Section 1: Basic Data

Awarding institution/body:	**UWE**
Teaching institution:	**UWE**
Faculty responsible for programme:	**FBE**
Programme accredited by:	**BIAT**
Highest award title:	**BSc (Hons) Architectural Technology and Design**
Default award title:	
Interim award title:	**DipHE Architectural Technology and Design** **CertHE Architectural Technology and Design** **BSc Built and Natural Environments**
Modular scheme title:	**Built Environment**
UCAS codes:	**K130**
QAA subject benchmarking group(s):	**Architecture and Architectural Technology**
Valid until:	
Valid from:	**2003**
Authorised by:	**UG Modular Scheme Director** Date:
Version code:	**1**
Version year:	**2005**

Section 2: Educational aims of the programme

The award is designed to produce graduates who will be able to analyse, synthesise and evaluate design factors thus enabling them to produce design solutions that will satisfy performance, production and procurement criteria for the contruction industry. Each student will have a strategic awareness of the parameters that underline the processes necessary to achieve good functional buildings.

At the end of the period of study the architectural technologist can expect to find employment within design consultancy organisations, contractors, or product manufacturers.

The award aims: -

i) to instil in each student an understanding and enthusiasm for Architectural Technology and Design;
ii) to provide an intellectually stimulating environment for learning and understanding;
iii) to integrate the conceptual understanding of technology and design realisation;
iv) to reflect upon, evaluate and discuss aspects of technological design;
v) to identify and encourage the essential features of good integrated design and practice (including C.A.D.), through observed current good practice and historical precedents and practice.
vi) to use knowledge of scientific principles and materials properties to develop and design productive solutions to technological problems within defined constraints;
vii) to consider the 'buildability', sustainability and performance of building design solutions within legal, ecological, economic and technological constraints;
viii) to provide an environment for personal and skills development, the development of team-working skills for the construction industry and a multidisciplinary ethos;
ix) to motivate and equip graduates to meet the challenges of change in the industry, for example, resulting from globalisation, the emphasis on sustainability, rising client expectations and changing organisational strategies;
x) to develop each student's analytical and creative skills and encourage the development of mature and independent judgement, leading to effective decision making and synthesising skills;
xi) to identify and evaluate research and innovation needs in buildings.

Section 3: Learning outcomes of the programme

A: Knowledge and understanding

By the end of the programme, the student should be able:	Teaching/learning methods and strategies
1 To demonstrate an understanding of the essential facts, concepts and theories relating to architectural design and its relationship to technology 2 To understand the principles of building structure and construction including the properties of materials 3 To be aware of the nature of building fabric and systems as modifiers of the physical environment in providing a sustainable environment 4 To analyse the performance of a building from a technical and functional perspective and recognise their inter-relationship 5 To understand the relevant statutory frameworks and other constraints and gain an appreciation of the legal principles of practice pertaining to construction contracts 6 To understand the role of the parties to the building development process and to gain an appreciation of other professional perspectives	Students will be introduced to knowledge primarily through lectures and supporting learning materials including reading and web-based resources. Candidates will consolidate their knowledge base through a variety of techniques including tutorials, studio work, laboratories, field visits, and a variety of IT applications. Their learning will also be enhanced by completion of formative work designed to support the programme of knowledge acquisition and to prepare students for summative assessment. **Assessment** Testing of the knowledge base is through assessed design studios (1), coursework (1-6), through oral presentations (1-6), through experimental work undertaken in a laboratory or real-life situation (1,2 & 4) and through tasks undertaken under examination conditions (1-6).

