

HNC Construction

<http://www.preston.ac.uk/course/construction-level-4>

HNC in Construction
- Awarded by the
University of Central
Lancashire.

DURATION
2 years

Level
4

PC Code
PC00715

ENQUIRE ONLINE

Cost: (To be confirmed)

Approximately £500/module

Yr1 4 modules + registration £2200 approx.

Yr2 4 modules £2000 approx.

Delivery: (To be confirmed)

Yr1 Day release- 0830am-1730pm

Yr2 Day release- 0830am-1730pm

Start Date: (To be confirmed)

Yr1 in Jan 2018 (subject to numbers), otherwise Mon 10th

Sept 2018

2 semesters of 17 weeks each

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This professional qualification is designed to help those looking to develop their career in the industry perhaps moving into management, design, surveying or even architectural technology. It also offers entry to related degrees at university or middle to senior management level positions in the industry.

Yr1				Yr2			
BN1091	BN1093	BN1095	BN1094	BN1092	BN1096	BN2091	BN2096
Construction Technology 1	ICT 1	Workplace Module 1	Legal Studies	Construction Management & Econ	Performance of Const. Mats.	Construction Technology2	Project
S1	S2	S2	S1	S1	S2	S1	S2

HNC Construction - 8 modules over 2 years ie 4 modules per year-**Year1****BN1091 Construction Technology 1****The Module comprises:**

Introduction: Site appraisal, design processes, building performance requirements & site establishment.

Substructure: Site investigation, soils and excavations. Foundation design (traditional, deep and wide strip, raft and pile foundations, pad & pier).

Ground Water exclusion: DPCs and DPMs

Superstructure: External walls (masonry, timber & steel frames and pre-fabricated components) assessment of performance. Roofs (flat and pitched designs) claddings (slate, tiles, asphalt & built-up felt). Floors (solid & suspended). Frames & Framed buildings (steel and concrete).

Secondary Elements: Circulation elements (stairs & ramps). Components (doors, roof lights and fenestration). Internal Partitions. Finishes (internal and external).

Building Services: Water, power, gas, communications and drainage systems.

Environmental Science: Sound, light, heat and comfort

Roads and Highways: layout for small-scale developments, formation and structure.

BN1091 Construction Technology 1**Module Text:**

Billington, M. J. et alia (2017) *The Building Regulations Explained and Illustrated*, John Wiley and Sons Ltd

Chudley, R & Greeno, R (2016) *Building Construction Handbook*. 11th Edition Routledge

Emmett, S.. & Gorse, C. A. (2104) *Barry's Advanced Construction of Buildings*. 3rd Edition John Wiley & Sons Ltd

Foster, J & Greeno, R. (2013) *Structure & Fabric Part 1*. 7th Edition,

Greeno, R. (2013) *Principles of Construction, Second Edition*. Routledge

HM Government (Various) *Building Regulations*. RIBA Enterprises Ltd

Hughes, P. & Ferrett, E. (2016) *Introduction to Health and Safety in Construction*, 5th Edition Routledge

Marshall, D. et alia (2013) *Understanding Housing Defects*, 4th Edition Routledge

Marshall, D. et alia (2013) *The Construction of Houses*. 5th Edition Routledge

Further Reading:

Brook, M. (2017) *Estimating and Tendering for Construction Work*. 5th Edition Routledge

Burberry, P, (2015) *Mitchell's Environment and Services*. 8th Edition Routledge

Calvert R.E. et alia (2011) *Introduction to Building Management*. 6th Edition, Routledge

Cartlidge, D. (2017) *Quantity Surveyor's Pocket Book*. 3rd Edition Routledge

Chadderton, D V (2013) *Building Services Engineering*. 6th Edition Routledge

Emmett, S. & Gorse, C.A. (2014) *Barry's Advanced Construction of Buildings*. 3rd Edition John Wiley & Sons Ltd

Hall, F. & Greeno, R. (2016) *Building Services Handbook*, 8th Edition Routledge

Harris, F. et alia (2013) *Modern Construction Management*. 7th Edition Wiley-Blackwell

Oakland, J. S. et al (2017) *Total Construction Management*. Routledge

Pettinger R. (2002) *Introduction to Management*. 3rd Edition, Palgrave, Basingstoke

Billington, M. J. et alia (2017) *The Building Regulations Explained and Illustrated*. John Wiley and Sons Ltd

BN1093 ICT1**The Module comprises:**

Introduction: An introduction to Information and Communication Technology and the College/University Intranet and how to use learning resources for mining information.

Communication: An introduction to the WWW and email.

IT Applications: An introduction to the use of MS Office applications (word processing, spreadsheets, databases, slide presentation, file management and appointment).

