UNIVERSITY OF LEADING THE WAY WESTMINSTER

PROGRAMME SPECIFICATION

Course record information

Name and level of final award:	MSc Telecommunications with Digital Signal Processing, MSc Telecommunications with Satellite and Broadband Technologies, MSc Telecommunications with Wireless Technologies *The above awards are Bologna FQ-EHEA second cycle degree or diploma compatible.*
Name and level of intermediate awards:	Postgraduate Diploma Telecommunications Postgraduate Certificate Telecommunications
Awarding body/institution:	University of Westminster
Teaching Institution:	University of Westminster
Status of awarding body/institution:	Recognised Body
Location of delivery:	Cavendish
Language of delivery and assessment:	English
Mode, length of study and normal starting month:	Full-Time (One year) Part-Time (Two years) Part-Time (Three years)
QAA subject benchmarking group(s):	Electronic Engineering Computer Science
Professional statutory or regulatory body:	IET
Date of course validation/review:	2015
Date of programme specification approval:	2015
Course Leader:	
Course URL: Westminster Course Code: JACS code: UKPASS code:	westminster.ac.uk/courses/postgraduate H640

Admissions requirements

There are standard minimum entry requirements for all undergraduate courses. Students are advised to check the standard requirements for the most up-to-date information.

For most courses a decision will be made on the basis of your application form alone. However, for some courses the selection process may include an interview to demonstrate your strengths in addition to any formal entry requirements.

More information can be found here: westminster.ac.uk/courses/postgraduate/how-to-apply

Aims of the courses

The overall aim of the telecommunications suite of MSc courses is to provide an enriching learning experience, enhancing the knowledge and skill base of the participating students in the area of telecommunications. The courses are intended both for engineers in current practice and for fresh honours graduates to facilitate their professional development, mobility and employability.

In more detail, the generic aims of the courses are to:

- G1 Encourage a lively investigative spirit that will sustain a commitment to independent future study;
- G2 Provide communication skills associated with oral and written presentations of technical work and develop interpersonal and organisational skills associated with project planning, execution and appraisal;
- G3 Provide individualised experience of a significant individual project which exploits and applies disparate modules of knowledge;
- G4 Foster a spirit of independent student-centred study with effective management of time and development of research methods;
- G5 Provide a broad coverage of engineering topics that includes not only technical design issues but also a wider set of considerations including social and economic, ethical and environmental issues;
- G6 Develop teamwork skills by providing a framework of group activities.

Further Details Relating to the Three Individual MSc Pathways

Aims Specific to the MSc Telecommunications with Digital Signal Processing

The MSc in Telecommunications with Digital Signal Processing (DSP) aims to produce postgraduates with an advanced understanding of communication systems with special emphasis on the application of DSP, which supports and pervades all modern communication systems.

In particular, this course pathway aims to:

- TSP1 update and extend the students' knowledge and capabilities in wireless and wired communication systems and their standards.
- TSP2 enhance, to an advanced level, students' understanding of the theoretical principles underpinning digital signal processing and how it enables digital communication systems to be realised.
- TSP3 promote competence in dealing with the issues specific to the design of communications systems.

TSP4 develop an understanding of the problems and challenges associated with the implementation of both fixed and mobile wireless communication systems.

TSP5 foster the ability to design and build digital filters to perform signal shaping and for use as matched filters in white noise and in pole-only noise.

TSP6 develop the ability to analyse and implement key DSP transmission, reception and detection algorithms used in modern-day telecommunications.

Aims Specific to the MSc Telecommunications with Satellite and Broadband Technologies

The MSc in Telecommunications with Satellite and Broadband Technologies aims to produce postgraduates with an advanced understanding of communication systems utilising satellite and broadband elements.

In particular, the course aims to:

TSB1 update and extend the students' knowledge and capabilities in wireless and wired communication systems and their standards;

TSB2 enhance, to an advanced level, students' understanding of the theoretical principles underpinning digital communication systems;

TSB3 promote competence in dealing with the issues specific to the design of communications systems;

TSB4 develop an understanding of the problems and challenges associated with the implementation of both fixed and mobile wireless communication systems;

TSB5 foster the ability to analyse leading edge satellite and broadband systems utilising modern architectures with the aim of providing new services;

TSB6 develop the ability to analyse broadband systems with the aim of designing and defining methodologies for improving performance, service quality and management.

