DEPARTMENT OF QUANTITY SURVEYING
FACULTY OF ENVIRONMENTAL SCIENCES
UNIVERSITY OF ILORIN, ILORIN

CURRICULAR FOR POSTGRADUATE PROGRAMMES IN QUANTITY SURVEYING

Proposed Programmes

Post Graduate Programme (PGD) in Quantity Surveying

Master of Science (MSc.) in Quantity Surveying

Doctor of Philosophy (PhD.) in Quantity Surveying

JANUARY, 2023

Post Graduate Diploma in Quantity Surveying
PGD Quantity Surveying

A. List of Academic Staff

Names	Status and Qualifications	Research Interest
G. Amuda-Yusuf	Reader & Ag. Head of Department B.Sc. (Zaria); M.Sc. (Salford); Ph.D. (Johor, Malaysia); FNIQS, RQS	Cost Management of Building services
P. O. Lawal	Reader B.Sc. (Zaria); M.Sc. (U.K); Ph.D. (Jos); FNIQS, RQS	Construction Management
B. Suleiman	Senior Lecturer DIP (Burgas); M.Sc., Ph.D. (Varna); MNIQS, RQS	Construction Management
M. A. Shogo	Senior Lecturer ND (Kwara Poly); B.Tech. (Minna); M.Sc. (Lagos); Ph.D. (Johor); MNIQS, RQS	Risk Management
A. A. Arowosegbe	Senior Lecturer HND (Owo); PGD (Akure); M.Sc. (Akwa); Ph.D. (Johor); FNIQS, RQS	Quantity Surveying and Construction Management
Ranti T. Adebiyi	Senior Lecturer B.Tech. (Minna); MBA (Ilorin); M.Sc., Ph.D. (Ile-Ife); FNIQS, RQS	Construction Health and Safety Management
A. I. Jimoh	Lecturer I ND (Kaduna Poly); B.Sc. (Zaria); MBA (Ilorin); M.Sc., Ph.D. (Lagos); FNIOB, RBlder	Construction Management
K. Ibrahim	Lecturer I B.Tech. (Minna); M.Sc. (Zaria); Ph.D. (South Africa); MNIOB, RBlder	Construction Technology
T.O. Olowa	Lecturer I B.Tech. (Akure); M.Sc. (Lagos); Ph.D. (Esthonia); FNIQS, RQS	Cost Management
A. S. Rasheed	Lecturer I B.Sc. (Zaria); M.Sc. (Lagos); MNIQS, RQS	Construction Management
L. O. Olorunoje	Lecturer II B.Tech. (Minna); M.Sc. (Ile-Ife); MNIQS, RQS	International Construction Management
S. Idris	Lecturer II B.Tech. (Minna); M.Sc., (Akure); MNIQS, RQS	Cost Management of Building services
*A. A. Jimoh	Professor B.Eng., M.Eng., Ph.D. (Ilorin); MNSE., R.Engr.	Building Structures
*A. A. Adedeji	Professor B.Sc., M.Sc. (Prague); Ph.D. (Zaria); MNIEM, MNICE, MACEN, MNGA, R.Engr.	Heavy Engineering Construction
* A.I. Bako	Reader HND, FTP, B.Sc. (NOUN); MURP (Ibadan); MBA (Ilorin); Ph.D. (Akure); MNITP, RTP	Urban Planning
*A. Babalola	Senior Lecturer B.Sc., M.Sc. (Yola); Ph.D. (Johor)	Surveying and Geoinformatics
*N. A. Bello	Senior Lecturer B.Sc., M.Sc. Ph.D. (Ile-Ife); M.Sc. (Ibadan),	Facilities Management
*A.A. Daibu	Lecturer I LL.B. (Ilorin); BL.; LL.M. (Ilorin); Ph.D. (Ilorin)	Construction Law and Arbitration

* Lecturers from other departments

B. Introduction

The programme is structured to serve as a stepping stone to study Master degree in Quantity Surveying. It gives opportunity to graduates of recognized universities with third class degree in Quantity Surveying or graduates of recognized universities with Second Class
Lower degree in allied disciplines such as: Building, Architecture and Civil Engineering to pursue higher degree in Quantity Surveying. The programme shall lead to the award of Postgraduate Diploma in Quantity Surveying with Distinction, Credit or Pass.

