

**Audience**

The course is aimed at graduates or doctorate students, pre- and post-doctoral scientists, in the fields of biology and / or chemistry and / or (bio) medicine. The course also welcomes health professionals and teachers interested in furthering Glycosciences: This course aims to build upon and complement the participant's previous knowledge of chemistry, molecular and cellular biology.

**Selection Criteria**

Curriculum vitae and motivation letter

**Numerus Clausus**

(Minimum and maximum number of entrants admissible to the course)

Minimum: 8

Maximum: 25

**Course Dates**

1st Stage: From 31 July 2019 up to six months

2nd Stage: From 30 September 2019 up to six months

**Application Deadline**

1st Stage: 21 July 2019

2nd Stage: 15 September 2019


**On-Line Application****Course fees:**

Application: 51€ (non-refunded)

Registration: 35€

General Fee: 470€

Students Fee: 399,50€

GLYC  **biology & chemistry**
e-learning course

5th
edition

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Scientific Coordinators

Paula Videira

Departamento de Ciências da Vida, Faculdade de Ciências e Tecnologia, Universidade NOVA de Lisboa, Portugal

Amélia Pilar Rauter

Faculdade de Ciências, Universidade de Lisboa, Portugal

For more information:

Divisão Académica - Secção de Pós-Graduação
Campo Mártires da Pátria, 130 - 1169-056 Lisboa
posgraduacao@nms.unl.pt | www.nms.unl.pt
Tel.: +351 21 880 30 66 | Fax: +351 21 880 30 68

NOVA MEDICAL SCHOOL
FACULDADE DE CIÊNCIAS DA VIDA
UNIVERSIDADE NOVA DE LISBOA

FCT FACULDADE DE
CIÊNCIAS E TECNOLOGIA
UNIVERSIDADE NOVA DE LISBOA

C CIÊNCIAS
ULISBOA

UNIVERSIDADE NOVA DE LISBOA

U LISBOA UNIVERSIDADE DE LISBOA

5th

Glycobiology & Glycochemistry International E-learning Course: 2019 Edition

Scientific Coordinators

Paula Videira- Departamento de Ciências da Vida, Faculdade de Ciências e Tecnologia,
Universidade NOVA de Lisboa, Portugal
Amélia Pilar Rauter- Faculdade de Ciências, Universidade de Lisboa, Portugal

Pedagogical Coordinator

Irene Tomé- Faculdade de Ciências Sociais e Humanas, Universidade NOVA de Lisboa, Portugal

Scientific Advisors

Celso Reis- Instituto de Patologia e Imunologia Molecular da Universidade do Porto, Portugal.
Serge Perez - Centre de Recherches sur les Macromolécules Végétales, Centre National de la Recherche Scientifique. Grenoble, France.
Angelina Palma- REQUIMTE/CQFB Departamento de Química, Faculdade de Ciências e Tecnologia, Universidade NOVA de Lisboa, Portugal.
Nuno Xavier- Faculdade de Ciências, Universidade de Lisboa, Portugal

Presentation

Glycoscience has become a vibrant, expanding and important extension of modern molecular biology and medicine. In this course, a team of acknowledged glycoscientists will demonstrate how interdisciplinary areas in Glycosciences have provided solutions and offered tools for demanding health problems. This is the first course in Glycobiology and Glycochemistry, offered in an e-learning format to enhance the outreach of Glycosciences to the broader scientific community. Funded by the Euroglycoforum and EMBO, this course is also part of the GlycoCan European Training Network and the European Innovation Partnership on Active and Healthy Ageing. This course aims to create a forum of “scientifically bilingual” investigators fluent in glycan chemistry and biology that will sustain and advance the application of Glycosciences to human health.

Objectives

The general aim of this course is to provide an easy-to-understand, succinct, and current overview of the fundamental facts, concepts, and methods in Glycosciences. It aims to encourage research in Glycosciences, by revealing the complex involvement of glycans in distinct human-related physiological and pathological conditions.

Successful learners will be able to:

Describe and compare the different types of glycans.
Design methodologies / technologies to analyse glycans structures or glycans biosynthesis.
Discuss scientific subjects within the scope of Glycosciences.
Explain the relationship between glycan structures and physiological and pathological human conditions.