Aims Specific to the MSc Telecommunications with Wireless Technologies

The MSc in Telecommunications with Wireless Technologies aims to produce postgraduates with an advanced understanding of communication systems with a focus on wireless technologies.

In particular, the course aims to:

TWT1 update and extend the students' knowledge and capabilities in wireless and wired communication systems and their standards;

TWT2 enhance, to an advanced level, students' understanding of the theoretical

principles underpinning digital and analog communication systems;

TWT3 promote competence in dealing with the issues specific to the design of communication systems;

TWT4 develop an understanding of the problems and challenges associated with the implementation of both fixed and mobile wireless communication systems;

TWT5 foster the ability to analyse, design and build RF and microwave systems for wireless communication systems;

TWT6 develop the ability to model the behaviour of wireless systems from circuits, filters and antenna design to the implementation of communication techniques.

Employment and further study opportunities

Today's organisations need graduates with both good degrees and skills relevant to the workplace, i.e. employability skills. The University of Westminster is committed to developing employable graduates by ensuring that:

- career development skills are embedded in all courses
- opportunities for part-time work, placements and work-related learning activities are widely available to students
- staff continue to widen and strengthen the University's links with employers in all sectors, involving them in curriculum design and encouraging their participation in other aspects of the University's career education and guidance provision
- staff are provided with up-to-date data on labour market trends and employers' requirements, which will inform the service delivered to students.

The demand for engineers in both wide-area and local-area communication networks is currently flourishing and is expected to improve, as multimedia data transmissions find more applications in everyday life. Europe, along with the rest of the world, is currently experiencing unprecedented activity in mobile cellular and local-area communications.

The latest communications standards have been hugely influential in accelerating dissemination of mobile telephony, computing and conferencing. They have achieved truly compatible international communications for everyone from roving business personnel to tourists. Everywhere, from the startling expansion of commerce on the World Wide Web to the wireless workplace, society is displaying a voracious appetite for communications on a scale that surpasses even the most optimistic projections of a few short years ago.

The expansion of communications companies is, of course, prodigious. While most of the headlines go to Media Moguls and mergers of gigantic corporate entities, there is a strong upsurge of SMEs (Small and Medium Enterprises) devoted to niche products and services to fuel the communications machine. This has led to a colossal demand for engineers skilled in communications areas and has shaped these MSc courses. There is now a long-term and growing market for graduates possessing a clear overview of current communications capabilities, standards and trends. The three courses comprising the telecommunications suite of MSc pathways described here set out to provide just such a breadth of view and to simultaneously press home experience of implementation details via suitably selected

problem-solving, project and simulation work.
Successful graduates are likely to go into one of the following roles:

- Telecommunication engineer
- Electronic systems design engineer
- Robotic systems design engineer
- Embedded systems design engineer
- Measurements and instrumentation engineer
- Medical electronic design engineer
- Control systems engineer
- Computer systems engineer
- Software engineer

In various industries such as:

- Telecommunication industry
- Electronic systems industry
- Medical equipment manufacturers
- Instrumentation industry
- Transport industries
- Automobile industry
- Aviation industry
- Consumer industry
- Security and surveillance industry

Learning Outcomes: General Learning Outcomes

Knowledge and understanding

Graduates will satisfy the following criteria:

GSa They will be able to demonstrate their knowledge and understanding of essential facts, concepts, theories and principles pertaining to their area of engineering, and its underpinning science and mathematics. They will appreciate the social, environmental, ethical, economic and commercial considerations affecting the exercise of their engineering judgement.

Specific Skills

GSb They will be able to apply appropriate quantitative science and engineering tools to the analysis of problems. They will be able to demonstrate creative and innovative ability in the synthesis of solutions and in formulating designs. They will be able to comprehend the broad picture and thus work with an appropriate level of detail.