C. Philosophy

The Postgraduate Diploma (PGD) in Quantity Surveying programme is the provision of deeper insight into phenomena of Quantity Surveying. It is essential for Quantity Surveying graduates with Third Class (Honours) or graduates of other related discipline such as Building, Architecture and Civil Engineering who intend to pursue higher degree in Quantity Surveying.

D. Aim and Objectives

The aim of this programme is to fully prepare students for a career in research, development and teaching. The objectives are to;

i. train students to undertake practical and theoretical research in specialized area of Quantity Surveying;
ii. train students to write clear and concise technical report to give interesting and engaging presentation; and
iii. widen the scope of the students for career in different sectors of employment.

E. Admission Requirements

To gain admission into the PGD programme, Applicants must hold:
i. a degree from University of Ilorin or any other recognised University with a minimum of third class (3rd class) in a relevant field and must have had a minimum of five (5) years of relevant industrial experience (to be assessed on an individual basis); or
ii. a good HND (at credit level) in related field of study from a recognized University/Polytechnic or any other institution considered as equivalent; or
iii. a relevant HND certificate (lower than credit) and must have had a minimum of five (5) years of relevant industrial experience (to be assessed on an individual basis). In each of the case (i) - (iii) above, candidates are expected to have at least five O 'level credits in Mathematics, Physics, English, and any two from Chemistry, Economics, Technical Drawing, Geography, and Biology.

F. Duration of the Programme

The taught aspect of the PGD Quantity Surveying programme will involve lectures, course work and seminar/workshop to be pursued only on full time basis. However, candidates may choose to revert to part time status after completion of the taught component. Whether or not a candidate continues on full-time basis after completion of the taught part, the maximum duration for completing the PGD programme is 24 months.

G. Detailed Course Description

QTS 701 Construction Technology 3 Credits

Industrialized buildings. Fire resistance. Large Sized Buildings. Reinforced concrete versus steel framed buildings. Large Span Roofing Systems. Builders work in connection with services. Site works. Plant selection. Organization and maintenance. Road works. Pre-stressed and precast concrete structures.
30h (T); 45h (P); C

QTS 702: **Measurement of Building, Civil and Services Engineering Works 3 Credits**
Measurement of complex new buildings. Alterations, renovations and maintenance works and associated mechanical and electrical installations. Measurement of civil and heavy engineering systems.
15h (T); 90h (P); C

QTS 703 **Professional Practices and Procedure 3 Credits**
Principles and basis of fee calculations of professional fees claims. Negotiations of fees and payments. Conditions of engagement with reference to QSRBN approach. Professional ethics. Insurance cover for QS practice. QSRBN/NIQS rules and advertising prospects. Impact of marketing quantity surveying. Tendering. Effect of choice on type of contract. Lithographic/documentation considerations in tendering and consequent costs. Role of the QS in the tendering process. Tender evaluation. Financial reporting. Valuations. Preparation of final accounts. Claims. Treatment of fluctuations.
30h (T); 45h (P); C

QTS 704 **Construction Law and Arbitration 3 Credits**
Principles of law of contract and tort. Construction contracts and their administration. Roles and responsibilities of contracting parties. Organizations for contract administration. Liabilities for contracting parties. Claims and disputes. Arbitration.
30h (T); 45h (P); C

QTS 705 **Construction Management and Economics 3 Credits**
Management principles and their application to construction. Organizational theory and behaviour. Application of quantitative tools and techniques of solving construction-related problems. Management of complex projects. Personnel management. Professional conduct and indemnity insurance. Building design economics. Cost planning and control. Life cycle cost analysis. Cost data.
30h (T); 45h (P); C

QTS 706 **Operations Research3 Credits**
Principles and application of operations research techniques in construction. Decision theory. Systems theory. Linear and dynamic programming. Network analysis. Learning curves. Queuing. Optimization. Forecasting. Statistical quality control. Inventory control/management.
15h (T); 90h (P); C

QTS 707 **Research Methods 3 Credits**
Research theory identification and development. Market research. Sources of research information. Assimilation and synthesis of research information. Literature reviews. Literature synthesis and theory development. Research methodology. Hypothesis generation and evaluation. Data collection and processing techniques.
30h (T); 45h (P); C

QTS 708 Soil Mechanics and Foundations 3 Credits

Soil Mechanics and Foundations. Properties of Soil. Laboratory Testing of Soils. Spread Foundation and Mats. Pile Foundations. Caisson or Pier Foundation for Buildings and Bridges. Settlement of Structures. Shoring and Underpinning. Sheet Piles and Cofferdams. Strengthening Foundation Soils.

