# Frequently asked questions on:
# **Degree in Computing Studies**
# (Computer Science & Mathematical Science)
# CAO code GY306

This information leaflet gives basic information with an emphasis on answering the *Frequently Asked Questions, (FAQs)*, on the degree programme Computing Studies, (degree in Computing and Mathematics), CAO code GY306.

A separate brochure with more detailed technical information on the degree is also available.

If you have further enquiries please do not hesitate to contact us.

Further information may also be obtained at our internet site:

http://www.maths.nuigalway.ie

or send an email to:

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or

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The degree programme has been running since 1990. A leaflet on *Graduate Achievements of the first years' entries* is also available in which may be seen the many and varied career prospects. In summary, graduates find positions not only in the computer industry but also in the financial services sector, the public sector and other areas which require highly numerate graduates with computer experience. On account of the nature, diversity and quality of the programme and the varied employment prospects it is clear that a *downturn in any particular area will not greatly affect overall employment prospects.*

Answers to *Frequently Asked Questions (FAQs)*

## 1 *Do you need to be very good at Mathematics?*

*Some* ability in mathematics is required but it is not necessary to be "brilliant" by any means. Certain mathematical background is necessary for any deep study in the area of Computing/IT.

## 2 *What level of Mathematics is required?*

An A2 or better in Leaving Cert ordinary level Mathematics or a C3 or better in LC higher level Mathematics is required. These are sufficient.

## 3 *But will I be lost if I only have ordinary level Mathematics?*

People with ordinary level mathematics have graduated with high class honours. What is required is an ability to get stuck in, to solve problems and be able to work things out – these skills are extremely important in the workplace and graduates need the ability to think logically and be versatile with changing trends and job prospects.

## 4 *What are the main areas of Computer Science? Does this programme concentrate on any particular area of Computing?*

Generally in the Computer Science/IT area there are basically 3 areas: (a) Software; (b) Hardware; (c) Applications. This programme concentrates mainly on the *Software* end, although the programme will also deal with basic hardware and networking.

There are other programmes at NUI,Galway which concentrate on other areas: hardware (as in the Electronic Engineering degrees) and applications (as in the IT degree).

## 5 *Why have a programme dealing with both Computer Science and Mathematics?*

As you may know, the development of computers came about from the interaction of Engineers, who developed the hardware, and Mathematicians, who developed the software. Alan Turing and John von Neumann, the two *founders of modern computing*, Augusta Ada (the daughter of Lord Byron the poet), who thought up the idea of *programming* a computer, and George Boole, a Professor of Mathematics at UCC, who designed the *logic* behind computers, were all Mathematicians.

Modern computing methods such as *Cryptography* (used for secretly transmitting messages, on the internet, between financial institutions or any area where secrecy is required), *Coding and Compression of data* (used for example in CDs (as in *Encarta*) or on *DVDs*), and *Formal methods of Software Engineering*, to name a few, all rely heavily on mathematical techniques and analysis.

No *deep* study of the Computing area can take place without some sort of rigorous mathematical training.

## 6 *How is the programme broken down into different areas?*

The first year gives the basic scientific background. The second year consists of 4 units of Computer Science, 4 units of Mathematical Science and 4 units of options which can be taken in either area; third year has 4 units of Computer Science, 4 units of Mathematical Science and 2 units of options; in fourth year students take 4 units of Computer Science, 4 units of Mathematical Science, one unit of *Options* and also undertake a major project.

## 7 *How many get honours degrees?*

About 70% receive honours degrees, first or second class. There is not always a good correlation between entry points and class of degree.

## 8 *Where do graduates find employment?*

See the separate leaflet on *Graduate Achievements of the first years' entries.* A degree in this area means that graduates are in a unique position to obtain employment, directly upon graduation, in many diverse area and are not dependent on any particular area or industry.

## 9 *What are the main languages and Operating systems?*

The main programming language is C/C++. The main operating systems used are *UNIX* (or *Linux* on the PCs) and *Windows NT* or *Windows XP*. The laboratory designed for this programme will have dual boot — Linux and Windows NT or Windows XP as required.

## 10 *How many points will I need?*

These can vary from year from year depending on the demand, and applications, so no definite answer can be given. Previous years' points are *some* indication. It should be noted that anyone who gets into the programme no matter at what points' level has the *ability* to do very well but, as with *any* programme, the student must *apply* herself/himself to the given tasks as is necessary.

## 11 ***What is the difference between a Denominated Degree and the Undenominated Degree?***

In a denominated degree, such as this one, the student enters directly into a programme of study on the topic of the degree; some options or choices are allowed and some basic related material must be studied but essentially the *core* of the course is predetermined.

In the undenominated degree, the student enters a programme of study in which at the outset it is not decided in which degree subject(s) the student would graduate; the choice of such subject(s) is decided essentially at the end of second and third years.

It is possible under certain specific circumstances to transfer between programmes *provided all the prerequisites* have been studied for the programme to which the student wishes to transfer.