GSc They will possess practical engineering skills acquired through, for example, work carried out in laboratories; in project work; in design work; and in the use of computer software in design and analysis.

Key transferable skills

GSd They will have developed transferable skills that will be of value in a wide range of situations. These skills include:

- the ability to exercise initiative and personal responsibility whilst working with others;
- the ability to plan self-learning and improve performance, as the foundation

for lifelong learning;
- the ability to communicate effectively through written reports and presentations and the ability to handle competently technical questioning;
- the ability to use effectively general IT and information retrieval facilities;
- the ability to develop, monitor and update a plan, to reflect a changing operating environment;
- the ability to monitor and adjust a personal programme of work on an on-going basis, and to learn independently;
- the ability to learn new theories, concepts, methods, etc and apply these to solve problems in unfamiliar situations.

Specific Learning Outcomes

1. Science and Mathematics

MSc Telecommunications with Digital Signal Processing

Graduates will be able to demonstrate:

SM1fl a comprehensive understanding of the scientific principles of telecommunications and those of Digital Signal Processing (DSP), including discrete-time system characterisation, various transforms for discrete-time signals, spectral analysis, digital filter design, signal detection and stochastic signal representation and handling;

SM2fl a critical awareness of current problems and innovations relevant to DSP with the use of mathematical and computer models; digital transmission and communication performance and planning, and an appreciation of communication system capabilities;

SM3fl understanding of developing technologies and concepts related to DSP and communications from a range of areas including some outside communications engineering, and the ability to apply them effectively in engineering projects.

MSc Telecommunications with Satellite and Broadband Technologies

Graduates will be able to demonstrate:

SM1fl a comprehensive understanding of the scientific principles of satellite and broadband systems for telecommunications, including practical link budgets, parameters of mobile fading channels and various elements affecting reliability of operation;

SM2fl a critical awareness of current problems and innovations in the area of satellite and broadband technologies with the use of mathematical and computer models; digital transmission and satellite communication performance and planning, and an appreciation of broadband and satellite communication system capabilities;

SM3fl understanding of developing technologies and concepts related to satellite and broadband from a range of areas including some outside communications engineering, and the ability to apply them effectively in engineering projects.

MSc Telecommunications with Wireless Technologies

Graduates will be able to demonstrate:

SM1fl a comprehensive understanding of the scientific principles of wireless systems, including path loss and fading phenomena, and evaluating user requirements for 4G and 5G mobile systems;

SM2fl a critical awareness of current problems and innovations in the area of wireless systems with the use of mathematical and computer models; wireless transmission and mobile communication performance and planning, and an appreciation of wireless system capabilities;

SM3fl understanding of developing technologies and concepts related to wireless systems from a range of disciplines including some outside the wireless area, and the ability to apply them effectively in engineering projects.

2. Engineering Analysis

MSc Telecommunications with Digital Signal Processing

Graduates will be able to demonstrate:

EA1fl the ability to employ analytical and modelling tools for solving complex problems in DSP and telecommunications and evaluate the limitations of the modelling environment;

EA2fl the ability to use fundamental knowledge in the area of DSP and apply to new and emerging telecommunication systems;

EA3fl the ability to assess and adapt recent research results in the area of DSP and apply to the solution of unfamiliar problems and incompletely characterised systems;

MSc Telecommunications with Satellite and Broadband Technologies

Graduates will be able to demonstrate:

EA1fl the ability to employ analytical and modelling tools for solving complex problems in satellite and broadband systems and evaluate the limitations of the modelling environment;

EA2fl the ability to use fundamental knowledge in the satellite and broadband area and apply to new and emerging telecommunication systems;

EA3fl the ability to assess and adapt recent research results in the area of satellite and broadband, and apply to the solution of unfamiliar problems and incompletely characterised systems;

MSc Telecommunications with Wireless Technologies

Graduates will be able to demonstrate:

EA1fl the ability to employ analytical and modelling tools for solving complex problems in wireless systems and evaluate the limitations of the modelling environment;

EA2fl the ability to use fundamental knowledge in the area of wireless systems and where appropriate investigate and appraise new and emerging wireless technologies;

