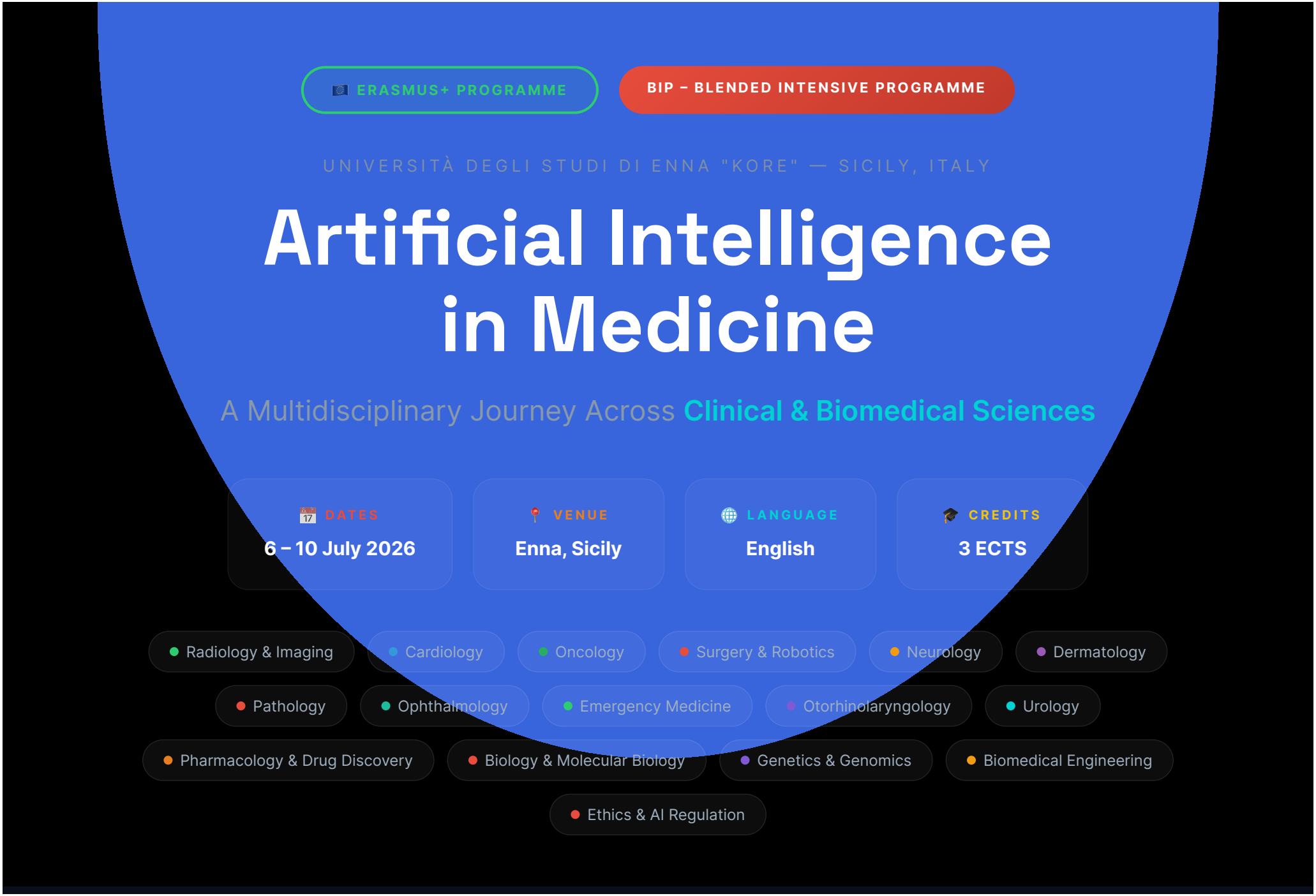
ERASMUS+ PROGRAMME
BIP – BLENDED INTENSIVE PROGRAMME
UNIVERSITÀ DEGLI STUDI DI ENNA "KORE" — SICILY, ITALY
Artificial Intelligence in Medicine
A Multidisciplinary Journey Across Clinical & Biomedical Sciences
DATES
6 – 10 July 2026
VENUE
Enna, Sicily
LANGUAGE
English
CREDITS
3 ECTS
Radiology & Imaging
Cardiology
Oncology
Surgery & Robotics
Neurology
Dermatology
Pathology
Ophthalmology
Emergency Medicine
Otorhinolaryngology
Urology
Pharmacology & Drug Discovery
Biology & Molecular Biology
Genetics & Genomics
Biomedical Engineering
Ethics & AI Regulation

🖥️Online Preparatory Phase

June 22 – July 3, 2026 | Asynchronous modules + 2 Live Webinars

Participants will build foundational knowledge on AI/ML concepts, biological and molecular bases for computational medicine, and ethical frameworks before the in-person week.