CAD: Introduction to 2D CAD and its possible applications to industry

BN1093 ICT1**Module Text:**

Matthews, C. and Matthews, M. (2014) *Microsoft Office 2013*. McGraw-Hill: New York ; London

Gladfelter, D. (2014) *AutoCAD 2015 and AutoCAD LT 2015: no experience required*. John Wiley & Sons

Nordell, R. et alia (2013) *Microsoft Office 2013 in practice*. McGraw-Hill: New York; London

Weverka, P. (2016) *Office 2016 All-in-One for Dummies*. John Wiley & Sons Inc

Further Reading:

Lockhart, S. & Leach, J. A. (2017) *AutoCAD 2018 Instructor*. SDC Publications

Stine, D. & Hanson J. (2017) *Revit 2017 Architectural Command Reference*. SDC Publications

BN1094 Legal Studies

The Module comprises:

General principles: An introduction to the law-making process, the supremacy of Parliament, the legislative process, the role of the courts, statutory interpretation, judicial precedent, the role of the EU, legal personalities, the principles of agency.

Law of obligations: Principles of liability in tort, with particular emphasis on the tort of negligence. Principles relating to formation of contracts including offer, acceptance, consideration, and the intention to create legal relations. Extent and nature of liability, including defects.

Built Environment: English Town Planning and Building Control rules distinguished. Enforcement, Actions available on alleged non-compliance or refusal: appeals and adjudications, dispensations. Law relating to highways, dangerous structures, demolition, vacant sites and noise abatement. Provisions with regard to amenity.

Health & Safety: Duties & powers of inspectorates such as HSE, enforcement of Acts and regulations.

Procurement: Nature of procurement systems in use. Law affecting procurement of building/refurbishment work.

BN1094 Legal Studies

Module Text:

Galbraith, A. (2005) *Galbraith's Building and Land Management Law for Students*. 5th Edition Butterworth–Heinemann.

Hughes, P. & Ferrett, E. (2016) *Introduction to Health and Safety in Construction*. 5th Edition Routledge
LLRS electronic guides

Owen, S. (2013) *Law for the Construction Industry*. 2nd Edition Routledge

Stone, R. (2017) *Text, Cases and Materials on Contract Law*. 4th Edition Routledge

Thomas, P. A. & Knowles, J. (2001) *Dane and Thomas: How to use a Law Library*. 4th Edition Sweet & Maxwell

Uff, J. (2017) *Construction Law*. 12th Edition Sweet and Maxwell.

Further Reading:

Hughes, W. et al (2015) *Construction Contracts – Law and Management*. 5th Edition Routledge

Mason, J (2016) *Construction Law*. Routledge

BN1095 Workplace Module1

The Module comprises:

Investigation/analysis of an agreed area of work-related activity relevant to the student's course and personal interests.

The focus and limits for each student's investigation will be individually negotiated. The module is not limited to specific content or investigatory techniques. However, as part of the investigation students will be expected to

- (i) identify, negotiate and agree a specific work related activity
- (ii) Identify the nature of documentation used in the work related activity, trace its use and development and assess its usefulness.
- (iii) Identify the health and safety procedures affecting the particular activity they have agreed to investigate and assess the need for them.
- (iv) Identify problems that arise in the organisation or in the course of the work and the solutions implemented.
- (v) Apply some of the knowledge and skills being developed in modules studied in parallel and in completed modules

Investigations may take the form of a project that naturally leads to the production of some product or document (e.g. installation and commissioning of a piece of equipment or production of a cost/pricing database) whilst others will take the form of investigatory journalism (e.g. comparison of methods for procuring equipment or for meeting service needs of buildings), and others still would be limited to a part of a larger activity or activities (e.g. the early stages of building design or production of contract documents for a number of projects). Therefore the portfolio may take a number of forms and could be supplemented by (or in principle could entirely consist of) a project report, video production, IT software application (such as a database), etc.

BN1095 Workplace Module1

Module Text:

Naoum, Dr S G (2013) *Dissertation Research and Writing for Construction Students*. 3rd Edition Routledge

Trott, P (2016) *Managing Technology Entrepreneurship and Innovation*. Routledge

Year2

BN1092 Construction Management and Economics

The Module comprises:

Management theory – Classical and modern

Organisational theory – Linear and Matrix

Teamwork / Leadership

Motivation theories

Planning / Scheduling / Programming

Management of Health and Safety

Microeconomics – Theory aimed at understanding of how companies operate and how this affects the individual

Macroeconomics – Theory aimed at understanding national policy / fiscal policy

BN1092 Construction Management and Economics

Module Text:

Calvert, R.E (1995) *Introduction to Building Management* 6th Edition, Newnes, Oxford

Cole, G.A and Gerald A (2004) *Management Theory and Practice* 6th Edition, Thomson, London

Myers, D. (2017) *Construction Economics*, 4th Edition Routledge

Sherratt, F (2015) *Introduction to Construction Management*, Routledge

Further Reading:

Hughes, W et al (2015) *Construction Contracts – Law and Management*, 5th Edition Routledge

McCaffer et' al (2001) *Modern Construction Management* 5th Edition, Blackwell Science, Oxford

Oakland, J S et al (2017) *Total Construction Management*, Routledge

Pettinger R (2002) *Introduction to Management* 3rd Edition, Palgrave, Basingstoke

Trott, P (2016) *Managing Technology Entrepreneurship and Innovation*, Routledge

BN1096 Performance of Construction Materials

The Module comprises:

This module will include study of the following materials used in construction:

Concrete - Design of normal concrete mixes, the role of cement replacements, introduction to chemical composition, hydration reaction, the properties of aggregates, the influence of the water-to-cement ratio upon the compressive strength, overview of admixtures and additives.