EA3fl the ability to assess and adapt recent research results in the wireless area, and apply to the solution of unfamiliar problems and incompletely characterised systems;

3. Design

MSc Telecommunications with Digital Signal Processing

Graduates will be able to demonstrate:

D1fl in-depth knowhow in making design choices with the aid of laboratory experiments and DSP tools in the face of uncertain and incomplete data and quantify these effects on the overall design;

D2fl knowledge and comprehensive understanding of various non-optimal and optimal DSP design solutions and methodologies and their application to unfamiliar scenarios;

D3fl the ability take a complex specification for a DSP and telecommunications scenario and generate a system to fulfil new needs.

MSc Telecommunications with Satellite and Broadband Technologies

Graduates will be able to demonstrate:

D1fl in-depth knowhow in making design choices with the aid of laboratory experiments and tools in the face of uncertain and incomplete satellite and broadband data and quantify these effects on the overall design;

D2fl knowledge and comprehensive understanding of various modern communication system architectures and their application to unfamiliar scenarios;

D3fl the ability take a complex specification for a satellite or broadband application and generate a system to fulfil new needs.

MSc Telecommunications with Wireless Technologies

Graduates will be able to demonstrate:

D1fl in-depth knowhow in making design choices with the aid of laboratory experiments and modern software platforms in the face of uncertain and incomplete information in the wireless area and quantify these effects on the overall design;

D2fl knowledge and comprehensive understanding of various modern wireless system architectures and their application to unfamiliar scenarios;

D3fl the ability take complex specifications for components making up wireless systems and generate a solution to fulfil new needs.

4. Economic, Legal, Social, Ethical and Environmental Context

MSc Telecommunications with Digital Signal Processing

Graduates will be able to demonstrate:

ET1fl the ability to fully articulate the importance of high levels of professional and ethical conduct by analysing a complex design in the area of Telecommunications and DSP; identifying the ethical issues related to the application of the design and its full product cycle.

ET2fl the ability to communicate an objective defence of the chosen design process taking into account commercial risk, codes of practice, safety requirements and the social impact of modern DSP and telecommunication systems;

ET3fl the ability to communicate an objective defence of the chosen business arguments and design process given knowledge of various methodologies, business and management models, quality assurance systems, regulatory practices and certification requirements for DSP and telecommunication systems;

ET4fl the ability to identify required resources and design processes that will ensure sustainable development and longevity in the area of telecommunications and DSP;

ET5fl awareness of relevant regulatory requirements and international compliance standards in the area of telecommunication and DSP systems;

ET6fl the awareness and ability to evaluate risks related to the environment, health and safety and where appropriate commercial risk for a given telecommunications and DSP area.

MSc Telecommunications with Satellite and Broadband Technologies

Graduates will be able to demonstrate:

ET1fl the ability to fully articulate the importance of high levels of professional and ethical conduct by analysing a complex design in the area of satellite and broadband systems; identifying the ethical issues related to the application of the design and its full product cycle.

ET2fl the ability to communicate an objective defence of the chosen design process taking into account commercial risk, codes of practice, safety requirements and the social impact of modern satellite and broadband systems;

ET3fl the ability to communicate an objective defence of the chosen business arguments and design process given knowledge of various methodologies, business and management models, quality assurance systems, regulatory practices and certification requirements for satellite and broadband systems;

ET4fl the ability to identify required resources and design processes that will ensure sustainable development and longevity in the area of satellite and broadband systems;

ET5fl awareness of relevant regulatory requirements and international compliance standards in the area of satellite and broadband systems;

ET6fl the awareness and ability to evaluate risks related to the environment, health and safety and where appropriate commercial risk for a given satellite and broadband system.

MSc Telecommunications with Wireless Technologies

Graduates will be able to demonstrate:

ET1fl the ability to fully articulate the importance of high levels of professional and ethical conduct by analysing a complex design in the area of wireless systems; identifying the ethical issues related to the application of the design and its full product cycle.

