Bayero University, Kano (BUK)

Earth and Environmental Sciences

Quantity Surveying

BSc Quantity Surveying

**30% ADDITION TO THE CCMAS COURSE STRUCTURE/SUMMARY**

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| --- | --- | --- | --- | --- | --- |
| **100 LEVEL** | | | | | |
| **Course Code** | **Course Title** | **Units** | **Status** | **LH** | **PH** |
| BUK-QTS105 | Graphics Communication I | 2 | C | 15 | 30 |
| BUK-QTS 106 | Graphics Communication II | 2 | C | 45 | 30 |
| BUK-QTS107 | Principles of Economics I | 2 | C | 30 | 15 |
| BUK-QTS 108 | Principles of Economics II | 2 | C | 30 | 15 |
| BUK-QTS109 | Introduction to the Built Environment | 2 | C | 30 | 15 |
| BUK-QTS 111 | Introduction to Sustainable Built Environment | 2 | C | 30 | 15 |
| Total: 12 | | | | | |

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| **200 LEVEL** | | | | | |
| **Course Code** | **Course Title** | **Units** | **Status** | **LH** | **PH** |
| EDSU-CEE 203 | Building Construction **&** Materials I | 2 | C | 30 | 45 |
| BUK-QTS207 | Building Construction & Materials II | 2 | C | 30 | 45 |
| BUK-QTS208 | Micro Economics | 3 | C | 30 | - |
| BUK-QTS209 | Macroeconomics | 3 | C | 30 | - |
| BUK-QTS210 | Introduction to Alternative Dispute Resolution Mechanisms | 2 | C | 30 | - |
| BUK-QTS211 | Building Services I | 2 | C | 30 | 45 |
| Total: 14 | | | | | |

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| **300 LEVEL** | | | | | |
| **Course Code** | **Course Title** | **Units** | **Status** | **LH** | **PH** |
| BUK-QTS 309 | Advanced Construction Technology I | 2 | C | 45 | - |
| BUK-QTS 310 | Advanced Construction Technology II | 2 | C | 30 | - |
| BUK-QTS 311 | Building Services II | 2 | C | 45 | - |
| BUK-QTS313 | Specification Writing | 2 | C | 30 | - |
| BUK-QTS 315 | **SWEP** | 2 | C | 30 | - |
| Total: 10 | | | | | |

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| **400 LEVEL** | | | | | |
| **Course Code** | **Course Title** | **Units** | **Status** | **LH** | **PH** |
| BUK-QTS 415 | Capital Projects Financing | 2 | C | 30 | - |
| Total: 2 | | | | | |

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| **500 LEVEL** | | | | | |
| **Course Code** | **Course Title** | **Units** | **Status** | **LH** | **PH** |
| BUK-QTS 513 | Advanced Research Methods | 2 | C | 30 | ~~-~~ |
| BUK-QTS 515 | Sustainable Public Procurement Management | 2 | C | 30 | - |
| BUK-QTS 516 | Human Resources Management | 2 | C | 30 | - |
| Total: 6 | | | | | |
| **Total units developed: 44** | | | | | |

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**BUK-QTS105: Graphics Communication I, (2 Units; Core; L = 15; P = 45)**

Senate-approved relevance**:**

Imparting knowledge of graphic communications to our students will produce graduates that are skilled and knowledgeable in the production of sketches/drawings, understanding and interpretation of building/engineering sketches/drawings, preparation of cost plans/approximate estimates that can be used for preparation of business case, feasibility/viability studies and budgetary proposals for developmental projects is in tandem with BUK’s mission of providing world class academic and professional training. Relevance of the course lies in the fact that the course produces highly skilled graduates that contribute to national development as envisaged by the University’s mission of providing high quality human resources for the development of community, the nation and humanity in general.

Overview**:**

Graphics Communication 1 introduces students to various processes involved in producing sketches and drawings. It is very essential in preparing students to be able to understand and interpret sketches and drawings for the purpose of preparing cost plan and approximate estimates.

The course is meant to educate the students on variousdrawing tools and materials as well as how to use them in the construction and creation of visual elements, simple visual images, sketches, perspective drawings of simple geometric forms, identification and drawing various forms of lettering, etc.

**Objectives: the objectives of the course are to**

1. Describe various drawing materials and tools;
2. Describe on how to construct/create visual elements in various media;
3. Explain various forms of lettering andgraphic presentation using various media;
4. Describe how toconstruct simple visual images using the principles of proportion, balance, harmony and contrast, pattern, movement and rhythm, style;
5. Conduct practical exercises of sketching for design development andproduction of perspective drawings of simple geometric forms;
6. Describe how tocreate 2 dimensional drawings of plan section and elevations from basic geometric forms
7. Explain perspective drawings of simple geometric forms;

**Learning Outcomes**

At the end of this course, the students should be able to:

1. Identify and use various draughting materials and instruments: paper cards, folios, sketch books; pencils (hard, soft and coloured), felt pens, technical pens, crayons; brushes and paints; dry transfer lettering, textures, tones and colours; rules, templates and compasses; drawing boards and drawing sets;
2. Identify and construct/create the following visual elements: points, lines, shapes, planes, forms, textures and colours; in various media to create various effects;
3. Construct simple visual images using the principles of proportion, balance, harmony and contrast, pattern, movement and rhythm, style;
4. Create 2 dimensional drawings of plan section and elevations from basic geometric forms;
5. Produce perspective drawings of simple geometric forms;
6. Identify and draw various forms of lettering; and
7. Compose renderings of simple objects in various media.

**Course Contents**

Drawing tools. Drawing materials. The representation of common views. Graphic presentation using various media. Sketching for design development. Descriptive geometry. Orthographic projections of simple and complex geometric solids. Isometric, Axonometric. Oblique and perspective views and lettering.

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**BUK-QTS 106: Graphics Communication II (2 Units C: LH 15; PH 45)**

Senate-approved relevance**:**

The high level training given to students through Graphics Communication II produces graduates highly skilled and knowledgeable in the production, understanding, interpreting and taking correct measurements from architectural drawings for the purpose of preparing accurate bills of quantities that usually contribute greatly to seamless delivery of developmental projects. The seamless delivery of the projects agrees with BUK’s mission of addressing Africa’s developmental challenges and producing high quality human resources for development of community, nation and humanity. Challenges arising from inaccurate bill of quantities were known to have negatively affected the delivery of many developmental projects.