B: Intellectual skills

By the end of the programme, the student should be able:	Teaching/learning methods and strategies
1 To analyse a problem and evaluate critically, evidence and alternative points of view 2 To interpret, analyse and communicate qualitative and quantitative data 3 To synthesise ideas and information from a variety of sources in reaching judgements about issues, problems and solutions 4 To demonstrate the ability to question and evaluate current theories and practice 5 To initiate and execute research and subsequently analyse and exploit the findings	Intellectual skills are developed through a variety of methods. These include tutorial sessions and subsequent discussion periods. Design skills are developed and analysed through traditional architectural crit sessions. Analysis of numerical data is encouraged through laboratory experiments and through techniques of computer analysis. Research skills are developed through specifically targeted coursework associated with the level 2 Inter-professional development project and design projects, culminating in the level 3 design module. During each academic year the student has the benefit of the results of formative assessment from written comments and verbal feedback from academic tutors, studio-based consultations, tutorial sessions and concurrent feedback during laboratory investigative procedures. **Assessment** A variety of assessment methods are employed to test intellectual skills. Assessment of the ability to apply and evaluate research findings and to bring make judgements based on a wide range of inputs will be though assessment of the student's design portfolio and their response under 'viva' conditions. Intellectual skills will be also be assessed through summative assessment in other subjects, for example, coursework, 'traditional' examination procedures, and also through computer-based assessments.

C: Subject, Professional and Practical Skills

By the end of the programme, the student should be able:	Teaching/learning methods and strategies
1 To apply knowledge of structure, construction, materials and environmental performance in building design 2 To apply the principles of good practice to design and the design process, including use of CAD and design systems 3 To create appropriate design solutions in a variety of contexts which are also technically competent and viable building design solutions of quality which meet client's requirements 4 To appreciate the health and safety responsibilities associated with specific aspects of the built environment 5 To be able to apply experimental method, including laboratory investigations, to the analysis of technical problems 6 To be able to observe, describe and record information about building design and condition accurately 7 To interpret plans and three dimensional diagrams accurately	A number of practical skills can be learnt by the study of syllabus topic materials and the completion of formative activities supported by feedback from staff. These include the effective use and manipulation of computer based design systems, interpretation of plans and drawing of three dimensional objects, the requirements needed for work in a professional environment, and the production and evaluation of viable design solutions to technological problems. Some of the design Modules will use the Atelier system of teaching to provide an holistic approach to teaching aspects of architectural design, together with peer group review and group learning from other students. (Skills 2,3) **Assessment** The assessment of the structure, construction, environmental and materials performance in building design (skill 1) is undertaken through laboratory experimental reports, essays and 'unseen' written examinations. Other practical skills are assessed through coursework, studio crits and viva presentations (skill 2 & 3). The other skills are assessed through essays, examinations under controlled conditions, field exercises and oral presentations.

D: Transferable skills and other attributes

By the end of the programme, the student should be able:	Teaching/learning methods and strategies
1 To be able to communicate design solutions through a variety of media and with a variety of stakeholders in the development process and construction industry 2 To demonstrate an understanding of the conventions of architectural drawing 3 To appreciate the limitations and use of computers and apply IT to the context of learning and building technology and design 4 To have acquired skills in the use and processing of physical quantities and numerical data 5 To demonstrate an appreciation of the importance of inter-professional and collaborative working, and develop respect for other people's perspective 7 To develop the skill of independent learning	Students' communication skills are assessed through the Design Studio experiences and presentations (skills 1, 2, 3, 5 & 7). The acquisition of skills relating to the use and processing of physical quantities and numerical data is achieved through tutorial calculations, application of IT skills to defined scenarios (skills 3 and 4)through working with a range of design related software as well as technical exercises. Acquisition of inter-professional collaboration working is undertaken through group projects, in particular within Inter-professional modules(skill 6). **Assessment** A variety of methods are employed to assess transferable skills. Assessment of communication skills is undertaken through essay writing, architectural crits (skills 1, 2, 5 & 7), presentations (skills 5, 6 & 7) through oral presentations, experimental procedures (skills 4, 5 & 7) and computer-based learning (skills 3 & 5) through laboratory exercises and design work and analysis using a range of software. Team working is also assessed through the Inter-professional modules and the ability to work independently is assessed through the design projects.