Timbers - Mechanical properties of timbers. Definitions of stress and strain. Stress-strain relationships. Elasticity and Limit of Proportionality.

Metals - Mechanical properties of plastics. Definitions of stress and strain. Stress-strain relationships. Elastic and plastic phenomena. Corrosion;

Plastics - Mechanical properties of plastics. Definitions of stress and strain. Stress-strain relationships. Elastic and plastic phenomena;

Masonry - Structure, porosity and properties of masonry materials. Capillarity, moisture ingress and associated properties.

BN1096 Performance of Construction Materials

Module Text:

Illston, J.M. (2010). *Construction Materials*. 4th Edition Taylor & Francis

Lyons, A (2015) *Materials for Architects and Builders*, 5th Edition Routledge

Taylor, G. D (2001). *Materials in Construction*. 2nd Edition Longman

Further Reading:

Kibert, C (2007). *Sustainable Construction: Green building design and delivery*. 2nd Edition John Wiley & Sons

Kirkup, L. (1995). *Experimental Methods: Introduction to the Analysis and Presentation of Data*. John Wiley & Sons. Australia.

BN2091 Construction Technology2

The Module comprises:

Site conditions and constraints - Inner city and brown-field sites and the reuse of building plots, filled and contaminated sites, temporary and false works, retaining walls and ground stabilisation and remediation;

Substructures - Foundation solutions for multi-storey buildings, soil support, control of groundwater, basement construction;

Superstructures - Structural frames and masonry structures, appraisal of the principles of structural design, connections, applications to simple frames, reinforcement materials and design, fire protection and performance, integration of environmental service systems, roof selection, design, construction and the performance of roofing systems.

BN2091 Construction Technology2

Module Text:

Billington, M. J. et alia (2017) *The Building Regulations Explained and Illustrated*, John Wiley and Sons Ltd
 Chadderton, D V (2013) *Building Services Engineering*, 6th Edition Routledge
 Chudley, R & Greeno, R (2016) *Building Construction Handbook*, 11th Edition Routledge
 HM Government (Various) *Building Regulations*. RIBA Enterprises Ltd
 Kibert, C. (2007). *Sustainable Construction: Green building design and delivery*. John Wiley & Sons. 2nd Ed
 Marshall, D et alia (2013) *The Construction of Houses*, 5th Edition Routledge
 Marshall, D et alia (2013) *Understanding Housing Defects*, 4th Edition Routledge

Further Reading:

Brook, M (2017) *Estimating and Tendering for Construction Work*, 5th Edition Routledge
 Cartlidge, D (2017) *Quantity Surveyor's Pocket Book*, 3rd Edition Routledge
 Draycott, T. (2009). *Structural Elements Design Manual: Working with Eurocodes* Butterworth-Heinemann. 2nd Ed.
 Foster, J.S. and Greeno, R. (2007). *Structure and Fabric Part 2*. Prentice Hall. 7th Ed.
 Hall, F & Greeno, R (2016) *Building Services Handbook*, 8th Edition Routledge
 Illston, J.M. (2010). *Construction Materials*. Taylor & Francis. 4th Ed.
 Reed, R. & Sims, S. (2014) *Property Development*, 6th Edition Routledge
 Ross, K. (2005). *Modern Methods of House Construction*. HIS BRE Press.
 Taylor, G.D. (2001). *Materials in Construction*. Longman. 2nd Ed.
 Tomlinson, M.J. (2001). *Foundation Design and Construction*. 7th Ed. Prentice Hall

BN2096 Project

The Module comprises:

Establishing the needs of the client: Objectives/rationale and client requirements for the project. Strategic and Project briefs (project objectives, functional and operational needs, and key targets for quality/time/cost, environmental factors.

Brief resolution: Site constraints, research of statutory restrictions, cost/value reconciliation, sources of finance, technical requirements. Risk analysis.

Statutory requirements: Technical solution, value, design workability, buildability, exploring opportunities, development and testing of options, revising the strategic brief.

Documentation: Evaluation of design information and preparation of technical or production information, scheme design, example working details, format of procurement and contract. Site layout and rationale. The Risk File.

Programme for construction: Establishment of time scales and production of indicative tender documentation and cost information. Cost and resource schedules. Key milestones and targets, project execution plan, performance measures.

BN2096 Project

Module Text:

CIOB. Code of Practice for Project Management. 2nd ed. Longman. 2000. Oakland, J S et al (2017) *Total Construction Management*, Routledge
 Rougvie, A. Project Evaluation and Development. B.T. Batsford. 1995.
 Trott, P (2016) *Managing Technology Entrepreneurship and Innovation*, Routledge

Further Reading:

Oakland, J. Total Quality Management - the route to improving performance. 2nd ed. Butterworth Heinemann
 Naoum, Dr S G (2013) *Dissertation Research and Writing for Construction Students*, 3rd Edition Routledge

End _____

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