

Master of Science (MSc) in Telecommunications



myPotential
Leading to your achievement

Most electronic and software engineers are not designing consumer products but creating the electronic and computer systems that run the factories and organizations churning such consumer products; nor are they designing mobile phones but working on the networks and computers to operate mobile phone systems or the internet. The electronic and computer engineering industry is principally concerned with providing the myriad of specialist electronic instruments and systems that make life safer, more convenient, more reliable, and more interesting. It is concerned with flight simulators and body scanners, global positioning satellites and remote sensors, computer information networks and e-Commerce. These are special applications that British Universities and Industry excel in, and if you think you could develop and manage Malta's future technology, and you have talent and vision, this is the programme for you.

The MSc Telecommunications is awarded by the University of London. MSc students study eight taught course units, and also undertake an individual project equivalent to four taught course units. Telecommunications networks are changing to use Internet Protocol (IP) and this is the first major change since they went digital. Today's networks operate with high expectation on bandwidth, Quality of Service (QoS), choice of access (wired and wireless) and cost efficiency. Together with the emergence of multimedia, m-commerce and e-commerce applications in recent years, networks have become heterogeneous and complex.

MSc in Telecommunications include the essence of network research in the Department of Electronic Engineering at Queen Mary. The programme is offered with three pathways covering all major topics, but with each of them focusing on a different area of the network protocol stack.

All MSc degrees qualify under the myPotential scheme and you will be able to obtain a refund of up to €13,976.24 of all your costs for tuition, course material and examinations. In other words, the Government of Malta will pay you back for your costs, by deducting your income tax after you graduate. The tax credit for an individual student is spread over three years, and is due as from the year of assessment that immediately follows the year in which the individual obtains the qualification. Any amount that is not absorbed within the three year period is carried forward to subsequent years. The myPotential scheme will elapse in December 2008, but those students who embark on the MSc programme this academic year are guaranteed the tax reimbursement at the beginning of the programme.



The **MSc in Telecommunications** is awarded by the University of London. The Lead College of this degree is QUEEN MARY. **St Martin's Institute of IT** is an Advanced Specified Teaching Institution of the University of London, offering tuition for the University of London External Programme.

Further information may be obtained from;
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Telecommunications *(Internet Computing pathway)*

The growth of the Internet has led to the emergence of new industries, services, and products that were unimaginable only a few years ago. With this growth has come the need for employees with the special skills required to build and deploy industrial strength internet computing systems. They are currently in very short supply.

The Internet Computing pathway can be seen as a combination of Networks and Applications, covering the major topics throughout the whole protocol stack. This programme will be ideal for those who wish to learn the 'hot topics' in the whole telecoms sector without looking in so much detail in particular areas, or for those who wish to update their telecoms knowledge.

Year ONE	Year TWO	Year THREE
Advanced Software Technologies	Internet Infrastructure	Project
Network Computing and Internet Technologies	Security and Authentication	
Multimedia Systems	Network Modeling and Performance	
Internet Databases	Intelligent Agents and Multi-Agent Systems	

Telecommunications *(Applications Pathway)*

The Applications pathway has a focus on the development of applications in modern telecoms networks (i.e. the top layers of the protocol stack), and hence, there is a substantial amount of high-level object oriented programming involved, together with other technical issues related to the development of e-commerce applications, issues such as security, complex database structures and management and the use of artificial intelligence. This programme is therefore aimed at those who wish to continue their careers as an e-commerce application developer, creating applications for such systems as online banking systems as well as applications for mobile devices (eg mobile phones, PDA, iPod).

At the end of the programme, you should be able to construct software to deliver e-Commerce applications over the Internet, understand how the different types of infrastructure affect design and commercial decisions.

Year ONE	Year TWO	Year THREE
Advanced Software Technologies	Internet Infrastructure	Project
Network Computing and Internet Technologies	Security and Authentication	
Mobile Services	Protocols for the Electronic Marketplace	
Internet Databases	Intelligent Agents and Multi-Agent Systems	

Telecommunications *(Networks pathway)*

The Networks pathway has a focus on the actual infrastructure and operation of different telecoms systems (i.e. bottom layers of the protocol stack), both wired and wireless. In addition, the programme also includes performance evaluation issues related to modern telecommunications networks. Graduates will have clear concepts of how existing and future systems work and how to optimize their careers as a network engineer, designing future networks and developing standards. At the end of the programme, students will be equipped with the skills needed for a wide range of jobs in the expanding telecommunications industry, from designing infrastructure and services for the new 3G mobile networks to working on the expansion of the Internet with new technologies and protocols.