Section 4: Programme structure

FIGURE 1: AWARD STRUCTURE DIAGRAM

BSc (HONS) ARCHITECTURAL TECHNOLOGY & DESIGN

Recommended routeway for FT Students

YEAR 1

SEM 1	Design Studio A UBPL35-20-1	Design In Context UBPLHC-20-1	Data & Dimen-sional Control UBCLH6-10-1	Construction Technology A UBCLBX-20-1	Environments & Construction Materials UBCLC5-20-1	Introduction to Law & Construction Contracts UBCL7B-20-1	Process of Develop-ment UBIL75 10 1
SEM 2							

YEAR 2

SEM 1	Elemental & Integrated Design UBPLCJ-40-2		Technology Design & Environment UBCLD3-20-2	Building Defects & Property Surveys UBLL7G-20-2	Structural Design Technology UBCLHE-20-2	Building Services Engin-eering UBCLCB-10-2	
SEM 2							Inter-professional Development Project UBIL76-10-2

OPTIONAL PLACEMENT

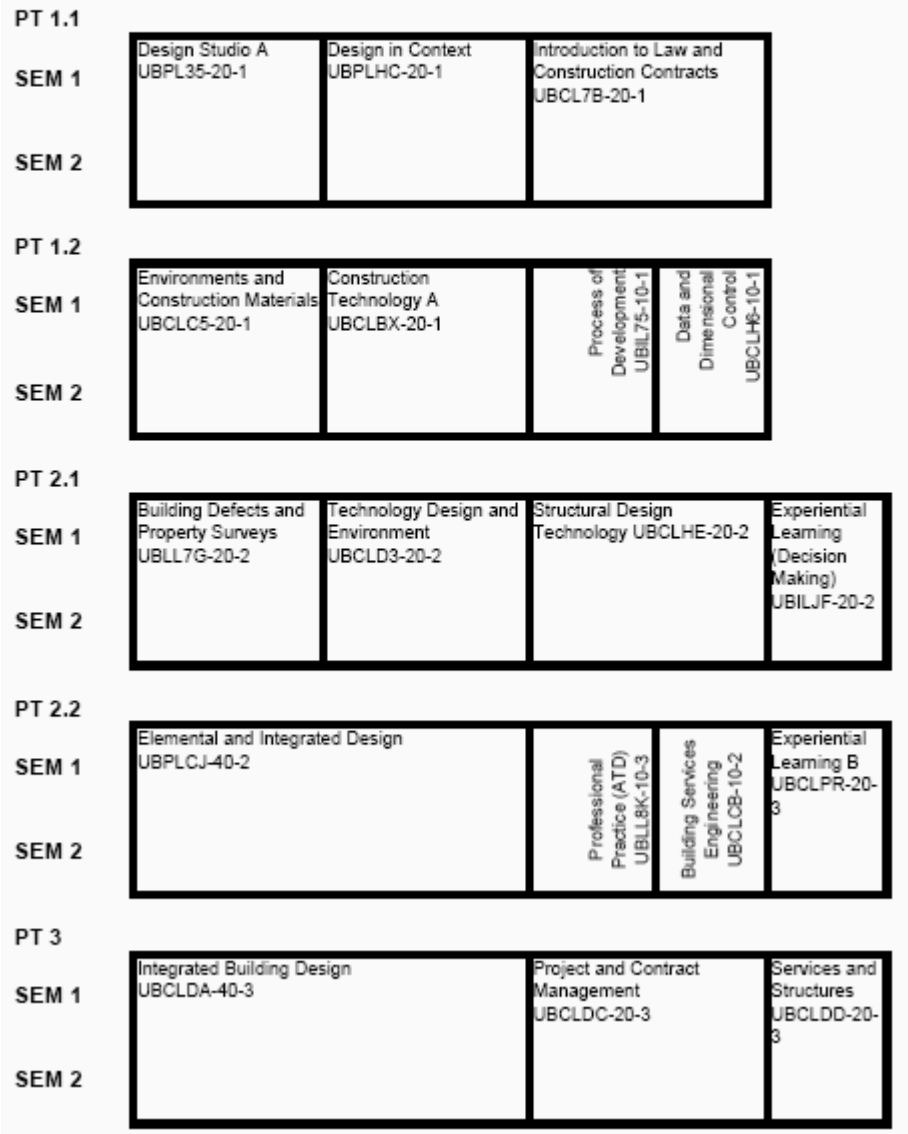
YEAR 3

SEM 1	Integrated Building Design UBCLDA-40-3	Project & Contract Management UBCLDC-20-3	Services & Structures UBCLDD-20-3	Profess-ional Practice (ATD) UBLL8K-10-3	Shared Elective		Inter-disciplinary Issues UBIL4N-10-3
SEM 2					Shared Elective		

