

PROFESSIONAL TRAINING

YEAR: 2021-2023

Department: MSc Bioinformatics and Data Science (2021-2023)



COURSE COORDINATOR

Dr. D. Alex Anand

Associate Professor Department of Bioinformatics

SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY

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SUBMITTED BY:

Aqueeno Chacko

Reg no: 41739002

MSc. BIOINFORMATICS AND DATASCIENCE

2021-2023

SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY

PROFESSIONAL TRAINING

YEAR 2021-2023.

Drug Discovery

by University of California San Diego

DURATION: Approx. 9 hours.

OBJECTIVE:

In this course you will learn the drug discovery process up to the filing of an Initial New Drug Application or IND. Each week you will learn the steps that a pharmaceutical or biotech company goes through to discover a new therapeutic drug. In this course you will be able to:

- * Understand the pharmaceutical and biotechnology market a changing landscape
- * Learn the major aspects of the drug discovery process, starting with target selection, to compound screening to designing lead candidates.
- * Recognize current modern drug discovery based on the lock-and-key theory, which attempts to use one single compound to hit one target to combat the related disease.
- * Increase understanding of the various drug discovery tools and methods that are used for finding, identifying and designing a new drug.
- * Define and understand the regulatory responsibilities for drug discovery to file an Investigational New Drug Application (IND).

UC San Diego

Jun 3, 2022

Aqueeno Chacko

has successfully completed

Drug Discovery

an online non-credit course authorized by University of California San Diego and offered through Coursera

COURSE
CERTIFICATE



Williams Ettouati

Williams Ettouati, PharmD
Managing Director, Master of Science in Drug Development &
Product Management
Health Sciences Associate Clinical Professor
Associate Director, Center for Drug Discovery Innovation
Director, Education Innovation Support Team
Office of The Executive Vice Chancellor
University of California San Diego
Skaggs School of Pharmacy and Pharmaceutical Sciences

A handwritten signature in black ink, appearing to read "Joseph D. Ma".

Joseph D. Ma, Pharm.D.
Associate Professor
Skaggs School of Pharmacy & Pharmaceutical Sciences
University of California, San Diego

Verify at:
<https://coursera.org/verify/D88UTWESKNT5>
Coursera has confirmed the identity of this individual and their
participation in the course.

Industrial Biotechnology

by University of Manchester

DURATION: Approx. 11 hours.

OBJECTIVE:

Fossil fuels have been the primary energy source for society since the Industrial Revolution. They provide the raw material for the manufacture of many everyday products that we take for granted, including pharmaceuticals, food and drink, materials, plastics and personal care.

As the 21st century progresses we need solutions for the manufacture of chemicals that are smarter, more predictable and more sustainable. Industrial biotechnology is changing how we manufacture chemicals and materials, as well as providing us with a source of renewable energy. It is at the core of sustainable manufacturing processes and an attractive alternative to traditional manufacturing technologies to commercially advance and transform priority industrial sectors yielding more and more viable solutions for our environment in the form of new chemicals, new materials and bioenergy. This course will cover the key enabling technologies that underpin biotechnology research including enzyme discovery and engineering, systems and synthetic biology and biochemical and process engineering. Much of this material will be delivered through lectures to ensure that you have a solid foundation in these key areas. We will also consider the wider issues involved in sustainable manufacturing including responsible research innovation and bioethics. In the second part of the course, we will look at how these technologies translate into real world applications which benefit society and impact our everyday lives. This will include input from our industry stakeholders and collaborators working in the pharmaceutical, chemicals and biofuels industries. By the end of this course, you will be able to:

1. Understand enzymatic function and catalysis.
2. Explain the technologies and methodologies underpinning systems and synthetic biology.
3. Explain the diversity of synthetic biology application and discuss the different ethical and regulatory/governance challenges involved in this research.
4. Understand the principles and role of bioprocessing and biochemical engineering in industrial biotechnology.
5. Have an informed discussion of the key enabling technologies underpinning research in industrial biotechnology
6. Give examples of industrial biotechnology products and processes and their application in healthcare, agriculture, fine chemicals, energy and the environment.



The University of Manchester

May 20, 2022

Aqueeno Chacko

has successfully completed

Industrial Biotechnology

an online non-credit course authorized by University of Manchester and offered through Coursera

Prof. Nicholas Turner, Prof. Nigel Scrutton, Dr. Nicholas Weise

COURSE
CERTIFICATE



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<https://coursera.org/verify/UDMQQUJD4FUC>

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SQL for Data Science

by University of California, Davis

Duration: Approx. 14 hours.

OBJECTIVE:

This course is designed to give you a primer in the fundamentals of SQL and working with data so that you can begin analyzing it for data science purposes.

You will begin to ask the right questions and come up with good answers to deliver valuable insights for your organization.

This course starts with the basics and assumes you do not have any knowledge or skills in SQL. It will build on that foundation and gradually have you write both simple and complex queries to help you select data from tables. In addition to this:

- You'll start to work with different types of data like strings and numbers and discuss methods to filter and pare down your results.
- You will create new tables and be able to move data into them.
- You will learn common operators and how to combine the data.
- You will use case statements and concepts like data governance and profiling.
- You will discuss topics on data, and practice using real-world programming assignments.
- You will interpret the structure, meaning, and relationships in source data and use SQL as a professional to shape your data for targeted analysis purposes.