Overview**:**

Understanding of and ability to interpret architectural drawings and take accurate measurements are vital to preparation of accurate bills of quantities by Quantity Surveyors. This course exposes students to various aspects of processes leading to and associated with production, understanding and interpretation of architectural drawings.

It also educates them on how to take measurements from architectural drawings made in different scales and how to create/interpret/measure floor plans, sections and elevations.

**Objectives: the objectives of the course are to-**

1. Describe how to represent building elements and materials in plans, elevations and sections;
2. Describe how to interpret architectural drawings;
3. Conduct practical exercises on how to produce architectural drawings of plans, sections and elevations;
4. Explain on how to create basic floor plans, sections and elevations;
5. Identify scales and properly drawn-out design- floor plans, sections elevations;
6. Construct orthogonal projections of plans;
7. Expose students to creation of axonometric and perspective views using advanced techniques in perspective drawings;
8. Describe methods of construction and preparation of shades and shadows; as well as preparation of rendered presentation drawings using lines, tones and colour.

**Learning Outcomes**

At the end of this course, the student should be able to:

1. Represent building elements and materials;
2. Interpret building graphics convections on architectural drawings;
3. Reproduce architectural drawings of plans, sections and elevations;
4. Create basic floor plans, sections and elevations;
5. Identify and use scales and properly drawn-out design- floor plans, sections elevations;
6. Construct orthogonal projections of plans;
7. Create axonometric and perspective views using advanced techniques in perspective drawings;
8. Construct and prepare shades and shadows; and
9. Prepare rendered presentation drawings using lines, tones and colour.

**Course Contents**

Uses of graphics in architecture. Graphic thinking and building representation. Representation of building elements and materials. Representations of building elements and materials in plans. Representations of building elements and materials in elevations and sections. Projection techniques for shade and shadow construction. 3-Dimensional drawings of building exteriors. 3-Dimensional drawings of building interiors. Oblique drawings. Isometric drawings. Axonometric drawings. Perspective drawings and Rendering.

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**BUK-QTS107: Principles of Economics I**   **(2 Units C: LH 30)**

Senate-approved relevance**:**

Training of quantity surveying in economics will, in line with the University’s mission of providing high quality academic and professional training, produce graduates with clear understanding of basic economic principles and appreciation of essential determinants of market prices and their related drivers. Classical economic theories on demand and supply and application of fundamentals of economic principles learnt from this course are expected to guide graduates in taking informed decisions on the derivatives of cost as they affect initiation and delivery of construction products within and outside Nigerian. The will make the graduates relevant in the construction of economically viable development projects that will assist in human, community and national development as envisaged in BUK’s mission.

Overview**:**

This course covers natures of economic science, basic problem of scarcity and choice as well as basic theories of demand and supply. It also encompasses elasticity and its applications as well as factors of production and market structure.

The course will expose student to basic economic concepts and how they our day to day activities.

**Objectives: the objectives of the course are to:**

1. Describe basic economics concepts including scarcity, choice and scale of preference;
2. Elucidate basic laws of demand and supply;
3. Explain elasticity of demand and its applications,
4. Identify factors of production and market structure
5. Describe short and long run production functions;

**Learning Outcomes**

At the end of the course, the students should be able to:

* + - 1. Identify the basic concepts in economics including scarcity, choice and scale of preference; basic laws of demand and supply;
      2. Explain the nature of elasticity and its applications, as well as short and long run production functions;
      3. Discuss pricing of factors of production and market structure consisting of perfect competitive market and imperfect competitive markets.
      4. To identify the firms and production functions; and
      5. Explain the market structure.

**Course Contents**

An introduction to the nature of economic science and its basic problem of scarcity and choice. The methodology of economics and major areas of specialization. Historical development of ideas from the classical, neoclassical, utilitarian and welfare economists. Major findings in the various areas of specialization and elementary principles of microeconomics, as well as partial equilibrium analysis. Demand and Supply; and their laws. Determinants and types in statement and graphical format. The firms and production functions, as well as market structure.

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**BUK-QTS 108: Principles of Economics II (2 Units C: LH 30)**

Senate-approved relevance**:**

This is a continuation of Principles of Economics l and has the same relevance. It agrees with BUK’s mission and vision in the same way with it**.**

Overview**:**The basic principles of economics are essential concepts that underpin rational thinking on the prices of goods and services in an economy. Essentials of any valid assumption in the determination of value for products and services across all sectors of the economy. This is particularly the construction and allied industries in Nigeria.

The course will groom students on economic theories and their practical applications, especially on investment decisions and projects. The elementary definitions of supply and demand are expanded to provide clarity on general economic principles. The essentials of Economics are explained to expose students to preliminary issues in economics and their relationship to market prices of goods and services as they influence projects directly and indirectly.

**Objectives:**

The objectives of the course are to:

1. Describe basic concept of national income accounting;
2. Examine circular flow of income, withdrawals and injections;
3. Explain aggregate supply, unemployment and inflation;
4. Explain consumption, savings, investment, and
5. Describe government’s revenue and expenditure

**Learning Outcomes**

At the end of the course, the students should be able to:

1. Understand basic concept of functions, index numbers and dependent and independent variables in functions, as well as national income accounting;
2. Have knowledge on circular flow of income with simple two-sector model, and
3. learn elementary issues on consumption, savings, investment, and, government’s revenue, expenditure and roles of domestic money and foreign exchange;
4. learn about aggregate supply, unemployment and inflation;
5. Identify basic terminology in external economy.

**Course Contents**

Treatment of Functions, Index numbers, variables and functional relationships. Basic concept of national income accounting. The circular flow of income, withdrawals and injections. National Income determination and analysis. Introduction to consumption, savings and investments. Elementary understanding of government activities: taxation and government expenditure; money and the banking system. Aggregate supply, unemployment and inflation. The basic terminology in external economy such as exchange rates, balance of payment and global interdependence.

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**BUK-QTS109: Introduction to the Built Environment (2 Units C: LH30)**

Senate-approved relevance**:**

Producing high quality quantity surveying graduates that are knowledgeable and skilled in what constitutes the built environment, various activities undertaken within the environment and how the activities impact the socio – economic development of Nigeria and the entire world aligns with the BUK’s mission of providing high quality academic and professional training that will assist in addressing developmental challenges.