- 📘 Introduction to Machine Learning & Deep Learning
- 🧬 Molecular Biology & Genetics Refresher for AI Applications
- 🧠 Neural Networks & Computer Vision Basics
- 🏥 AI in Healthcare: Landscape Overview
- 📊 Medical Data Types, Standards & Ethical Issues
- 💊 Computational Pharmacology Primer
- ⚙️ Biomedical Signal Processing Fundamentals
- 💬 Live Webinar #1 – June 26, 17:00 CET
- 💬 Live Webinar #2 – July 3, 17:00 CET

In-Person Programme

Five intensive days of keynotes, lectures, hands-on labs, workshops, and cultural experiences in the heart of Sicily

DAY 1 Monday, July 6

Opening, AI Foundations, Biology, Genetics & Radiology

09:00 – 09:45

Welcome Address & BIP Overview

Rector of Università di Enna "Kore" & Programme Coordinators

OPENING

10:00 – 11:00

Keynote: The AI Revolution in Clinical & Biomedical Sciences

Invited Speaker – TBA

KEYNOTE

11:15 – 12:15

AI Meets Biology: Machine Learning for Molecular & Cellular Analysis

Cell segmentation, protein structure prediction, omics data

LECTURE

12:20 – 13:10

AI in Genetics & Genomics: From Variant Calling to Polygenic Risk Scores

Genome-wide association studies, AI-driven genetic counselling

LECTURE

14:30 – 16:00

Hands-On Lab: Python for Medical AI – Environment Setup & First Classifier

Jupyter, Scikit-learn, TensorFlow / PyTorch

HANDS-ON LAB

16:15 – 17:30

AI in Radiology: Computer-Aided Detection for X-ray, CT & MRI

Deep learning for diagnostic imaging, FDA-approved tools

LECTURE

19:00

Welcome Dinner & Networking – Sicilian Evening

SOCIAL EVENT

DAY 2 Tuesday, July 7

Cardiology, Neurology, Emergency Medicine & Pharmacology

09:00 – 10:15

AI-Driven ECG Analysis & Cardiac Risk Prediction

Deep learning for arrhythmia detection, echocardiographic AI

LECTURE

10:30 – 11:45

Neuroimaging & AI: Brain Tumour Segmentation, Stroke Detection & Alzheimer's Early Diagnosis

CNNs in neuroradiology, EEG signal analysis

LECTURE

12:00 – 12:45

AI in Emergency Medicine: Real-Time Triage & Clinical Decision Support

Predictive models for sepsis, trauma & acute care

LECTURE

12:50 – 13:30

AI in Pharmacology: Drug Discovery, Repurposing & Adverse Event Prediction

Computational drug design, QSAR models, pharmacovigilance AI

LECTURE

14:45 – 16:45

Workshop: Building a Cardiac Arrhythmia Classifier & Drug Interaction Predictor

Hands-on with ECG datasets & molecular fingerprint models

WORKSHOP

17:00 – 17:45

Panel: AI Adoption Barriers in Hospitals & Pharma R&D

Clinicians, pharmacologists & industry speakers

PANEL

DAY 3 Wednesday, July 8

Oncology, Pathology, Genomic Medicine & Molecular Biology

09:00 – 10:15

AI for Cancer Screening: Mammography, Colonoscopy & Lung CT

Early detection models, clinical validation & FDA pathways

LECTURE

10:30 – 11:45

Digital Pathology: AI-Assisted Histopathological Analysis & Automated Grading

Whole slide imaging, immunohistochemistry quantification

LECTURE

12:00 – 12:45

AI & Precision Genomic Medicine: From NGS Data to Treatment Selection

Variant interpretation, liquid biopsy AI, tumour mutational burden

LECTURE

12:50 – 13:30

AI in Molecular Biology: Protein Folding, Single-Cell Transcriptomics & CRISPR Design