30h (T); 45h (P); E

QTS 709 Materials in Construction 3 Credits

Common materials used in construction. Steel. Bridges. Timber application in: Multi-storey/Complex Buildings and Industrial Buildings. Cement and Concrete. Waterproofing and Painting. Additives. Reinforced Concrete in Walls. Flooring Systems. Foundation. Arches. Culverts and Frames. Glass and plastics.

30h (T); 45h (P); E

QTS 710

Highway Engineering and Management 3 Credits

General administration and handling of highways. Highway Policies and Administration. Applications of economic analysis to highway transportation. Highway Planning and Programming. Urban Transportation Planning. Environmental Engineering. Right-of-way Acquisition. Specifications. Cost Estimation. Construction Management. Maintenance Procedures and Management.

30h (T); 45h (P); E

QTS 711

Construction Equipment and Methods 3 Credits

The fundamentals of construction equipment and methods. Equipment economics. Selection and efficient application of equipment. Design and simulation of construction operations. Analysing production outputs and cost.

30h (T); 45h (P); E

QTS 799 Postgraduate Report 6 Credits

Technical report-writing on an independent study. This Report should include an introduction to the topic, literature review, research methodology, analysis of data, conclusions and recommendations, appendixes and references. **270h (P); C**

H. Graduation Requirements

In order to obtain a PGD in Quantity Surveying, the student must pass 33 Credits comprising 27 Credits of Core Courses and 6 Credits of Elective Courses.

I. Summary

Compulsory Courses: QTS 701(3), 702(3), 703(3), 704(3), 705(3), 706(3), 707(3), 799(6) **= 27 Credits**

Elective Courses: QTS 708(3), 709(3), 710(3), 711(3) **= 6 Credits**

Total **= 33** Credits

Master of Science in Quantity Surveying
M.Sc. Quantity Surveying

A. List of Academic Staff

Names	Status and Qualifications	Research Interest
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P. O. Lawal	Reader B.Sc. (Zaria); M.Sc. (U.K); Ph.D. (Jos); FNIQS, RQS	Construction Management
B. Suleiman	Senior Lecturer DIP (Burgas); M.Sc., Ph.D. (Varna); MNIQS, RQS	Construction Management
M. A. Shogo	Senior Lecturer ND (Kwara Poly); B.Tech. (Minna); M.Sc. (Lagos); Ph.D. (Johor); MNIQS, RQS	Risk Management
A. A. Arowosegbe	Senior Lecturer HND (Owo); PGD (Akure); M.Sc. (Akwa); Ph.D. (Johor, Malaysia) FNIQS, RQS	Quantity Surveying and Construction Management
Ranti T. Adebiyi	Senior Lecturer B.Tech. (Minna); MBA (Ilorin); M.Sc., Ph.D. (Ile-Ife); FNIQS, RQS	Construction Health and Safety Management
A. I. Jimoh	Lecturer I ND (Kaduna Poly); B.Sc. (Zaria); MBA (Ilorin); M.Sc., Ph.D. (Lagos); FNIOB, RBlder	Construction Management
K. Ibrahim	Lecturer I B.Tech. (Minna); M.Sc. (Zaria); Ph.D. (South Africa); MNIOB, RBlder	Construction Technology
T.O. Olowa	Lecturer I B.Tech. (Akure); M.Sc. (Lagos); FNIQS, RQS	Cost Management
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* A.I. Bako	Reader HND, FTP, B.Sc. (NOUN); MURP (Ibadan); MBA (Ilorin); Ph.D. (Akure); MNITP, RTP	Urban Planning
*A. Babalola	Senior Lecturer B.Sc., M.Sc. (Yola); Ph.D. (Johor)	Surveying and Geoinformatics
*N. A. Bello	Senior Lecturer B.Sc., M.Sc., Ph.D. (Ile-Ife); M.Sc. (Ibadan)	Facilities Management

* Lecturers from other departments

B. **Introduction**

The programme is for graduates of Quantity Surveying seeking a specialty, working class Quantity Surveyors, and other related disciplines who wish to advance their frontiers of Quantity Surveying knowledge. It is an opportunity to contribute to the public, the understanding of Science, Engineering and Technology.

