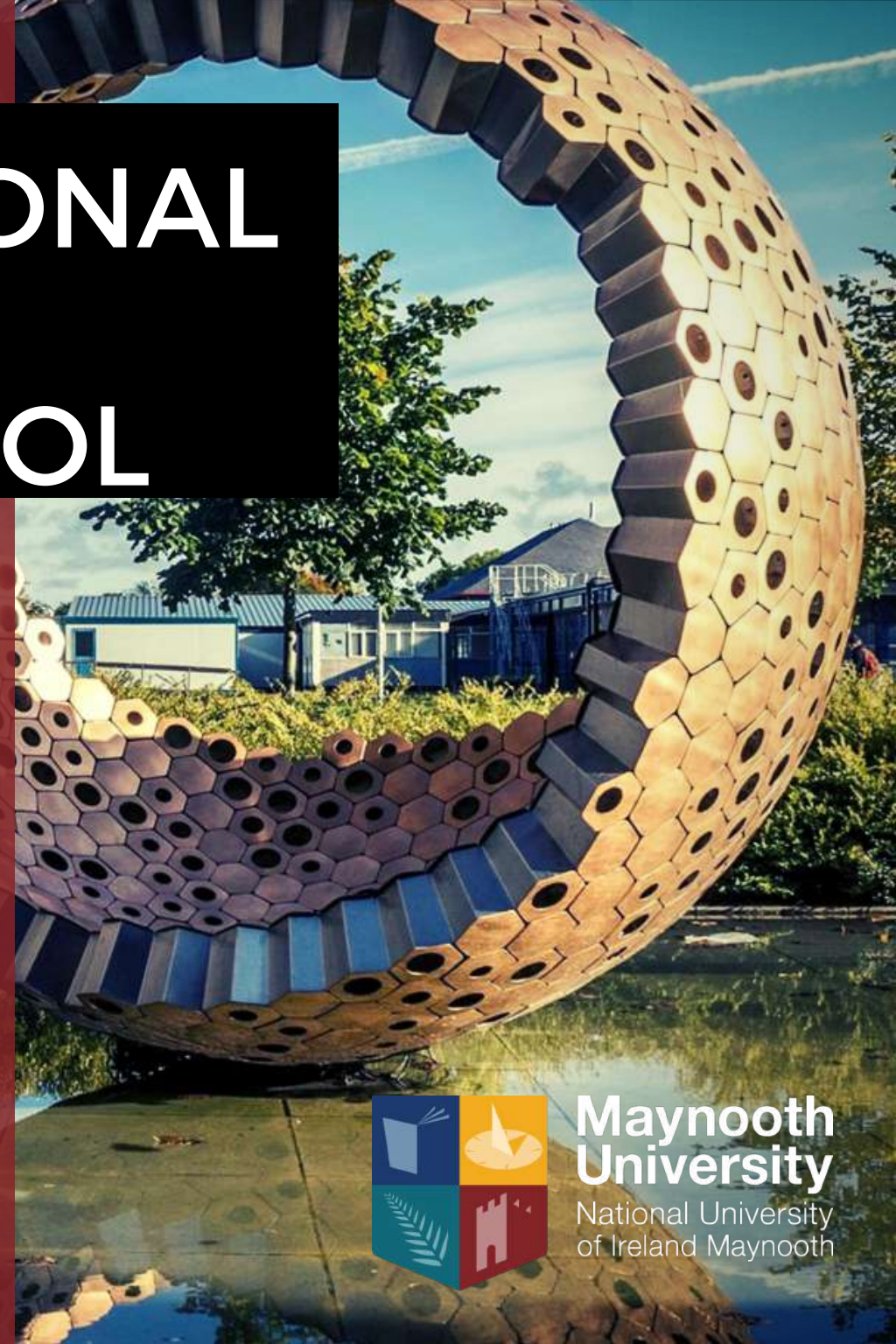# MU INTERNATIONAL ENGINEERING SUMMER SCHOOL

IRELAND | JUNE 20 - JULY 31 2020

Maynooth University
National University
of Ireland Maynooth

OUR PROGRAM PACKAGE

24-7 ON CALL STAFF
To support, encourage and enable you!