Overview**:**

The course will expose students to understanding what built environment encompasses, major activities within the environment as well as major stakeholders therein. Importance of the environment and impact of activities undertaken within the environment on socio economic development of human, communities and nation’s development will also be covered by the course.

**Objectives:** The objectives of the course are to:

1. Describe Built Environment and its various components/constituents;
2. Identify various stakeholders in the Built Environment
3. Describe various activities undertaken in the Built Environment.
4. Discuss the economic production systems and the factors influencing them;
5. Explain how to measure urban environmental quality;
6. Identify factors responsible for promoting/degrading the quality of the environment; and
7. Identify index of measuring urban quality.

**Learning Outcomes**

At the end of this course, students should be able to:

1. Explain the nature of built environment;
2. Discuss the economic production systems and the factors influencing them;
3. Explain how to measure urban environmental quality;
4. Identify factors responsible for promoting/degrading the quality of the environment; and
5. Identify index of measuring urban quality.

**Course Contents**

This course introduces the students to the concept of built environment, which arises through the development activities of the human person. Students would be informed about the number and quality of the world’s people and the conditions of their cities, farms, factories, roads and how to grow at the expense of the natural environment and impact on the environment as a whole. The course will also examine the economic production systems and the factors influencing them as well as how they promote or degrade the quality of the environment, urban utilities, and index of measuring urban quality.

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**BUK-QTS 111: Introduction to Sustainable Built Environment (2 Units C: LH 30)**

Senate-approved relevance**:**

Training of high-quality graduates who are highly skilled and knowledgeable in the values and societal importance of the built environment, and the influence on a sustainable development in the arid and semi-arid areas of Nigeria are in agreement with BUK’s mission of addressing African developmental challenges through providing high quality academic and professional training in quantity surveying. Relevance is seen in the participation of BUK graduates in using environmental impact assessments as a tool for design, construction and management of a sustainable built environment and development of techniques for sustainable infrastructure development and expansion.

Overview**:**

The course highlights the importance of preparing quantity surveying students with the knowledge and skills on how to design and construct infrastructural facilities for sustainable growth and development, exposes them to various climate changes and their influence on the built environment.

Students will be taught on usefulness of environmental impact assessments as a tool for design, construction and management of a sustainable built environment. Students will learn how to achieve sustainable development goals (SDGs) particularly those related to sustainable communities/cities and climate action issues.

**Objectives:**

The objectives of the course are to:

1. Describe principles of sustainable environment in design and construction;
2. Identify concepts associated with sustainable built environment management practices;
3. Describe various forms of sustainable infrastructure facilities;
4. Explain relationship between infrastructure and sustainable development
5. explain values and societal importance of built environment, and its influence on a sustainable development;
6. Identify sustainable regulations and standards in design and construction;
7. Conduct practical exercise on simple environmental assessment;
8. Discuss climate change and its influences on built environment; and
9. Explain usefulness of environmental impact assessments as a tool for design, construction and management of a sustainable built environment.

**Learning Outcomes**

At the end of this course, the students should be able to:

1. Define sustainability, and sustainable built environment;
2. Identify and explain associated concepts with sustainable built form;
3. Describe how what sustainable infrastructure is;
4. Demonstrate an understanding of values and societal importance of the built environment, and the influence on a sustainable development;
5. Conduct a simple environmental assessment;
6. Define climate change and discuss how it influences the built environment; and
7. Demonstrate the usefulness of environmental impact assessments as a tool for design, construction and management of a sustainable built environment.

**Course Contents**

Definition of sustainability. Definition of sustainable environment. Definitions of concepts associated with sustainability e.g., climate change. The built environment and sustainable built environment. Sustainable infrastructure (buildings, structures, plants and networks for communication and transport, water and wastewater treatment, production and distribution of energy). Relations between infrastructure and sustainable development. Sustainable regulations and standards. Indicators of sustainability. Consequences of climate change on the built environment. Vulnerability and safety of infrastructure. Materials and technology for construction and management. Service life and life cycle assessments.

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**EDSU-CEE 203: Building Construction and Materials I (2 Units C: LH 30)**

Senate-approved relevance**:**

Training of high-quality graduates who are highly skilled and knowledgeable in building construction techniques and choice of materials to be used in constructing buildings in the arid and semi-arid areas of Nigeria are in agreement with BUK’s mission of providing world class academic and professional training. Relevance of the course lies in the fact that the highly skilled graduates of the course will contribute to national development through constructing high quality building projects as envisaged by the University’s mission of providing high quality human resources for the development of community, the nation and humanity in general.

Overview**:**

Building construction and choice of materials are a vital approach used in mitigating structural building failure, particularly in northern Nigeria where structural defects and poor maintenance is on the increase on building projects. This highlights the importance of preparing students in building construction techniques and choice of materials with the knowledge and skills on how the three most important elements (design, construction, and materials) used for building project. This course is designed to expose students to various construction methods and choice of materials for building projects and to educate them on building construction best practice. The objectives of the course, learning outcomes, and contents are provided to address this need.

**Objectives:**

The objectives of the course are to:

1. Describe basic building construction techniques;
2. Explain site selection, influence of site selection on design and choice of construction method;
3. Describe simple site investigation procedures for building works;
4. Describe operational principles of setting out of buildings, site Clearance and earthworks;
5. Identify the treatments of excavated surfaces, fillings etc;
6. Describe various types of building materials e.g. timber, stones, bricks and cement blocks, concrete and reinforced concrete, mortar, etc.;

**Learning Outcomes**

At the end of the course, the students should be able to:

1. Understand the basic building construction techniques and materials;
2. explain the influence of site selection on design and choice of construction method;
3. Demonstrate simple site investigation procedures;
4. Understanding setting out of buildings; Site Clearance; and Earthworks;
5. Explain the various types of building materials and their functions.

**Course Content**

General introduction to basic building construction techniques and materials involving a study of the following: Site selection and Investigation (Selection criteria e.g. aspect, prospect, elevation etc; Influence of site selection on design and choice of construction method; Simple site investigation procedures); Setting out of buildings; Site Clearance; Earthworks (excavations, timbering and other types of supports, treatments of excavated surfaces, fillings etc); Building Materials include timber, stones, brick and cement blocks, concrete and reinforced concrete, mortar and rendering.

