

The German University in Cairo



Faculty of Pharmacy and Biotechnology

**Postgraduate Diploma of
Nanotherapeutics**

Program Catalogue

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Program Vision

The postgraduate Diploma of Nanotherapeutics provides a solid foundation in Nanomedicine Sciences in preparation for careers in Nanomedicine such as academia, industry, start-ups and translational medicine.

Program Mission

The program is offered for conferring advanced qualifications in Nanotherapeutics by developing scientific knowledge and research capabilities in the different disciplines of Nanotherapeutics. Graduates from the program will receive a high quality education of imperative breadth and depth to qualify them for leading positions in drug delivery and Nanomedicine and allowing them to pursue a career in the field or the opportunity to continue their masters degree. This could be achieved by:

1. Equipping the students with knowledge and practical skills that enhance their laboratory, research and professional competencies
2. Being able to bring a creative approach to the development and promotion of new nano-drug delivery systems.
3. Performing applied advanced research in the field of Nanotherapeutics.
4. Enabling the students to continue their postgraduate studies.
5. Enhancing of the students' soft skills and equipping them with needed technical skills to compete for jobs in the field nationally and internationally.

Career Opportunities

The Program equips the students with all needed skills to pursue future careers and assume leadership positions in the following fields:

1. Medical, Pharmaceutical, and Health Care places related to the area of nanomedicine
2. Research and Development in Pharmaceutical and Biotechnological Firms
3. Research institutes
4. Startups in nanotechnology and nanomedicine
5. Scientific writing
6. Pursuing Master degree

Graduate Attributes of the diploma of Nanotherapeutics

The diploma of Nanotherapeutics Program aims at developing knowledge and research capabilities and potential for critical scientific thinking, and deepening and/or broadening knowledge in nanomedicine and drug delivery through advanced postgraduate courses.

After finishing the diploma, the graduates will:

- Have the ability to apply their knowledge and understanding, and problem solving abilities, in new or unfamiliar environments within broader (or multidisciplinary) context related to Nanomedicine; nanotherapeutics
- Have the ability to integrate knowledge and handle complexity , and formulate judgments with incomplete or limited information, but that include reflecting on ethical responsibilities linked to the application of their knowledge and judgments;
- Have the ability to communicate their conclusion , and the knowledge and rational underpinning theses to specialists clearly and unambiguously;
- Have developed learning skills that will allow them to continue to study in a manner that may be largely self- directed or autonomous, and to take responsibility for their own professional development.
- Be equipped with the sufficient multidisciplinary knowledge and skills in the field of nanotherapeutics to be able to take charge and responsibility in areas related to different disciplines of concerned specialization.
- Have used their educational attainments for the benefit for human and public health in accordance with legal, ethical and bioethical principles.

Program Learning Outcomes

The abilities and skills of the program may be divided into three broad categories:

- a. Nanotherapeutics -related cognitive abilities and skills , i.e. abilities and skills relating to intellectual tasks including problem solving;
- b. Nanotherapeutics -related practical skills , i.e. skills relating to the conduct of advanced laboratory work;
- c. Generic skills that may be developed in the context of Nanotherapeutics and are of general nature and applicable in many other settings.

The main abilities and skills that students are expected to have after completing the Diploma in Nanotherapeutics Program at the German University in Cairo, GUC, are as follows:

a. Cognitive abilities and skills

- o Ability to demonstrate knowledge and understanding of essential facts, concepts, principles related to the subject area of research.

- Ability to apply such knowledge and understanding to the solution of qualitative and quantitative problem of unfamiliar nature encountered during performing the research project
- Ability to adopt and apply research methodology to the solution of unfamiliar problems.

b. Practical skills

- Skills required for the conduct of the advanced laboratory procedures and use of instruments on different research works.
- Ability to plan and carry out experiment independently and be self critical in evaluation of the experimental procedures and outcomes.

c. Generic skills

- Ability to assimilate, evaluate and present research results objectively.
- Communicate the research task both in an oral presentation and in writing.

Faculty of Pharmacy & Biotechnology

*Postgraduate Diploma of
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Curriculum

First Semester (20 ECTS CP)

Code		Course Name	Hours		ECTS CP
			L	P	
PHNT	1101	Nanotechnology Drug Delivery Systems	2		5
PHNT	1102	Nanotechnology Drug Delivery Systems		4	5
PHNT	1103	Nanotherapeutics for Infectious Diseases	2		5
PHNT	1104	Nanotherapeutics for Infectious Diseases		4	5
Total		SWS 12	4	8	<u>20</u>

Second Semester (20 ECTS CP)

Code		Course Name	Hours		ECTS CP
			L	P	
PHNT	1201	Advanced Nanotherapeutics	2		5
PHNT	1202	Advanced Nanotherapeutics		4	5
PHNT	1203	Biostatistics	2		5
PHNT	1204	Seminar	2		5
Total		SWS 10	6	4	<u>20</u>