Year ONE	Year TWO	Year THREE
Either Java Programming or Advanced Software Technologies <i>(determined by the department to suit the applicant's academic & professional profile)</i>	Internet Infrastructure	Project
Digital Broadcasting	Security and Authentication	
Multimedia Systems	Network Modeling and Performance	
Wireless Networks	Satellite Communications	

Wireless Networks *(Network Pathway)*

A convergence of technologies is currently underway. The technologies behind wide area wireless networking and mobile telephony infrastructures are in the process of merging to provide an infrastructure that offers ubiquitous access to information, anywhere, anytime, and anytime.

The whole area of wireless networks is now of enormous importance in the telecommunications and computing industries, from 3G mobile communications, to wireless LANs and newer technologies like WiMax.

In the network stream, you will study the architectures, applications and protocols for modern wireless networks, including mobile networks, wireless LANs, WiMax and ad hoc networks. Security is also included (a crucial aspect of making these networks safe to use, for users and operators alike) and the latest concepts in mobile services, including personalized location-based services.

Year ONE	Year TWO	Year THREE
Either Java Programming or Advanced Software Technologies <i>(determined by the department to suit the applicant's academic & professional profile)</i>	Internet Infrastructure	Project
Digital Broadcasting	Security and Authentication	
Mobile Services	Ad-hoc Broadband Wireless	
Wireless Networks	Satellite Communications	

Entry Qualifications

The minimum entry qualifications for the MSc programmes are;

A first or upper-second class degree in Electronic Engineering, Computer Science, Mathematics, or a related discipline. Applicants with unrelated degrees will be considered if there is evidence of significant relevant industrial experience. Applicants with lower-second class degrees may be considered if the undergraduate degree specialized in the relevant subjects.

In addition to the above general entry requirements applicants to all programmes should have basic programming skills in some language, ideally, an object-oriented language. One should be able to take a straightforward problem, such as those commonly set on undergraduate programming courses and confidently create the solution in code, using common data structures such as arrays and trees. St Martin's Institute of IT provides support courses in Object Oriented Programming using Java for those who wish to upgrade their skills.

Procedures [READ CAREFULLY]

1. Complete and hand in the St Martin's Institute of IT application form, together with the required documents and accompanied by the non-returnable €125 application fee payable to St Martin's Institute of IT.
2. Your application will be processed. You may be guided to apply formally with the University of London for the postgraduate programme of your choice (note the University of London will require its own fees for application and registration) by May preceding the start of the programme in September.
3. You will be required to complete the St Martin's Institute of IT registration form to secure your place as a student in the programme of your choice, accompanied with a one time non-returnable registration fee of €480 for evening students, or €950 for full time students, payable to St Martin's Institute of IT. (Evening diploma and degree students will be required to pay separately the University of London registration and other fees). Registration to our classes is on a first-come, first-serve basis, and late applications will be accepted **ONLY** if vacancies are available.
4. The fees listed are applicable for the period 2008 to 2009, and may be increased at the discretion of the Institute, but to a maximum of 10% of each unit's listed fee. The fees exclude any University of London fees.
5. Tuition fees are paid **in advance payable by the 10th of the current month**. Students who default in two regular payments without written consent may be expelled from the programme without any re-imbursment, and may be charged penalty fees.
6. The workshops are being offered on the basis that the minimum number of students for each programme (10 students) have registered, and will workshops will be organised according to demand and availability of resources.
7. In the case of early resignation a penalty of 25% or pro-rata of the unit cost (whichever higher) will be charged in the case of students dropping any units after the start of the course.
8. Workshops will be held on a day course basis, between 9:00 am and 6:00 pm. The workshops may be organized on any day of the week, including Saturday. Students may be asked to will attend for a two-hour tutorial every four weeks for every unit with St Martin's Institute of IT faculty.

MSc Telecommunications (3 yrs, eve)		Year 1	Year 2	Year 3	TOTAL
St Martin's Fees	€				11800
University of London Fees (estimate)	€				8000
Subtotal for each academic year	€				19800
Conversion in €and rounded	LM				8500

The tables above are for guidance as to the total cost of St Martin's tuition and registration fees and the fees payable to the University of London External Programme. This table does not include estimates for text books and ancillary needs. These apply for EU students attending classes after normal office hours.