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**BUK-QTS207:** **Building Construction and Materials II**

Senate-approved relevance**:**

This is a continuation of BUK-QTS 207: Building Construction and Materials I aimed at producinghigh-quality graduates who are highly skilled and knowledgeable in building construction techniques and materials in line with University’s mission of producing high quality manpower that could contribute to addressing National and African Development challenges. Relevance of the course is as described under BUK-QTS 207: Building Construction and Materials I.

Overview**:**

Building construction and choice of materials are a vital approach used in mitigating structural building failure, particularly in northern Nigeria where structural defects and poor maintenance is on the increase on building projects. This highlights the importance of preparing students in building construction techniques and choice of materials with the knowledge and skills on how the three most important elements (concrete mixing, foundation, and materials) used for building project. This course is designed to expose students to concrete mixing and ratio of material components, types of foundations, and choice of materials for building projects and to educate them on building construction best practice. The objectives of the course, learning outcomes, and contents are provided to address this need.

**Objectives:**

The objectives of the course are to:

1. Explain basic procedure for mixing concrete and ratio of material components and their types;
2. Describe various foundations types and construction methods;
3. Explain ground floors, solid and suspended floors and consideration of various types of floors and materials used in their construction;
4. Identify other sub-structural works e.g. damp proof courses/membranes;
5. Describe various types of walls, their functional requiremen tand materials used in their construction;
6. Differentiate between load bearing and non-load bearing walls;
7. Explain various methods of cladding including use of constructional glass;
8. Identify types of brick wall and their suitability for construction works;
9. Explain asbestos cement products, asphalt and bituminous felts, glass, paints and their application in modern buildings.

**Learning Outcomes**

At the end of the course, the students should be able to:

1. Understand the basic procedure for mixing concrete and their types;
2. Explain the ratio of material components in concrete
3. Understand the types of foundation and walls in foundations;
4. Demonstrate simple strip foundation design and ground floors;
5. Discuss the types of walls and their functional requirement;
6. Distinction between structural internal walls and partitions;
7. Understand the functions of partition walls, types and materials used;
8. Explain the types of brick wall and their suitability to construction to construction works;
9. Understand asbestos cement products, asphalt and bituminous felts, glass, paints and their application in modern buildings.

**Course Contents**

Concrete types/mixes and mixing procedures; ratio of material components in concrete; choice of foundations types; Walls in foundations (brickwork, block-work, concrete and masonry); Simple Strip foundation design with illustrative examples); Ground Floors (solid and suspended floors; consideration of various types and materials used; effectiveness in fire resistance etc); Other sub-structural works e.g. Damp proof courses/membranes; Wall (Functional requirement, Types of wall, types of bond etc., Definition and composition of walls; Function of walls; Factors influencing design; Materials for wall components; Pointing, Jointing and Bedding of walls. Load bearing walls versus non-load bearing walls. Distinction between structural internal walls and partitions. Functions of partitions, types and materials of fixed partitions, demountable partitions, ventilation and lighting through partitions, thermal and sound insulation. External walls with their copings. Methods of cladding including the use of constructional glass. Brick walling (and types of Bonding). Types of brick wall and their suitability to construction to construction works. Advanced study of building materials and their characteristics. Asbestos cement products, Asphalt and bituminous felts, glass, paints and their application in modern buildings.

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**BUK-QTS208: Microeconomics l (2 Units C: LH 30)**

Senate-approved relevance**:**

Training quantity surveying students in microeconomics will produce graduates that are highly skilled and knowledgeable in the subject (which is vital in dealing with the functioning of individual industries and the behaviour of individual economic decision-making units) is in agreement with BUK’s mission of providing world class academic and professional training. Relevance is seen in the ability of BUK Quantity Surveying graduates to contribute to socio-economic development of the nation based on the microeconomics knowledge they acquired from the University.

Overview**:**

Microeconomics is a vital approach dealing with the functioning of individual industries and the behaviour of individual economic decision-making units. This highlights the importance of preparing students in quantity surveying with the knowledge and skills on how the microeconomic techniques used for understanding the society.

This course is designed to expose students to basic microeconomic variables like individual and market demand, individual and market supply, income and substitution effects in consumption. The objectives of the course, learning outcomes, and contents are provided to address this need.

**Objectives:**

The objectives of the course are to:

1. Describe microeconomics and its basic variables;
2. Differentiate between microeconomics and macroeconomics;
3. Describe laws of individual and market demand and supply and their elasticity
4. Explain income and substitution effects in consumption; and
5. Examine theories of production and cost.

**Learning Outcomes**

At the end of the course, the students should be able to:

1. Discuss the division of economics into microeconomics and macroeconomics;
2. Define the laws of individual and market demand and supply and their elasticities; and
3. Explain the basic elements in microeconomics in terms of foundation subject matter of household consumer behaviour using indifference curves, elementary production and costs with isoquant and Iso-cost, treated in graphical form and simple mathematical capsules.

**Course Contents**

Introduction to microeconomics. The partial equilibrium analysis with respect to basic microeconomic variables like individual and market demand, individual and market supply. Shapes of the demand and supply curves. Price elasticity of demand. Arc and point elasticity of demand. Income and cross elasticities. Consumer behaviour: Cardinalist, Ordinalist using indifference curves, their graphical and mathematical presentation and Partial derivative. Consumer surplus. Income and substitution effects in consumption. Cobweb analysis. Government price control. The production functions. Introductory theories of production and cost: Short- and Long-run production with laws of diminishing returns or variable proportion, marginal rate of technical substitution, Isocost, returns to scale, expansion path and factor substitution. Graphical and mathematical treatments of these.

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**BUK-QTS209: Macroeconomics (2 Units C: LH 30)**

Senate-approved relevance**:**

Training of high-quality graduates highly skilled and knowledgeable in Macroeconomic concept with clear understanding of how economic indices affect operation of the construction industry in Nigeria and globally is in agreement with BUK’s mission of training high quality academic and professional graduates that could contribute to development of community, the nation and humanity in general.