ET2fl the ability to communicate an objective defence of the chosen design process taking into account commercial risk, codes of practice, safety requirements and the social impact of modern wireless systems;

ET3fl the ability to communicate an objective defence of the chosen business arguments and design process given knowledge of various methodologies, business and management models, quality assurance systems, regulatory practices and certification requirements for wireless systems;

ET4fl the ability to identify required resources and design processes that will ensure sustainable development and longevity in the area of wireless systems;

ET5fl awareness of relevant regulatory requirements and international compliance standards in the area of wireless systems;

ET6fl the awareness and ability to evaluate risks related to the environment, health and safety and where appropriate commercial risk for a given wireless system.

5. Engineering Practice

MSc Telecommunications with Digital Signal Processing

Graduates will be able to demonstrate:

EP1fl advanced-level knowledge and understanding of high speed DSP algorithms, system identification, compensation and stabilisation to accommodate given constraints and unknowns, design of matched filters as subsystems for use in pulse communication systems;

EP2fl a thorough understanding and critical evaluation of current tools and practices used to develop DSP systems, construct models and simulate selected DSP systems to solve real, practical problems and demonstrate the limitations of modelling;

EP3fl the ability to select, report and apply a suitable design process and design methodology for the implementation of a particular DSP-enabled telecommunication system given speed, capacity and cost constraints in commercially available subsystems;

EP4fl understanding of different roles within an engineering team, as a team member or a leader, and exercise initiative and personal responsibility within their role.

MSc Telecommunications with Satellite and Broadband Technologies

Graduates will be able to demonstrate:

EP1fl advanced-level knowledge and understanding of satellite and terrestrial broadband systems and radio network infrastructures, assess the reliability of equipment and link conditions;

EP2fl a thorough understanding and critical evaluation of current tools and practices used to develop satellite and broadband systems, construct models and simulate selected scenarios to solve real, practical problems and demonstrate the limitations of modelling;

EP3fl the ability to select, report and apply a suitable design process and design methodology for the implementation of a particular satellite/broadband

telecommunication system given speed, capacity and cost constraints in commercially available equipment;

EP4fl understanding of different roles within an engineering team, as a team member or a leader, and exercise initiative and personal responsibility within their role.

MSc Telecommunications with Wireless Technologies

Graduates will be able to demonstrate:

EP1fl advanced-level knowledge and understanding of wireless systems and supporting circuitry; MIC and waveguide passive and active components such as filters, antennas, low-noise amplifiers, power amplifiers and linearizers;

EP2fl a thorough understanding and critical evaluation of current tools and practices used to develop wireless network systems, design and simulate circuits and subsystems to demonstrate the limitations of modelling;

EP3fl the ability to select, report and apply a suitable design process and design methodology for the implementation of a particular wireless system using device design techniques to augment commercially available components;

EP4fl understanding of different roles within an engineering team, as a team member or a leader, and exercise initiative and personal responsibility within their role.

Course structure

MSc Telecommunications with Digital Signal Processing

This section illustrates the core and option modules available as part of the MSc Telecommunications with Digital Signal Processing course and their credit value. Full-time Postgraduate students study 180 credits per year. The course consists of three taught modules (40 credits each) plus an individual project (60 credits).

Credit Level 7				
Module code	**Module title**	**Status**	**UK**	**ECTS**
7NTCM008W	Telecommunications	Core	40	20
7NTCM007W	Digital Signal Processing	Core	40	20
7ELEN016W	Project	Core	60	30
One from:				
7ELEN013W	Electronics	Option	40	20
7ELEN012W	Robotic and Control Systems	Option	40	20
7ELEN014W	Embedded Systems	Option	40	20
7ELEN015W	System-on-Chip Technologies	Option	40	20
7BIOT005W	Medical Instrumentation	Option	40	20
7NTCM010W	Computer Networks	Option	40	20
7NTCM011W	Security	Option	40	20
7NTCM012W	Communication Networks	Option	40	20
7NTCM013W	Cloud Technologies	Option	40	20
7NTCM009W	Satellite and Broadband Communications	Option	40	20
7NTCM006W	Wireless Technologies	Option	40	20

Please note: Not all option modules will necessarily be offered in any one year.