HOUSING
Stay on campus in apartment-style living

ACADEMIC TRIPS
Enjoy tours and visits that complement your learning

ACTIVITES AND FACILITIES
Enjoy on-campus activities and have access to all our facilities throughout the program

MEALS
Breakfast & Lunch included on-campus Monday-Friday

EXTRA ADVENTURES
Explore Ireland with our exciting optional Friday day trips

Maynooth University
National University of Ireland Maynooth

ACADEMICS

COMBINE FROM A
SELECTION OF 8
GEN ED CLASSES
WITH YOUR CHOICE
OF OUR ELECTRONIC
ENGINEERING AND
COMPUTER SCIENCE
CLASSES

ACADEMIC SCHEDULE

OUR TAILORED ENGINEERING INTERNATIONAL SUMMER SCHOOL OFFERS YOU THE CHANCE TO GAIN CREDIT WHILST ENJOYING CLASSES WITH OUR EXPERIENCED AND ENTHUSIASTIC INSTRUCTORS.

ALL OUR CLASSES ARE FULLY ACCREDITED AND CARRY MAYNOOTH UNIVERSITY TRANSCRIPTS.

YOUR CLASSES ARE TAUGHT WITH 40 CONTACT HOURS AND RUN FOR AT LEAST 2 DAYS A WEEK FOR THE FULL DURATION OF THE PROGRAM.

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COMPUTER SCIENCE: ALGORITHMS AND DATA STRUCTURES

Introduction to algorithms and data structures. This course includes a review of elementary programming concepts suitable for the implementation of abstract data types (operators, types and expressions; control of flow; methods; recursion; input & output); Algorithms for searching: linear, bounded linear and binary searches; Algorithms for sorting: selection, insertion, bubble and quick sorts; Fundamental linear data structures: stacks, queues, linked lists; Object-oriented programming: encapsulation and information hiding, classes, interfaces, class hierarchies, inheritance, polymorphism, basic exception handling; Analysis of basic algorithms.

COMPUTER SCIENCE: SOFTWARE DESIGN

In the course students will be introduced to principles and practices of object oriented software analysis, design, and programming using C++. The course will be delivered in two halves. The first half will focus on taking students from the basics of C++, through to objected oriented and generic programming. Topics covered will include (i) basic C++ syntax and program structure, (ii) primitive and abstract data-types, (iii) arrays, pointers, and dynamic memory management, (iv) object oriented programming (encapsulation, inheritance, polymorphism, etc.), and (v) generic programming and the STL. Note that the course assumes that students already have a good level of programming competency, but that they have not previously programmed in C++.

ELECTRONIC ENGINEERING: ELECTRICAL CIRCUITS

This course looks at some more advanced topics in circuit theory such as the use of the Laplace Transform, and passive filter design. The course also continues the study of electromagnetics, and in particular electromechanical energy conversion, looking at simple motors and generators. At the end of the course students will be able to: use Laplace and Inverse Laplace transforms to determine transients in circuits with switches; explain conceptually what resonance and bandwidth mean in the context of RLC networks; list and draw the frequency specifications of the four basic types of filter; design a passive filter based on a Butterworth or Chebyshev response given a desired specification; draw a Bode Plot of a network function; analyse magnetic circuits.

CHOOSE ONE CLASS FROM AN OPTION OF 8 DIFFERENT CLASSES ACROSS A WIDE RANGE OF DISCIPLINES

INTRODUCTION TO THE ANTHROPOLOGY OF IRELAND	CREATIVE WRITING
INTERNATIONAL MARKETING	CLIMATE CHANGE
ECONOMICS OF THE EUROPEAN UNION	IRELAND AND THE GREAT FAMINE
PUBLIC SPEAKING AND COMMUNICATIONS	THE CULTURAL HERITAGE OF MEDIEVAL SOCIETY

MAYNOOTH UNIVERSITY

Where Old meets New

LOCATED ON ONE OF IRELAND'S OLDEST SITES OF LEARNING, MAYNOOTH IS ALSO IRELAND'S NEWEST UNIVERSITY.

THE SITE OF THE SOUTH CAMPUS HAS BEEN A CENTRE OF LEARNING SINCE AT LEAST 1425, AFFILIATED WITH MAYNOOTH CASTLE, LOCATED JUST OUTSIDE OUR CAMPUS GATES.

MAYNOOTH WAS FORMALLY FOUNDED IN 1795 AS ST. PATRICK'S COLLEGE, IRELAND'S 'NATIONAL' SEMINARY.