Overview**:**

The course is design to help develop students understanding of Macroeconomic theory. It aim at preparing students with policy mix with which Macroeconomic disequilibrium could be tackled. The course is design to balance existing knowledge with new ideas and develop student’s critical thinking skills. It highlights the roles of macroeconomic thought in guiding economic policies.

It explains the concept of saving, consumption, investment, national income models, theory of money, macroeconomic policy models, theory of prices level, Gross Domestic Product (GDP) etc.

**Objectives: the objectives of the course are to:**

1. Describe what macroeconomics entails.
2. Explain distinction between macroeconomics and microeconomics
3. Describe concept of saving, consumption and investment
4. Identify national income models.
5. Explain theory of economic growth and development
6. Describe evolution of money-barter trade and counter trade overview.

**Learning Outcomes**

At the end of the course, the students should be able to:

1. examine elements of microeconomics which deal individual households, firms and market from elements of macroeconomics that is concerned with aggregates in terms of nature and scope;
2. Discuss economic models, general equilibrium and disequilibrium;
3. discuss national income models;
4. Identify the goals of macroeconomics; gross domestic product measurement and components; and
5. Explain the basic theories of consumption, savings and investments in economic science as well as their determinants.

**Course Contents**

Distinction between Microeconomics and Macroeconomics in the context of partial and general equilibrium. The goals of macroeconomics. Nature and Scope of Macroeconomics. Concept of National Income Accounting, Gross Domestic Product (GDP) and its components, its calculation and derivatives. Gross National Product, GDP deflator and its uses, cost of living; consumer price index and National Income with its derivatives. Consumption and Savings theories and their determinants. The Multiplier and the relations between APC, APS, MPC, MPS. Also, the theories of investment and its determinants, as well as introduction to government roles within the context of a 3- Sector model.

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**BUK-QTS210: Introduction to Alternative Dispute Resolution Mechanisms (2 Units C: LH 30**

Senate-approved relevance**:**

Training of high-quality graduates who are highly skilled and knowledgeable with clear understanding of methods of conflict resolution other than litigation being used in resolving conflicts in the construction industry in Nigeria and globally. This is in agreement with BUK’s mission of training high quality graduates that have a good understanding of national, regional and global construction environment. Relevance of the course can be seen in Quantity Surveying graduates’ contribution to resolution of issues that could jeopardize the success of many development projects without going to Courts.

Overview**:**

The course deals the study of the process of initiating alternative methods and procedures of resolving a civil or commercial dispute without resorting to litigation. Various methods of Alternative Dispute resolution (ADR) such as Arbitration, Mediation, Conciliation, Negotiation, and Adjudication would be thought to give the students a good understanding of the subject matter.

The merits and demerits of utilizing the Alternative Dispute Resolution (ADR) process over instituting litigation would be properly examined during the course of delivery and stages of arbitration proceedings would be adequately discussed including procedure for appointment of Arbitrators **Objectives: the objectives of the course are to:**

1. Describe what Alternative Dispute Resolutions entails
2. Explain need for resolution of disputes without going through litigation
3. Develop negotiation skills of students for effective conflict resolution
4. Describe strategies of ensuring satisfaction of all parties during ADR
5. Identify barriers that may hinder a successful ADR

**Learning Outcomes**

At the end of the course, the students should be able to:

1. Identify some methods of dispute resolution generally;
2. Explain the difference between litigation and alternative dispute resolution mechanism;
3. Explain the basic elements in various alternative dispute resolution mechanisms;
4. Discuss the strategies of ensuring satisfaction of all parties during ADR; and
5. Explain the barriers that may hinder a successful ADR.

**Course Contents**

Introduction to the concept of disputes in construction contracts. Importance of ADR, introduction to standard form of contracts, Disadvantages of Litigation and the justification for ADRs. Advantages and the disadvantages of Alternative dispute resolutions (ADR) in their various forms; Arbitration, Mediation, etc. Arbitration procedure as a quasi-judicial process; Appointment of an Arbitrator, quasi-judicial panel and the basic approach.

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**BUK-QTS211: Building Services I (2 Units; C) (LH 30)**

Senate-approved relevance**:**

Training of high quality graduates who are highly skilled and knowledgeable with clear understanding of how design and installation of Building Services are carried out. The training enables students to learn how basic and complex services such as electrical, plumbing, air conditioning and other services are carried in the course of building construction. This is in agreement with BUK’s mission of training high quality graduates that have a good understanding of various construction processes which will enable them to contribute to human, community and national development through participation in building developmental projects.

Overview**:**

The course introduces students to Mechanical and Electrical services in buildings. It entails theoretical and practical aspect of Electrical Installation services, Plumbing installation systems in buildings such as water supply system (Cold and Hot), Firefighting equipment installation and functions, water reticulation, drainage system etc.

**Objectives: the objectives of the course are to:**

1. Describe concept of Building Services
2. Explain various types of services required in a building
3. Explain installation procedure for the different service components identified
4. Explain the practical application of installation of service equipment; and
5. Identify techniques of firefighting installation process etc.

**Learning Outcomes**

At the end of this course, students should be able to:

1. Understanding electrical services, power, lightings and fittings
2. Identify building services; Water supply, reticulation and associated installations
3. Articulate basic structure and functionality of building services
4. Identify associated features of building services and their basic functions; and
5. Identify the firefighting installation techniques

**Course Content**

Electrical services, power, lightings and fittings. Plumbing systems in a building, especifically Cold and hot water installations – supply and distribution; Water reticulation; Disposal of wastes in buildings; and fire fighting Installations.

**BUK-QTS 309: Advanced Construction Technology I (2 Units; C) (LH 30)**

Senate-approved relevance**:**

Training of high quality graduates who are highly skilled and knowledgeable in construction technology and having clear understanding of construction techniques and methodology. This is in agreement with BUK’s mission of providing high quality academic and professional training to its graduates and providing high quality human resources for the development of community, the nation and humanity in general.

Overview**:**

The course deals with component used in building construction. It introduces the students to various types of openings in a building. It deals extensively with doors and windows types based on the opening system, security consideration and other accessories associated with doors and windows in a building. It highlights the different materials used for the fabrication of doors and windows. Ceiling coverings and their associated features were covered. It also introduces the student different partition types partitions and Curtain walls including the different types of materials for their construction.