C. **Philosophy**

The philosophy of M.Sc. Quantity Surveying programme is to develop reflective practitioners who have knowledge and understanding of procurement and financial management. The primary focus is on developing relevant core skills that provide solid and comprehensive foundation for effective cost management of construction projects. The secondary focus is on providing some degree of flexibility that enable students target at specialisation and choose their career paths through selection of appropriate courses. The M.Sc. Quantity Surveying programme has become particularly important in order to address further contributions to the development of academic manpower and promotion of research in a range of specialised areas related to the profession of Quantity Surveying.

D. **Aim and Objectives**

The aim is to provide competent graduates who wish to progress their careers in the field of Quantity Surveying (QS) permitting entry to the built environment sector, enabling them to achieve a level of attainment equivalent to an M.Sc. This aim will be fulfilled through the following objectives:

i. to develop learning which contributes to the educational requirement for Quantity Surveying in the area of building cost control and measurement;
ii. to provide an in-depth coverage of contract and procurement skills to an acceptable standard; iii. to develop transferable skills appropriate to professional practice in the fields of quantity surveying, construction practice in the built environment profession and management; and
iv. to prepare graduates for further academic and research pursuit in the various fields within the quantity surveying specialties.

E. **Admission Requirements**

To gain admission into M.Sc. Degree in Quantity Surveying, applicants must hold either:

i. a minimum of second class lower honours degree in Quantity Surveying from University of Ilorin or any other recognised University, or
ii. a 3rd class degree in Quantity Surveying with at least five years of relevant experience or with full membership of the Nigerian Institute of Quantity Surveyors (NIQS) and at least three years of relevant experience, or
iii. a PGD in Quantity Surveying from a recognised university and with a CGPA of 3.0 and above.

In each of the case (i) – (iii), candidates are expected to have at least five O 'level credits, which must include Mathematics, Physics, English, and any two from Chemistry, Economics, Technical Drawing, Geography, and Biology.

F. **Duration of the Programme**

The taught aspect of the M.Sc. Quantity Surveying programme will involve lectures, course work and seminar/workshop to be pursued only on full time basis. However, candidates may choose to revert to part-time status after completion of the taught component. Whether or not a candidate continues on full-time basis after completion of the taught part, the maximum duration for completing the programme is 36 months.

G. **Detailed Course Description**

QTS 801 Advance Measurement and Specification 3 Credits

Relationship between Resources of Clients and Specification. Evaluation of Architectural design and implications for measurements and description. An

overview of systems of measurements and description. Measurements of typical schemes/projects **15h (T); 90h (P); C**

QTS 802 **Cost Estimating and Modelling 3 Credits**
Concepts of estimating. Computerised estimating system. Tools and techniques used for monitoring. Managing and controlling costs of building and engineering systems. Cost modelling. Exploration in cost modelling. Product and process modelling. Delay in cost modelling. Practical application of cost modelling to cost planning and control of engineering projects.
30h (T); 45h (P); C

QTS 803
Construction Contracts and Procurement 3 Credits
Advanced procurement practices. Construction project procurement. Procurement arrangement options. Construction contracts used in the Nigerian construction industry (JCT, FIDIC, FMW etc.). Principles of Contract Law. Partnering. Procurement through Public Private Partnerships. Claims. Negotiating. Managing Conflicts and Disputes. Mechanisms used by a typical standard form of construction contract.
30h (T); 45h (P); C

QTS 804
Project Management: Theory and Practice 3 Credits
History and development of project management up to the present day. Project management concepts. Roles and responsibilities of project managers. Organisational structures. Relevant construction project management practice standards. Project implementation. Project teams. Project leadership. Project communication. Relationships with clients, users and funding bodies. Client briefing. Network analysis. Computer aided project planning. Relationships between time, cost and quality. Human and technical aspects of project management. Comparison of international project management best practices.
30h (T); 45h (P); C