IN 1997 MAYNOOTH UNIVERSITY WAS FOUNDED AS PART OF THE NATIONAL UNIVERSITY OF IRELAND,

TODAY MAYNOOTH UNIVERSITY HAS APPROXIMATELY 13,000 STUDENTS FROM OVER 90 COUNTRIES. THIS SUMMER MAYNOOTH UNIVERSITY WELCOMES YOU TO SHARE IN OUR HISTORY, HERITAGE AND FUTURE!

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WWW.TINYURL.COM/MUISS

MAYNOOTH

Ireland's Only University Town

NAMED AFTER THE ANCIENT IRISH GOD NUADHA, MAYNOOTH WAS ONCE IRELAND'S CAPITAL.

LOCATED JUST 30 MINUTES FROM DUBLIN CITY CENTRE, TODAY IT IS A SMALL BUT THRIVING CENTRE FULL OF SHOPS, RESTAURANTS, BARS AND CLUBS.

BEING A UNIVERSITY TOWN, MAYNOOTH IS KNOWN FOR ITS WARM AND FRIENDLY NATURE AND FOR WELCOMING NEWCOMERS FROM ALL OVER THE WORLD.

EVERYTHING YOU NEED IS JUST A FEW MINUTES AWAY – THAT'S THE BEAUTY OF MAYNOOTH!

ACCOMMODATION

Stay in our Village apartment-style residence.
enjoy a single room with shared washrooms, 2 per 5-room apartment
our Kitchens include key appliances and utensils

FACILITIES

WiFi is available throughout campus. Laundry is on-site and just €3.50 a load. Take full advantage of all Maynooth University Facilities, including our sports hall, gym, library, computer banks, extensive grounds and food outlets.

MEALS

Enjoy **BREAKFAST** & **Lunch**
Monday-Friday

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National University
of Ireland Maynooth

EXPERIENCE IRELAND AND
BUILD YOUR OWN ADVENTURE

OUTSIDE THE CLASSROOM

ACTIVITIES

INCLUDED IN EVERY ACADEMIC CLASS ARE TRIPS TO VISIT SITES, INSTITUTIONS AND COMPANIES RELEVANT TO COURSE MATERIAL. THESE OFFER AN UNPARALLELED INSIGHT INTO THE IRISH LANDSCAPE, SOCIETY AND CULTURE!

DAY TRIPS & ACTIVITIES

VISIT DUBLIN AND THE GUINNESS STOREHOUSE | LEARN HOW TO PLAY IRISH GAELIC FOOTBALL | REGULAR SOCIAL NIGHTS OUT | SCAVENGER HUNTS | ULTIMATE FRISBEE | TRAMPOLINING | LOCAL HIKES | AND MUCH MUCH MORE!

WEEKENDS

OIN OUR OPTIONAL FRIDAY DAY TRIPS TO BELFAST CITY IN NORTHERN IRELAND| GALWAY CITY | KILKENNY CITY | CHOOSE TO EXTEND YOUR VISITS TO WEEKEND TRIPS AND SEE PARTS OF IRELAND THAT OUR UNIQUE TO THE WORLD

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A TYPICAL WEEK

YOUR SUMMER SCHEDULE

Class: Monday-Thursday| 9.30am-12pm | 12.45pm-3.15pm with class only in computer science and electronic engineering for weeks 1 and 2

Downtime and social activities with our staff and your classmates

An on-campus activity on at least two evenings a week

Decide to go on a day trip or a weekend adventure to finish the week

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PROGRAM COST | €4,100

- ON-CAMPUS ACCOMMODATION THROUGHOUT
- BREAKFAST MONDAY-FRIDAY
- LUNCH MONDAY-FRIDAY
- ALL TUITION AND TRANSCRIPTS
- ALL ACADEMIC FIELD TRIPS AND ORIENTATION DAY TRIP TO DUBLIN
- 24-7 STAFF ON CALL
- ACTIVITIES ON CAMPUS
- AIRPORT TRANSFERS AT SET TIMES
- PUBLIC TRANSPORT LEAP CARD
- ALL-IRELAND HERITAGE PASS

SCHOLARSHIPS AVAILABLE

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Maynooth University
National University
of Ireland Maynooth

FIND OUT MORE

KICKSTART YOUR SUMMER:

WWW.MAYNOOTHUNIVERSITY.IE/INTERNATIONAL| SUMMER.SCHOOL@MU.IE

00353 1 708 6467

MAYNOOTH UNIVERSITY SUMMER SCHOOLS

@MAYNOOTHUISS