FIGURE 1A: AWARD STRUCTURE DIAGRAM

BSc (HONS) ARCHITECTURAL TECHNOLOGY AND DESIGN

Recommended Routeway for Part Time Day Release Students (Definitive)



In recent years many architectural practices have reviewied the role of technicians in the design process and now recognise them as key partners in the design team. They have become involved earlier in the design process and hence are able to take a more holistic view of the technical aspects of the building. This has considerable benefits in their approach to detailing and specification.

Employers have also articulated a requirement for more qualified people with additional skills, in the form of a technologist, rather than a technician. To a significant extent, the definition of the technologist's role has come about as a result of changes within the industry. The advent of new computer-assisted techniques and drawing practices, the changes that have taken place in technical knowledge and the wider diversity of construction forms all emphasise the need for more highly qualified personnel.

New procurement methods have further reinforced the need for professionally qualified technologists to provide a bridge between conceptual design and technical solution.

While these changes demand a rigorous understanding of the technical aspects of construction these must be integrated into the design process, based on the conditions found in the design environment of

the architectural practice. This integrated focus is reflected both in the award title and in the approach to learning delivered through the use of project modules to integrate and apply the technical aspects into the design process.

Level 1

The first year of the award provides a foundation study of Construction, Environments and Materials and an Introduction to Law, including construction contracts. Design skills are developed through the 'Design Studio' module where students study alongside students on the Architecture and Planning Award. The Integrated Design Systems module is studied uniquely by students on this Award and in addition students will study the Faculty Inter-professional module 'Process of Development'.

Level 2

The design theme in the course is developed through subsequent levels of the Award and builds upon and integrates the technology modules. At Level 2 this can be seen in the double module 'Elemental and Integrated Design'. Technology Design and Environments are studied in more depth in conjunction with the study of structures, services and site engineering at level 2. The 'Building Defects and Property Surveys' module allows for study of existing buildings and their potential for refurbishment. The Level 2 faculty inter-professional module Inter-professional Development Project is also undertaken.

The integrating design projects play a key role in bringing together theory from several related modules reinforcing and applying their content in a practical context. These projects at each stage of the course provide the thematic core that will give to the award its distinctive identity.

Level 3

The final stage of the Award introduces new topics and builds on earlier work. Integrated Building Design is a double module at level 3. It aims to provide students with an in-depth analysis of buildings and consolidate their design and technical knowledge from level 2. In addition they will evaluate the overall performance of the buildings and undertake substantial design of a major building.

The Project and Contract Management module considers the management of construction projects and the administration of contracts and provides a basis for the study of the financial management of business organisations and construction projects. The concepts gained in this module are relevant throughout the whole of the project life cycle and require an understanding of legal rights and of co-operation between contractors, consultants and client. The module is designed to give students a grounding in the key aspects of managing construction projects from conception to completion and to develop an awareness of the contractual arrangements and how to manage situations where conflict occurs. The main focus of the module is meeting client needs.

The Services and Structures module aims to give students a broad appreciation of decision making processes involved in engineering design, and the capability to consider some real engineering problems in the fields of building services engineering and structural engineering. By the end of this module students should be able to review the management of the design process and discuss relationships with the other members of the building design team.

The Faculty's interdisciplinary module at level 3, 'Interdisciplinary Issues', is designed to enable students to develop and test their interdisciplinary, analytical and interpersonal skills at a level that will enhance their ability to perform as effective and competent graduate professionals in their future careers. Working in interdisciplinary teams they will identify and critically appraise, for a specific client, key issues within the context of current topics of major significance to professionals operating in the Built and Natural Environments, with an awareness of their relevance to the broader sustainability debate. The module aims to promote better understanding of Built and Natural Environment issues in the community. In addition it will promote an appropriate sense of personal discipline, responsibility, diplomacy and authority in dealing with organisations outside the University and provide a framework for interdisciplinary teamwork.