**Objectives: the objectives of the course are to:**

1. Describe different types of Building components
2. Explain openings in Buildings
3. Describe Doors and Windows type including materials for their construction and the functional requirements in buildings
4. Identify various ceiling coverings and their associated features
5. Identify various types of partitions and curtain walls in buildings; and
6. Describe special flexible partition walls and curtain walls.

**Learning Outcomes**

At the end of this course, students should be able to:

1. describe basic forms of openings in a building and their associated features
2. identify types of openings in buildings, doors and windows
3. explain and recognize accessories associated with openings
4. describe basic problems associated with framed structures
5. identity types of ceiling coverings and their associated features
6. explain special walls flexible partitions and curtain walls.

**Course Contents**

Doors; Problems of openings in external and internal doors; Main entrance doors: Flush, match-hoarded, metal panel, steel, aluminum armored plate glass, etc. Balcony and terraced doors internal doors: types of materials. Detailed consideration of each of the foregoing and their varieties ironmongery and locks with handles. Door frames and linings. Sliding/swinging doors in detail; special doors (plane sliding and sliding folding). Opening systems. Industrial doors. Window functions, and space requirements; Types (According to materials) like timber, steel/aluminum, etc. types-like casements and others, with detailed considerations of sections and elevations, Forms of construction, Projected, swinging and sliding windows and their mechanisms of operation window frames, linings, hinges and locks. Windows in high rise building, with considerations of weather treatment and protection from solar & rain development of weathering details. Ceilings: Suspended and other types of ceilings Maintenance and Miscellaneous Works A Iterations, renovations and reconstruction works including shoring and underpinning activities; Internal and external alterations to existing buildings. Special arrangements fir alteration while the premises are occupied. Problems with frame structures. Other maintenance works. Special Walls Flexible partitions. Curtain walls. Storey-height preformed panels (including the jointing weather Proofing sealing and tolerance problems) and the likes in situ reinforced concrete walling with consequent expansion joints.

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**BUK-QTS 310: Advanced Construction Technology II (2 Units C: LH 30)**

Senate-approved relevance**:**

The high level training given to students in Advanced Construction Technology II which produces graduates highly skilled and knowledgeable in advanced construction techniques and methodologies is in tandem with BUK’ mission of providing high quality academic and professional training. Relevance of the course can been in the participation of BUK’s quantity surveying graduates in the construction of complex building and civil engineering structures that contribute to human, community and national development.

Overview**:**

The course covers various types of construction techniques; principles and application of thermal and sound insulations in buildings, identification of various types of fire resistant materials, their properties and how they impact buildings; explanation of fire resistant standards of various building components; floor wall and ceiling finishes; different types of roofs; industrialized building system; etc.  **Objectives: the objectives of the course are to:**

1. Describe concept and principles of Thermal and Sound insulations in buildings;
2. Identify basic fire resistant materials applicable to buildings;
3. Explain various types of floor, wall, and ceilings finishes and Roofs;
4. Explain materials and construction techniques for loose and fixed fittings in furnishings.
5. Describe industrialized building systems as alternative to traditional and conventional building construction

**Learning Outcomes**

At the end of this course, students should be able to:

1. Understand the concept and principles of Thermal and sound insulations in buildings;
2. Identify basic fire resistant materials and their properties for building construction;
3. Understand various types of finishes and their specifications in floor, wall, ceilings and Roofs; and
4. Understand materials, uses and construction techniques for loose and fixed fittings in furnishings.
5. Understand the concept of industrialized building systems as alternative to traditional and conventional building construction

**Course Contents ;**

Thermal and sound. Principles and applications of insulation on floors, walls, roofs, and other building features. Fire resistance (standards) of various building components Chimney breasts and other fire places in buildings. Concrete finishes other wall, floor and ceiling finishes. Functions of finishes, external and internal work, types and characteristics, selection of finish. Internal finishes to public and prestige areas, finishes in specialized buildings. Special Plants Hoists for materials and passengers. Tower cranes, climbing cranes. Scaffolding. Safety precautions for high rise buildings. Construction plants other than those for earthworks (e.g. concrete pumping machine. concrete mixer, etc) and Principles of pneumatic structures. Flat roofs - Types, materials, uses and construction techniques. Provision for services in buildings. Fittings (fixed and loose fittings): design of fittings as influenced by aesthetic and functional requirements, materials construction and finishing including ironmongery. Furnishings - furniture including shelving, cupboards arid wardrobes. Stair cases and ramps; Elevators and lifts; Industrialized building systems and the concept of modular coordination in construction.

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**BUK-QTS 311: Building Services II (2 Units C: LH 30)**

Senate-approved relevance**:**

Training of high quality graduates who are highly skilled and knowledgeable with clear understanding of how design and installation of more mechanical services are carried out. The training enables students to learn how installation of mechanical services such as plumbing, air conditioning, security installation in buildings, lift installation and other services are carried in the course of building construction. This is in agreement with BUK’s mission of training high quality graduates that have a good understanding of various construction processes that will enable them to contribute to human, community and national development through participation in building developmental projects.

Overview**:**

The course will cover all types of mechanical systems and their installations in buildings such as lift installation, air-conditioning, firefighting, etc.

The students will be exposed to interpretation of mechanical installation designs and how various types of mechanical installations in different types of buildings are undertaken.

**Objectives: the objectives of the course are to:**

1. Describes Mechanical installations in buildings;
2. Identify basic threats to ventilations in buildings;
3. Elucidate air conditioning and refrigeration systems
4. Explain basic principles of fire safety and firefighting and vertical transportation in buildings.
5. Describe concept of security installations and their related features in buildings

**Learning Outcomes**

At the end of this course, students should be able to:

1. Understand the concept and principles of Mechanical installations in buildings;
2. Identify basic threats to ventilations in buildings;
3. Understand concepts of air conditioning and refrigeration
4. Understand the basic principles of fire safety and firefighting and vertical transportation in buildings.
5. Understand the concept of security installations and their related features in contemporary times

**Course Contents**

Mechanical Systems in Building. It specifically treats Ventilation systems; Air conditioning and Refrigeration; Fire safety and fire-fighting; Transportation in Building or Mechanical Conveyors; Security Installations in buildings.