MSc Telecommunications with Satellite and Broadband Technologies

This section illustrates the core and option modules available as part of the MSc Telecommunications with Satellite and Broadband Technologies course and their credit value. Full-time Postgraduate students study 180 credits per year. The course consists of three taught modules (40 credits each) plus an individual project (60 credits).

Credit Level 7				
Module code	**Module title**	**Status**	**UK**	**ECTS**
7NTCM008W	Telecommunications	Core	40	20
7NTCM009W	Satellite and Broadband Communications	Core	40	20
7ELEN016W	Project	Core	60	30
One from:				
7ELEN013W	Electronics	Option	40	20
7ELEN012W	Robotic and Control Systems	Option	40	20
7ELEN014W	Embedded Systems	Option	40	20
7ELEN015W	System-on-Chip Technologies	Option	40	20
7BIOT005W	Medical Instrumentation	Option	40	20
7NTCM010W	Computer Networks	Option	40	20
7NTCM011W	Security	Option	40	20
7NTCM012W	Communication Networks	Option	40	20
7NTCM013W	Cloud Technologies	Option	40	20
7NTCM007W	Digital Signal Processing	Option	40	20
7NTCM006W	Wireless Technologies	Option	40	20

Please note: Not all option modules will necessarily be offered in any one year.

MSc Telecommunications with Wireless Technologies

This section illustrates the core and option modules available as part of the MSc Telecommunications with Wireless Technologies course and their credit value. Full-time Postgraduate students study 180 credits per year. The course consists of three taught modules (40 credits each) plus an individual project (60 credits).

Credit Level 7				
Module code	**Module title**	**Status**	**UK**	**ECTS**
7NTCM008W	Telecommunications	Core	40	20
7NTCM006W	Wireless Technologies	Core	40	20
7ELEN016W	Project	Core	60	30
One from:				
7ELEN013W	Electronics	Option	40	20
7ELEN012W	Robotic and Control Systems	Option	40	20
7ELEN014W	Embedded Systems	Option	40	20
7ELEN015W	System-on-Chip Technologies	Option	40	20
7BIOT005W	Medical Instrumentation	Option	40	20
7NTCM010W	Computer Networks	Option	40	20
7NTCM011W	Security	Option	40	20
7NTCM012W	Communication Networks	Option	40	20
7NTCM013W	Cloud Technologies	Option	40	20
7NTCM007W	Digital Signal Processing	Option	40	20
7NTCM009W	Satellite and Broadband Communications	Option	40	20

Please note: Not all option modules will necessarily be offered in any one year.

Teaching, Learning and Assessment Methods

Teaching

The taught portion of the courses comprises three 40 credit intensive short courses. The weekly tutorials which follow delivery of these course modules aid the student's assimilation of module subject matter.

Meanwhile, at the end of each module the student is assigned a substantial work package which exercises the concepts just studied. The makeup of these intervening work assignments (each one known as an Independent Learning Package (ILP)) varies with the content of the associated short courses. In most cases, ILPs incorporate design or simulation activities alongside written problem solutions.

Each ILP requires submission of a portfolio of results in order to consolidate understanding of an individual short course's material. This forms the basis for the assessment of the student's subject proficiency. The ILP portfolio includes a written report that summarises problem solutions and/or findings from the technical investigations that have been assigned.

Sequentially engaging each module in isolation permits the student to concentrate attention just on the most recently-taught subject material, thereby promoting efficient focused learning. This course structure is also quite flexible, affording industry-based students an opportunity to attend and accumulate module credits over an extended period of time, while simultaneously serving a full-time student cohort that generally progresses through the MSc pathway in a single calendar year.

Assessment
Assessment of Learning Modules

The student must submit a completed ILP in the form of a report that contains a critical, reflective and detailed description of the independent work carried out and the results of the investigations assigned. While the short course elements build a skills baseline, the ILP work extends and sharpens the student's knowledge base of the taught material. The short course portion of a module is not explicitly subject to assessment, whereas ILPs are.