Inter-professional projects at each level provide the student with an appreciation of other professional perspectives and examine broader issues, which impact on both the built and natural environments.

The Professional Practice Module at level 3 aims to prepare students for practice, wherever they work within the construction industry, by recognising the need to adopt a professional and ethical code of conduct and exposing them to current issues. The qualified architectural technologist will expect to find

employment within design consultancy organisations or within product manufacturers serving the construction industry. Hence the Professional Practice module has been introduced to prepare students for commercial practice and employment within the construction industry. This will expose them to the processes and principles found in these business operations.

Health, Safety and Environment

These topics are covered at each level of the award. They are introduced in the module Introduction to Law and Construction Contracts at level 1 and then further developed in the modules Technology, Design and Environment and Project and Contract Management at level 2 and level 3 respectively

Placements

Students may select a sandwich placement following the completion of a minimum of 200 credits at levels 1/2. Placement credits will be awarded on succesful completion of the placement. The placement regulations are set out in the UG Modular Scheme documentation and can be accessed below.

Core modules

Level 1
UBCLBX-20-1: Construction Technology A (20)
UBCLH6-10-1: Data and Dimensional Control (10)
UBPLHC-20-1: Design in Context (20)
UBPL35-20-1: Design Studio A (20)
UBCLC5-20-1: Environments and Construction Materials (20)
UBCL7B-20-1: Introduction to Law and Construction Contracts (20)
UBIL75-10-1: The Process of Development (10)
Level 2
UBLL7G-20-2: Building Defects and Property Surveys (20)
UBCLCB-10-2: Building Services Engineering (10)
UBPLCJ-40-2: Elemental and Integrated Design (40)
UBCLHE-20-2: Structural Design Technology (20)
UBCLD3-20-2: Technology Design and Environment (20)
Level 3
UBCLDA-40-3: Integrated Building Design (40)
UBLL8K-10-3: Professional Practice (ATD) (10)
UBCLDC-20-3: Project and Contract Management (20)
UBCLDD-20-3: Services and Structures (20)

Optional modules

Students must take 40 credits from the following modules. NOTE Experiential modules can only be taken by students in relevant employment.
20 Credits Shared Electives
UBILJF-20-2: Experiential Learning A (Decision Making) (20)
UBCLPR-20-3: Experiential Learning B (CEME) (20)
UBIL76-10-2: Inter-professional: Development Project (10)
UBIL4N-10-3: Interdisciplinary Issues (10)

Placement

120 P credits
Placements

Target Award

BSc (Hons) Architectural Technology and Design

360 credits of which not less than 100 must be at level 3 or above, not less than 100 at level 2 or above and 140 at level 1 or above.

Default Award

Interim Awards

BSc Built and Natural Environments

300 credits of which at least 60 credits must be at level 3, a further 100 credits at level 2 or above and a further 140 credits at level 1 or above

CertHE Architectural Technology and Design

120 credits of which not less than 100 are at level 1 or above

DipHE Architectural Technology and Design

240 credits at which not less than 100 are at level 2 or above and 120 are at level 1 or above

Section 5: Entry requirements

Applicants must possess Maths and English GCSE at grade C or above.

The programme requires that each student has:

an ability to communicate through an appropriate standard of English both in written and spoken form and a capacity to master technical vocabulary

an ability to work with numerical data and manipulate, as appropriate, physical quantities

visual skills to appreciate and interpret two and three dimensional spatial designs to have the dexterity to sketch, modify and produce appropriate designs of good quality

an ability to move safely and independently on a construction site.

See also the Standard faculty entry requirements apply.

Students with a relevant HNC may be admitted on the basis of credit recognition for all the level 1 modules except Design Studio A and Integrated Design Systems.

Section 6: Assessment Regulations

The assessment regulations are in accordance with the University Modular Assessment Regulations.

Assessment regulations for placements are set out in the UG Modular Scheme documentation.