QTS 805
Construction Practices and Information Technology 3 Credits
Management Information systems for integrated work environment. Electronic Documents Management. Development strategy for information systems. Introduction to IT Infrastructure and EDI. E-business in construction. Building Information Modelling (BIM). Mobile computing in construction. Smart/Intelligent Building. Information systems and Knowledge Management. IT-ethics and human-IT relationship
30h (T); 45h (P); C

QTS 806
Proposal Developments and Seminar 3 Credits
This course entails proposal development and presentation at the departmental seminar series to reflect the student's intended research area.
135h (P); C

QTS 807 **Applied Research Methods 3 Credits**
Research skill required to undertake a thesis and technical report writing. Research theory, identification and development. Market research. Sources of research information. Assimilation and synthesis of research information. Literature reviews. Literature synthesis and theory development. Research

methodology. Hypothesis generation and evaluation. Data collection and processing techniques. Referencing systems/styles and effective ways for writing abstracts.
30h (T); 45h (P); C

QTS 808 **Advanced Operations Research 3 Credits**
Advance concepts, principles and application of operations research techniques in construction. Decision theory. Systems theory. Linear and dynamic programming. Network analysis. Learning curves. Queuing. Optimization. Forecasting. Statistical quality control. Inventory control/management.
30h (T); 45h (P); C

QTS 809
Construction Financial Management 3 Credits
Importance of financial management and control in contracting. Corporate strategies in construction companies. Financial management at the company level. Cash flow forecasting. Costing. Cost and value reconciliation. Production of financial accounts for construction companies. Corporate analysis. Ratio analysis applied in construction. Economic comparison. Profitability measurement. Construction plant financial appraisal. Calculation of plant hire rate. Development appraisal techniques.
45h (T); E

QTS 810
Sustainable Design and Development Economics 3 Credits
The principles and practice of sustainability issues as they relate to the built environment. Critical understanding of the development process and stages. Sustainable design. Housing quality. Place identity and character. Public realm. Site briefing. The planning system. Urban design and housing quality. Policy framework. Climate aspect of safety. Planting. Management. Housing layouts. Accessible environments. Market and needs analysis. Developer's budget. Cash flow and financial appraisal. Risk analysis
45h (T); E

QTS 811
Strategic Management in Construction 3 Credits
Development of organisational plans. Strategic Management Concepts. External and Internal Environment Analysis. Financial Strategies. Decision and Analytical Tools. Total Quality Management. Business Process Re-engineering. Performance measurement and tools. Corporate Strategic Events. Leadership and Decisionmaking. Corporate Social Responsibility. Marketing of services. Construction performance and causes of Project Management failures. Lessons learned from other industries. Lean Construction. Performance Measurement and Benchmarking. Leadership and Influence. Supply Chain Management and Strategic Partnering.
45h (T); E

QTS 812 **Macroeconomics, Finance and the Built Environment 3 Credits**
Interaction of the economy with the built environment. Financial control methods. Relevant macroeconomic theory. Analysis of the complex relationships between the economy and the real estate market. Advanced analysis of financial market structures and partnerships. Property market cycles including long waves of urban development. Financing of infrastructure projects including private finance, initiative. Public-private partnership models including tax incentives.
45h (T); E

QTS 899 Dissertation 6 Credits

Independent research project approved by the department **270 (P); C**

H. Graduation Requirements

To obtain an M.Sc. degree in Quantity Surveying, the student must pass 36 Credits comprising 30 Credits of Core Courses and 6 Credits of Elective Courses.