Once the student submits the ILP report, an oral examination is held with an ILP Panel consisting of at least two staff members who will determine the level of student achievement. After thorough scrutiny of the written evidence and hearing the oral defence, the Panel decides whether the outcome is a Pass with Distinction, Pass with Merit, Pass or Fail; this result then becomes a recommendation to the Assessment Board. The proceedings of the oral examinations are recorded for External Examiners' perusal.

Students must achieve at least a Pass to be awarded the credit for that module.
Specifically, the criteria used for assessment are the learning outcomes of each module.

Academic regulations

The current Handbook of Academic Regulations is available at westminster.ac.uk/academic-regulations

How will you be supported in your studies?

Course Management

The Telecommunications suite of MSc courses is delivered by the Department of Engineering.

Academic Support

Upon arrival, an induction programme will introduce you to the staff responsible for the course, the campus on which you will be studying, the Library and IT facilities, additional support available and to your Faculty Registry Office. You will be provided with the Course Handbook, which provides detailed information about the course. Each course has a course leader or Director of Studies. All students enrolled on a full-time course and part time students registered for more than 60 credits a year have a personal tutor, who provides advice and guidance on academic matters. The University uses a Virtual Learning Environment called Blackboard where students access their course materials, and can communicate and collaborate with staff and other students

Learning Support

The Academic Learning Development Centre supports students in developing the skills required for higher education. As well as online resources in Blackboard, students have the opportunity to attend Study Skills workshops and one to one appointments.

Learning support includes four libraries, each holding a collection of resources related to the subjects taught at that site. Students[1] can search the entire library collection online through the Library Search service to find and reserve printed books, and access electronic resources (databases, e-journals, e-books). Students can choose to study in the libraries, which have areas for silent and group study, desktop computers, laptops for loan, photocopying and printing services. They can also choose from several computer rooms at each campus where desktop computers are available with the general and specialist software that supports the courses taught at their Faculty. Students can also securely connect their own laptops and mobile devices to the University wireless network.

Support Services
The University of Westminster Student Affairs department provide advice and guidance on accommodation, financial and legal matters, personal counselling, health and disability issues, careers, specialist advice for international students and the chaplaincy providing multi-faith guidance. The University of Westminster Students' Union also provides a range of facilities to support students during their time at the University.

How do we ensure the quality of our courses and continuous improvement?
The course was initially approved by a University Validation Panel in 2015. The panel included internal peers from the University, academic(s) from another university and a representative from industry. This helps to ensure the comparability of the course to those offered in other universities and the relevance to employers.

The course is also monitored each year by the Faculty to ensure it is running effectively and that issues which might affect the student experience have been appropriately addressed. Staff will consider evidence about the course, including the outcomes from Course Committees, evidence of student progression and achievement and the reports from external examiners, to evaluate the effectiveness of the course. Each Faculty puts in to place an action plan. This may for example include making changes on the way the module is taught, assessed or even how the course is structured in order to improve the course, in such cases an approval process is in place.

A Course review takes place periodically to ensure that the curriculum is up-to-date and that the skills gained on the course continue to be relevant to employers. Students meet with review panels to provide feedback on their experiences. Student feedback from previous years e.g. from Course Committees is also part of the evidence used to assess how the course has been running.

How do we act on student feedback?
Student feedback is important to the University and student views are taken seriously. Student feedback is gathered in a variety of ways.

- Through Course Committees students have the opportunity to express their voice in the running of their course. Student representatives are elected to Committee to expressly represent the views of their peer. The University and the Students' Union work together to provide a full induction to the role of the student representatives.

- Each Faculty also has its own Faculty Student Forum with student representatives; this enables wider discussions across the Faculty. Student representatives are also represented on key Faculty and university committees.

[1] Students enrolled at Collaborative partners may have differing access due to licence agreements.

- All students are invited to complete a questionnaire before the end of each module. The feedback from this will inform the module leader on the effectiveness of the module and highlight areas that could be enhanced.

- The University also has an annual Postgraduate Taught Experience Survey or PTES which helps us compare how we are doing with other institutions, to make changes that will improve what we do in future and to keep doing the things that you value.