Section 7: Student learning: distinctive features and support

1. Balance between design and technology

The academic content links the science of architecture, building design and technology thus forming the link between concept and construction.

2. Professional links

BIAT have accepted the course for accreditation in principle for three years (a requirement in the first instance). This will be reviewed after three years when the Faculty will seek full 'accreditation'.

3. Opportunities for part-time study

A day release pathway is available; students may complete this over a five year period. Part-time students in relevant employment may include up to 40 credits of work-based learning within their programmes.

4. Inter-professional ethos

Inter-professional modules allow students to mix with students studying other property and construction-related disciplines representing the full range of built environment professions. In addition, many of the subjects taken during the course are studied with students from other disciplines. This includes Architecture and Planning students in Design Studio A and technology subjects, Building Surveying students in the Building Defects and Property Survey Module and Construction Management students in a number of subjects including Construction Technology and Building Services Engineering.

5. Student Choice

Two shared elective modules provide student choice (full-time) and allow academic investigation in a related area as well as the experience of working with students from other disciplines. There are more than 30 electives to choose from and a full language module may be studied as an alternative elective.

6. Placement opportunities

Full-time students have the opportunity to take a placement year in industry. During the placement

year students maintain links with Faculty staff.

7. Studio/Laboratory work

During the course, students will work in the new, innovative Design Studios building (constructed in 2002), have access to computer suites with CAD and other software, and use the well-equipped Faculty laboratories.

8. Field studies

Students will enhance their studies through appropriate site visits and field trips.

Section 8: Reference points/benchmarks

1. The subject benchmark statement for Architecture and Architectural Technology

Subject benchmarks provide an important external reference when new programmes are being designed and developed. The benchmarking of academic standards for this subject area has been undertaken by a group of specialists facilitated by the Quality Assurance Agency for Higher Education (QAA).

A useful definition identified in the QAA benchmarking statement for the practice of Architectural Technology is that on completion of a degree programme, and with appropriate professional experience, the Architectural Technologist will be able to analise, synthesise and evaluate, design factors in order to produce design solutions which will satisfy performance, production and procurement criteria. It is believed that these academic objectives can be achieved through the study of this particular degree.

2. The University and Faculty Strategies for Teaching, Learning and Assessment

University and Faculty teaching and learning strategies including framework for skills development are set out in Volume 1 of the UG Modular Scheme docoumentation

3. The British Institute of Architectural Technologists (BIAT)

This is an organisation representing professionally qualified individuals practising in the field of architectural technology in the United Kingdom and overseas. The principal aims of BIAT are "the maintenance of standards of competence for the profession and the promotion of the interests of its membership".

The content of the course reflects the subjects identified in the BIAT document "Guidance on Submitting Honours Degree Courses for Accreditation by the British Institute of Architectural Technologists".

4. Research and Consultancy

Many teaching staff on the course have professional practice experience in design offices, construction management or building surveying activities. Some of the architectural staff are associate lecturers and active in practice. An industry forum operates to advise the Faculty on the needs of practice for curriculum and research. The main subjects in the final year integrate the technical aspects into the design process and require students to understand the need for project management to bring the building to fruition.

Consultancy, as well as research, supports much of the technical aspects of the course. In the area of environmental services work on both building acoustics and air infiltration form a major strand of the consultancy while structural research is also undertaken. Other work has focused on conservation of the built cultural heritage, maintenance management and the use of IT by construction companies.

The design strand is delivered by staff with both research and practice experience. There is a strong thread of computer modelling research in the faculty exemplified by a major project on computer prototyping for advanced visualisation of external environments. Other research involves studies on the work on Alvar Aalto, projects with a sustainability theme including for the BRE Environmental Office Building and the Holy Island Buddhist Retreat. There is also an involvement with organising exhibitions and chairing judging panels for architectural competitions.

Research has been undertaken into project management and construction contracts and procurement including value management and outsourcing and procurement, risk management and PFI implementation. More generally research has been completed into leadership and innovation and TQM showing a breadth of expertise in this area. The context in which projects have to be completed related to skill and technological delivery has been researched through studies into the economic impact of landmark projects on local construction activity.