UC DAVIS

Jun 3, 2022

Aqueeno Chacko

has successfully completed

SQL for Data Science

an online non-credit course authorized by University of California, Davis and offered through Coursera



Sadie St. Lawrence
Founder of Women in Data (WID)
Instructor, Continuing and Professional Education

COURSE
CERTIFICATE



Verify at:

<https://coursera.org/verify/47MTA2B3RYTU>

Coursera has confirmed the identity of this individual and their participation in the course.

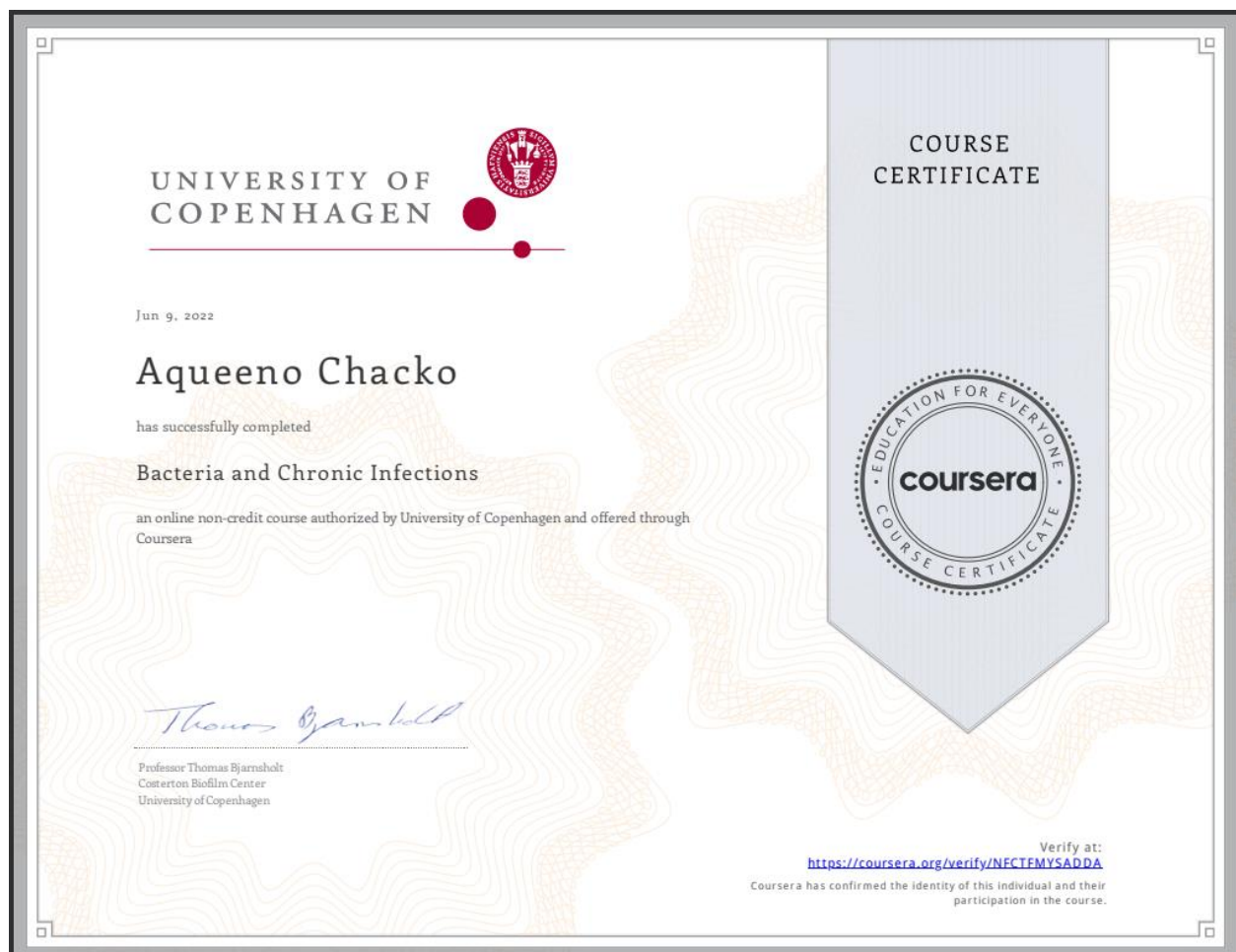
Bacteria and Chronic Infections

by University of Copenhagen

DURATION: Approx. 10 hours.

OBJECTIVE:

This course will give you an introduction to bacteria and chronic infections. Leading experts in the field will make you familiar with the fundamental concepts of microbiology and bacteriology such as single cell bacteria, biofilm formation, and acute and chronic infections.



PYTHON

OBJECTIVE

Python is a computer programming language often used to build websites and software, automate tasks, and conduct data analysis. Python is a general-purpose language, meaning it can be used to create a variety of different programs and isn't specialized for any specific problems.

SKILLS

- Function and getting help
- Booleans and conditionals
- Lists
- Loops and list comprehensions
- Strings and dictionaries
- Working with external libraries