AlphaFold, scRNA-seq analysis, guide RNA optimisation

LECTURE

14:45 – 16:45

Hands-On: Tumour Classification from Histology Images & Genomic Variant Analysis

Transfer learning with pre-trained CNNs, bioinformatics pipelines

HANDS-ON LAB

17:15 – 18:45

Guided Visit: Historical Enna & Castello di Lombardia

CULTURAL ACTIVITY

DAY 4 Thursday, July 9

Surgery & Robotics, Ophthalmology, Dermatology, ENT, Urology & Biomedical Engineering

09:00 – 10:00

Robotic Surgery & AI: Intraoperative Guidance, Planning & Autonomous Assistance

Computer vision in the OR, surgical workflow recognition

LECTURE

10:10 – 10:55

AI in Ophthalmology: Diabetic Retinopathy, Glaucoma & AMD Screening

Retinal image analysis, OCT-based deep learning

LECTURE

11:10 – 11:55

AI-Powered Dermatology: Skin Lesion Classification & Melanoma Detection

Dermoscopy image CNNs, teledermatology AI

LECTURE

12:05 – 12:50

AI in Otorhinolaryngology: Audiometry Analysis, Sleep Apnoea Detection & Voice Disorder Diagnostics

Acoustic AI models, endoscopic image analysis, hearing aid optimisation

LECTURE

12:55 – 13:35

AI in Urology: Prostate Cancer Detection, Kidney Stone Prediction & Bladder Analysis

mpMRI AI, uroflowmetry ML models, cystoscopy image classification

LECTURE

14:45 – 16:45

Workshop: Multi-Specialty Image Classification Challenge

Retinal, dermoscopy, ENT endoscopy & urological image datasets – Kaggle-style team competition

WORKSHOP

17:00 – 17:50

Biomedical Engineering Spotlight: Wearables, Biosensors & AI-Enabled Medical Devices

Edge AI, real-time physiological monitoring, regulatory pathways

LECTURE

DAY 5 Friday, July 10

LLMs in Medicine, NLP, Ethics, Regulation, Group Project, Presentations & Closing

09:00 – 10:15

Keynote: Large Language Models in Medicine – Opportunities, Risks & the Road Ahead

Invited Speaker – TBA

KEYNOTE

10:30 – 11:15

Natural Language Processing for Clinical Notes, EHRs & Biomedical Literature Mining

Named entity recognition, clinical BERT, automated coding

LECTURE

11:25 – 12:10

EU AI Act & Medical Device Regulation: Legal Frameworks for AI in Healthcare

CE marking, SaMD classification, post-market surveillance

LECTURE

12:15 – 13:00

Bias, Fairness & Explainability in Medical AI

Algorithmic transparency, SHAP/LIME, patient trust, health equity

LECTURE

14:15 – 15:45

Group Project Presentations & Peer Evaluation

Each team presents their AI-for-Medicine / Biomedicine solution to a jury panel

PRESENTATIONS

15:45 – 16:15

Best Project Awards & Feedback Session

Prizes for Best Innovation, Best Clinical Impact, Best Technical Approach

AWARDS

16:30 – 17:15

Round Table: The Future of AI Across All Medical & Biomedical Disciplines

Faculty, students, clinicians & guest speakers

ROUND TABLE

17:15 – 17:45

Closing Ceremony & Certificate Delivery

Certificates of Completion & ECTS recognition letters

CLOSING

19:30

Farewell Gala Dinner – Terrace with Panoramic View of Mount Etna

SOCIAL EVENT

🔧 Practical Information

🎓

3 ECTS Credits

Recognised by all partner universities upon successful completion of assignments & minimum attendance

👥

Target Audience

Medical students, biology & genetics students, biomedical engineering students, pharmacy students, health sciences students, residents & early-career researchers

✈️

Erasmus+ Funding

Eligible students may receive Erasmus+ BIP grants for travel & subsistence. Contact your home university's International Office

What to Bring

Laptop with Python 3.x. Detailed setup instructions provided during the online phase. All datasets pre-loaded

Assessment

Active participation, daily quizzes, hands-on lab deliverables, & final group project presentation. Min. 80% attendance required

Accommodation

A curated list of recommended hotels & B&Bs near the Kore campus will be shared with accepted participants