93f7-4973-9ce1-31659fe16dd2

SSbD (Safe and Sustainable by Design Chemicals)

Name	Type	Description	Level	ESCO
Sustainable manufacturing	Knowledge	The generation of manufactured products using efficient and sustainable production process that enhances the conservation of natural and energy resources while	3	http://data.europa.eu/esco/skill/f263da7f-0708-42

Name	Type	Description/Context	Level	ESCO
		minimizing negative environmental impacts.		c2-b1a9-390 83416f632
Develop new products	Skill	Conceive, design and develop new or improved products by translating research outcomes, technical requirements and market needs into product concepts, prototypes or formulations, while considering performance, safety, regulatory and sustainability aspects.	3	http://data.eur opa.eu/esco/sk ill/63f224ea-d 889-42ea-b3ef -730ef78c717 6

Transversal Competences

Name	Type	Description/Context	Level	ESCO
Communication, collaborating and creativity	Skill	Communicating, collaborating, liaising, and negotiating with other people, developing solutions to problems, creating plans or specifications for the design of objects and systems, composing text or music, performing to entertain an audience, and imparting knowledge to others.	2	http://data.e uropa.eu/es co/skill/0f99 58d2-f700-4 f62-b90b-a5 873cb5ae4c
Innovation processes	Skill	The techniques, models, methods and strategies which contribute to the promotion of steps towards innovation.	2	http://data.e uropa.eu/es co/skill/2fb8 480e-de3c- 462b-b169- e8bbb344da 68

Sector specific

Name	Type	Description/Context	Level	ESCO
Perform chemical experiments	Skill	Carry out chemical experiments in laboratory settings by following established protocols and safety procedures, including the preparation of materials, execution of experimental steps, observation and measurement of results, and documentation of outcomes for analysis and further research.	3	http://data.europa.eu/esco/skill/50f8b1de-747c-4967-9732-3db89c365261