

# MOLECULAR PATHOLOGY OF CANCER AND APPLICATION IN DIAGNOSIS, SCREENING AND TREATMENT

Duration	5 days of face-to-face teaching plus self-directed learning
Cost:	£1250. If you are an NHS employee, full funding is available through Health Education England
Tutors:	Dr Anita Grigoriadis – King's College London, Senior Lecturer in Cancer Bioinformatics
Location:	King's College London (London Bridge campus)



**This module aims to provide students with the knowledge and competencies in basic molecular pathology of cancer to be able to accurately assess methods used in cancer diagnosis, screening, and treatment.**

**The module will guide you from a basic introduction in cancer biology, to comparing and contrasting genomic information applied in the diagnosis, classification, treatment of cancer. We will also look at immune-oncology and its associated technologies, and interpret basic statistics and screening methods. We mainly focus on RNA-sequence, exome and whole genome sequence analyses of tumour tissue in the context of biomarker development and clinical relevance of treatment response.**

## AIMS

This module aims to provide you with the knowledge and competencies in basic molecular pathology of cancer to be able to accurately assess methods used in cancer diagnosis, screening, and treatment.

## LEARNING OUTCOMES

On successful completion of the module, you should be able to:

- Apply the principles of cancer development and emerging changes in molecular classification.
- Compare and contrast the genomic basis of cancer predisposition, and how this is used to identify people and families at higher risk of cancer.
- Critically evaluate how genomic information is currently applied in the diagnosis, classification, treatment selection and monitoring of cancer.
- Analyse how information from whole exome, whole genome, RNA-sequencing as well as immune cell repertoire analysis of tumour tissue can be used to investigate the molecular and cellular processes leading to cancer immune tumour microenvironment and inform strategies for drug development and biomarker identification.

## ENTRY REQUIREMENTS

Applicants should have a minimum of a lower second class degree (2:2) in a subject that offers an appropriate grounding in science, genetics or healthcare. Alternative professional qualifications may be considered.

## PREREQUISITES

We would recommend that candidates interested in this module consider first completing one or more of the following modules from our Genomic Medicine portfolio: Omics Techniques and Technologies and Their Application to Genomic Medicine; Bioinformatics, Interpretation, Statistics and Data Assurance; and Genomics of Common and Rare Inherited Diseases.

We offer Massive Open Online Courses (MOOCs) which you can study online to deepen your understanding.

We suggest the following courses:

The Genomics Era: the Future of Genetics in Medicine

Genomic Technologies in Clinical Diagnostics: Molecular Techniques

Genomic Technologies in Clinical Diagnostics: Next Generation Sequencing

These courses are available at: [www.futurelearn.com/partners/sgul](http://www.futurelearn.com/partners/sgul)

More information at [kcl.ac.uk/genomicmedicine](http://kcl.ac.uk/genomicmedicine)  
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