Competences

Design and development of projects in the areas of Glycosciences and its application in health. Design methodologies/technologies to develop or analyze glycans.

Jobs Opportunities

Research institutions in the area of Glycosciences and in broader areas such as Chemistry, Biology and Biomedicine. Higher education and research institutions. Pharmaceutical and food industry. Diagnostic laboratory.

Study Plan

Module 1: Carbohydrate Structure and Nomenclature
Module 2: Biosynthesis, Metabolism of Carbohydrates
Module 3: Glycan-binding Proteins
Module 4: Glycans in Human Physiological Mechanisms
Module 5: Glycans in Human Pathology
 5.1 Cancer
 5.2 Congenital Disorders of Glycosylation
Module 6: Methods in Glycosciences
Module 7: Applications of Glycosciences
Module 8: Glycochemistry in Medicine
Module 9: Biosynthesis of disease related carbohydrate antigens
Module 10: Glycomics

Assessment

The learner's final grade in the course will be based on performance along the activities included in the course, which includes online examinations and/or a report. The final report will consist on a critical review (limited to 30 pages) or highlights (limited to 15 pages) covering one year or up to 5 years on a particular subject of Glycobiology and/or Glycochemistry research. These highlights are particularly important in presenting the latest findings and the innovation concerning carbohydrate chemistry and biology. The publication of these highlights in peer review journals can be considered upon request to the Editors after submission to refereeing processes.

Teaching staff

- Alexandre Ferreira- Institute of Oncology of Porto, Portugal
- Amélia Pilar Rauter -Faculdade de Ciências, Universidade de Lisboa, Portugal
- Angelina Palma- REQUIMTE/CQFB Departamento de Química, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Portugal
- Anne Dell- Imperial College, London, UK
- Anne Imberty - Centre National de la Recherche Scientifique. Grenoble, France
- Antonio Molinaro- Università di Napoli “Federico II”, Napoli, Italy
- Antoni Planas- Universitat Ramon Llull, Spain
- Catherine Ronin- SiaMed'Xpress, Université de Provence, Marseille, France
- Celso Reis- Instituto de Patologia e Imunologia Molecular da Universidade do Porto, Portugal
- Christelle Breton- Centre National de la Recherche Scientifique. Grenoble, France
- Dirk Lefeber- Radboud University Nijmegen Medical Centre, Netherland
- Fabio Dall'Olio- Faculty of Medicine, Bologna University, Italy
- Hans H. Wandall - University of Copenhagen, Denmark
- Jesus Jiménez Barbero- Consejo Superior de Investigaciones Científicas, Madrid, Spain
- Joy Burchel - King's College London, UK
- Jaak Jaeken- University Hospital Gasthuisberg, Leuven, Belgium
- Joseph Lau- Roswell Park Cancer Institute, Buffalo, USA
- Koichi Fukase- Graduate School of Science, Osaka University, Osaka, Japan
- Marco Trinchera- The University of Insubria, Italy
- Michaela Wimmerova- Central European Institute of Technology, Czech Republic
- Paula Videira- Faculdade de Ciências e Tecnologia, Universidade NOVA de Lisboa, Portugal
- Philippe Delannoy- Université des Sciences et Technologies de Lille, France
- Richard Schmidt- University of Konstanz, Germany
- Robert Sackstein- Program of Excellence in Glycosciences, Harvard Medical School, USA
- Rui Vitorino- University of Aveiro, Portugal
- Sabine Flitsch- The University of Manchester, UK
- Stefan Oscarson- University College Dublin, Ireland
- Serge Perez- Centre National de la Recherche Scientifique. Grenoble, France
- Ten Feizi - Imperial College, London, UK
- Vanessa Ferreira – CDG Portuguese Association and other metabolic rare diseases (APCDG-DMR), Portugal
- Yves Queneau- Centre National de la Recherche Scientifique, Lyon, France
- Yvette Van Kooyk- Department of Molecular Cell Biology & Immunology Vumc, Netherland