I. Summary

Compulsory Courses: QTS 801(3), 802(3), 803(3), 804(3), 805(3), 806(3), 807(3), 808(3), 899(6) **= 30 Credits**

Elective Courses: QTS 809(3), 810(3), 811(3), 812(3) **= 6 Credits**

Total = **36 Credits**

Doctor of Philosophy in Quantity Surveying
Ph.D. Quantity Surveying

A. List of Academic Staff

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G. Amuda-Yusuf	Reader & Ag. Head of Department B.Sc. (Zaria); M.Sc. (Salford); Ph.D. (Johor); FNIQS, RQS	Cost Management of Building services
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*Ayo Babalola	Senior Lecturer B.Sc., M.Sc. (Yola); Ph.D. (Johor)	Surveying and Geoinformatics
*N. A. Bello	Senior Lecturer B.Sc., M.Sc., Ph.D. (Ile-Ife); M.Sc. (Ibadan)	Facilities Management

* Lecturers from other departments

B. Introduction

The programme is to develop highly skilled professionals for the public, private and international organizations, as well as for teaching and research in tertiary institution and for global competitiveness. It trains the student to consider and handle complex problems and also initiate students into research. The Ph.D. programme also accords the candidate the opportunity to apply recent technological development to the solution of emerging Quantity Surveying problems. It is

structured so that the students can attain academic mastery in one of the areas of study within the Quantity Surveying discipline.

C. Philosophy

The philosophy of Ph.D. Quantity Surveying programme is to develop reflective academics, researchers and practitioners who have knowledge and understanding of procurement and financial management and recognise the significance of process, technology and people to the success and attainment of maximum value for money from building and engineering projects. The primary focus is on developing relevant core skills that provide comprehensive and solid foundation for effective cost management of building and engineering projects.

D. Aim and Objectives

The objective of the Ph.D. programme is to prepare graduates for solving academic/research or practical problems within the domain of Quantity Surveying specialties. This programme is a viable seedling that produces senior academics not only for University of Ilorin, but for other tertiary institutions offering Quantity Surveying in Nigeria.

E. Admission Requirements

Candidates seeking admission into Ph.D. Degree in Quantity Surveying must have the following qualification from recognized institutions.

i. Five 'O' Level Credits passes including English Language, Biology/Agric. Science, Chemistry, Mathematics and Physics.
ii. Bachelor degree in Agriculture or related disciplines with a minimum of Second Class Lower division in addition to satisfying University Matriculation requirements.
iii. Academic Master of Science degree in Quantity Surveying, Construction Management, Project Management, Construction Project Management or Construction Economics with a minimum of 60% or CGPA of at least 4.0/5.0

F. Duration of the Programme

The Ph.D. programme will be available on both full-time and part-time basis. The maximum duration for the programme on full-time and part-time is 36 months and 72 months respectively.

G. Detailed Course Description

QTS 901 Protocol Seminar 2 Credits

Research protocol outlining in detail the proposed work for the programme, shall be presented within the first four (4) months of the programme for assessment. **90h (P); C**

QTS 902 Seminar II 2 Credits

First seminar presentation to the Department by the student, detailing the progress of the research work being undertaken. Seminar shall be graded by the departmental postgraduate board.
90h (P); C

QTS 903 Seminar I 2 Credits

Departmental Seminar to be presented by the student during the final stages of the research work being undertaken. Main findings and contributions to knowledge.
90h (P); C

QTS 904 Advanced Research Methodology II 3 Credits

Basis of quantitative and computing skills, technical papers understanding and critical review. Nature and purpose of research. Types of research. Basic

competence required of researchers; basics of research. Factors influencing selection of a researchable topic.
45h (T); C

QTS 905 Advanced Research Methodology I3 Credits
Statistical analysis in problem solving. Multiple and pretrial correlations, analysis of time series data. Simple and multiple regression models and their applications. Use of factor analysis, Discriminant Analysis and Analysis of variance (ANOVA).
45h (T); C

QTS 999 Thesis 12 Credits
The student will be expected to formulate a practical problem in Quantity Surveying and carryout a detailed analysis of solutions to the problem. The aim is to develop the students' ability to conceptualize problems and design solutions. **540h (P); C**

H. Graduation Requirements

Ph.D. candidates must register for all the core courses and a thesis. A candidate must have fulfilled the following conditions to be awarded the Ph.D. Quantity Surveying degree:

Core Courses	12 Credits
Thesis	12 Credits
Total	**24** Credits

I. Summary

Core Courses: QTS 901(2), QTS 902(2), QTS 903 (2), QTS 904 (3), QTS 905 (3), QTS 999 (12)
24 Credits