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**BUK-QTS313 Specification Writing (2 Units C: LH 30)**

Senate-approved relevance**:**

Quantity Surveying graduates trained in specification writing will be able to specify appropriate materials, equipment and human resources required to successfully execute a project that will contribute to human, community and national development as envisaged by BUK’s mission of training high quality academic and professional graduate that could in addressing Africa’s developmental challenges.

Overview**:**

The course will cover what specification stands for, its essence in construction project, how to carry out concise specification writing and how to read/interpret specifications

The students will learn the cost implication of specifications and how specification impact quality and completion period of building construction.  
**Objectives: the objectives of the course are to:**

1. Describe what specification writing entails:
2. Explain importance of specification in construction projects
3. Describe various forms of specification
4. Explain how to write concise specifications for different elements in construction
5. Carry out practical classes on specification writing

Explain how to write concise specifications for different elements in construction

**Learning Outcomes**

At the end of this course, students, through case study and practical approaches, should be able to:

1. Understand the meaning of specification in construction projects
2. Know the reason for detailed specification in construction projects
3. Know various forms of specification
4. Write concise specifications for different elements in construction
5. Read and interpret all forms of specifications writings

**Course Contents**

Art of specification writing, origin of specification writing, justification for specification writing, uses of specification, forms of specification; simple specification, detailed specification, patented specification etc. Professional indemnity and Collateral Warranty as they relate to specification in construction.

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**BUK-QTS 315: Students Work Experience Programme (SWEP)**

Senate-approved relevance**:**

Practical training given to quantity surveying students on basic construction processes/ procedures and use of basic construction tools and equipment during SWEP produces graduates that are highly skilled and knowledgeable in construction process in line with BUK’s mission of providing high quality academic and professional training that will enable its graduates to contribute to human, community and national development through participation in building developmental projects.

Overview**:**

This course will expose students to understanding how some construction processes are carried out practically and guiding them on how to carry out the processes. It will also enable them to know Workshop settings, how to use various tools and equipment and learn basic rules and regulations governing working in Laboratories and Workshops.

**Objectives:**

1. Describe the basic machines and workshop installations and their uses;
2. Explain the basic laboratory rules and regulations;
3. Discuss the basic operations of electrical and mechanical services;
4. Identify associated features of building services and their basic functions;
5. Explain workshop operation procedure, rules and safety regulations.

**Learning Outcomes**

At the end of this course, students should be able to:

1. identify basic machines and Workshop installations and their uses;
2. understand basic laboratory rules;
3. perform basic operations of electrical, mechanical equipment sub the laboratory;
4. Identify associated features of building services and their basic functions; and
5. Explain workshop operation procedure, rules and safety regulations.

**Course Contents**

This course is a practical course which requires students to stay in the school after their second semester 200 level and get involved in basic training in the handling of laboratory equipment and basic operations in concreting, plumbing, electrical fittings and installations and other Workshop tools for metal, wood and electrical electronics.

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**BUK-QTS 415 Capital Projects Financing**

**Senate-approved relevance:**

Training quantity surveying students on how to finance capital projects is in agreement with BUK’s mission of addressing Africa’s Developmental challenges as capital projects are major ways of providing infrastructural facilities and socio economic development projects. The high level academic and professional training given to the graduates will enable them to contribute towards addressing financing challenges usually associated with execution of capital projects and how to source funds for same.

**Overview:**

The course will cover capital projects, importance of capital projects, sources of funds for financing capital projects, types of funding available for capital projects, working capital and others issues related to capital projects financing.

The course will also discuss how different types of sources of financing impact cost of the project as well their socio-political impacts.

**Objectives: the objectives of the course are to:**

1. Explain capital project and its various forms
2. Describe project financing,
3. Explain various sources of financing of capital projects;
4. Describes what determines where to source capital project financing
5. Explain impact of financial and economic policies on funding of capital projects;
6. Explain multilateral funding organizations-Security;

**Learning Outcomes**

At the end of this course, students, through case study and practical approaches, should be able to:

1. Understanding the various sources of financing of capital projects;
2. Discusses the nexus of project characteristics and funding sources and strategies;
3. Demonstrating the impact of financial and economic reforms on funding of capital projects;
4. Explain the multilateral funding organizations-Security;
5. Demonstrating financial analysis, cost classification, budgeting, working capital investment analysis; and
6. Understanding construction company’s accounts, property and investment theory.

**Course Content**

Sources of financing of capital projects. The nexus of project characteristics and funding sources and strategies. Impact of financial and economic reforms on funding of capital projects. Multilateral funding organizations-Security, etc. PFI/PPP project financing, Partnering, and Joint venture. Financial analysis, cost classification, budgeting, working capital investment analysis, understanding construction company accounts, property and investment theory.

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**BUK-QTS 513: Advanced Research Methods**

**Senate-approved relevance:**

The training of high-quality graduates who are highly skilled in the design and cost analysis of construction projects, evaluation, planning and creative design abilities in various ways that can contribute to the development of a more satisfying life and environment for the benefit of mankind, in Nigeria and Africa is of great importance to BUK. This is necessary to produce a role model, self-reliant and excellent Quantity Surveyors with adequate technical skills, fundamental concepts relevant to latest development, entrepreneurial competences, a sense of public responsibility, communication skills and management skills to handle national and international issues in built-environment, research plays a vital role in equipping the students with critical thinking and analytical abilities for such immediate and future tasks.

**Overview:**

Research methods involve the collection, organizing, analyzing, and interpretation of data in order to make decisions. Research methods are the vital tools for robust data gathering, analysis, measurement system in the built-environment. This course will equip the students during their study and afterwards, in the aspect of scientific research work by applying methods in data gathering, testing and analysis for built-environment research survey, quality control, reliability analysis of infrastructures, probabilistic design of construction projects and formulation of predictive models etc. This helps in proper design, cost estimate, and ascertaining the integrity of construction projects cost, thus mitigating the incidence of high cost of construction cost in Nigeria.  **Objectives: the objectives of the course are to:**

1. Explain scientific research process;
2. Identify ingredients of scientific research work;
3. Explain basic segments of research work;
4. Describe literature review in built-environment;
5. Explain how to select area of interest in built-environment research;
6. Explain plagiarism and other associated avoidable crime in research; and
7. Conduct in a scientific enquiry with minimal supervision.

**Learning Outcomes**

At the end of this course, students should be able to:

1. Explain a research process;
2. Discuss the ingredients of research;
3. Demonstrate the basic segments of research;
4. Review literature in built-environment related fields;
5. Identify reputable platforms for built-environment research, especially university-based platforms;
6. Choose area of interest in built-environment research;
7. Avoid plagiarism and other associated avoidable ‘crimes’ in research; and
8. Engage in a scientific enquiry with minimal supervision.

**Course Contents**

Basic research process in built-environment. Theory development and their educational principles, contemporary issues in built-environment research. Methodologies; Quantitative method, Qualitative method, Mixed method research and their relevance and when to apply them, Analytical tools; Simple descriptive analysis of linear relationships, statistical analysis, Univariate analysis, multi-variate analysis, Regression models, multiple regression models. Developing interests in particular area of research. Keeping with contemporary issues as they affect the built-environment and the research community. Concept of plagiarism and its attendant consequences. Learning from previous researches in and outside the Department, Consultation skills, scheduling/planning the research method and sustaining cordiality with supervisors.

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**BUK-QTS 515: Sustainable Public Procurement Management**

**Senate-approved relevance:**

Training of high-quality graduates who are highly skilled and knowledgeable in Sustainable Public Procurement in Nigeria are in agreement with BUK’s mission to address African developmental challenges in producing Quantity Surveying graduates. Relevance is seen in Quantity Surveyors from BUK being able to promote sustainable development process in projects execution in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organisation, but also to society and the economy, whilst minimizing damage to the environment. Sustainable Public Procurement incorporates socially responsible public procurement and green public procurement to addresses the three pillars of Sustainable Development; namely the economic, social and environmental pillars to produce social, ethical and environmental outcomes, directly and indirectly to the entire society. This will help to use the government procurement financial resources most effectively in furtherance of its sustainable development strategy.

**Overview:**

Expenditure by MDAs on Public Procurement (PP) constitutes a substantial proportion of the Gross Domestic Product (GDP) of Nigeria. The rapid increase in Nigerian population coupled with the increase in demand for natural resources started to exert substantial pressure on the environment which led to a gradually deteriorating state of our environment and quick progression towards climate change. Sustainable Consumption and Production (known as SCP) is about doing more and better with less. It is also about decoupling economic growth from environmental degradation, increasing resource efficiency and promoting sustainable lifestyles.

Sustainable Public Procurement (SPP) is a critical tool to be used by governments in order to promote Sustainable Development. It is a process whereby organizations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organisation, but also to society and the economy, whilst minimizing damage to the environment. Sustainable Public Procurement (SPP) incorporates socially responsible public procurement and green public procurement to addresses the three pillars of Sustainable Development; namely the Economic, Social and Environmental pillars. Through the use of SPP, governments can:

* regulate markets in line with its sustainable development (SD) strategy;
* participate in the market and set a role model;
* use its procurement financial resources most effectively in furtherance of its SD strategy;
* enable and encourage competitiveness/innovation;
* produce social, ethical and environmental outcomes, directly and indirectly to the entire society.

**Objectives: the objectives of the course are to:**

1. Describe concept of sustainable public procurement;
2. Explain SPP, Green and Socially Responsible Public Procurement;
3. Describe the impact of International Law on SPP;
4. Explain the drivers, enabling conditions, barriers and benefits of SPP implementation at national and organizational levels;
5. Identify the importance of SPP in contributing towards meeting the objectives of a country’s SDGs;
6. Identify bid evaluation criteria incorporating SPP considerations and methods of bid evaluation in SPP.

**Learning Outcomes**

At the end of this course, students should be able to:

1. Explain the Sustainable Public Procurement management;
2. Demonstrate the Concept of Sustainable Development and the UN Sustainable Development Goals;
3. Defining Sustainable Public Procurement, Green and Socially Responsible Public Procurement;
4. Identify the Impact of International Law on Sustainable Public Procurement (SPP);
5. Understanding drivers, enabling conditions, barriers and benefits of SPP implementation at national and organizational levels;
6. Discussing the importance of SPP in contributing towards meeting the objectives of a country’s SDGs;
7. Integration of SPP considerations in the procurement process; and
8. Understanding bid evaluation criteria incorporating SPP considerations and Methods of bid evaluation in SPP.

**Course Contents**

Introduction to Sustainable Public Procurement and how it is linked to Sustainable Development. The Concept of Sustainable Development and the UN Sustainable Development Goals. Definition of Sustainable Public Procurement, Green and Socially Responsible Public Procurement. The Impact of International Law on Sustainable Public Procurement (SPP). Drivers, Barriers and Benefits of SPP implementation at national and organizational levels. Importance of SPP in contributing towards meeting the objectives of a country’s SDGs. Drivers and Enabling Conditions that support effective implementation of SPP. Barriers confronting SPP implementation. Benefits of SPP and Examples of Criteria used in recognizing public procurement operations as eligible for classification as SPP. Integration of SPP considerations in the procurement process: Bidders’ Qualifications and Bid Evaluation Criteria steps. Bid Evaluation Criteria incorporating SPP considerations. Methods of Bid Evaluation in SPP.

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**BUK-QTS 516: Human Resources Management**

**Senate-approved relevance:**

Develop managerial skills, training high quality graduates who are highly skilled and knowledgeable in human resource management in various ways that can contribute to the development of a more satisfying life and environment for the benefit of mankind. This is in accordance with the vision and mission of BUK.This is necessary to produce a role model, self-reliant and excellence quantity surveyors with adequate managerial skills, fundamental concepts relevant to latest development, entrepreneurial competences, a sense of public responsibility, communication skills and management skills to handle national and international issues in quantity surveying profession.

**Overview:**

This course deals with the industrial relations i.e. employer and employees relation in any industry or organization and attempt to make industrial relations more health in an effort to have better relations. It is seen as a cooperation between employer and employee, it is done with discipline, done in organized manner and not casual and it gives satisfaction of needs. Industry means any systematic activity carried on by cooperation between an employer and his employee whether such workmen are employed by such employer directly or through any agency including a contractor for the production supply or distribution of goods or sources with an overview to satisfy human want.

**Objectives: the objectives of the course are to:**

1. Describe organizations and their culture
2. Explain the employees motivation and human relations;
3. Identify manpower planning, recruitment, selection and engagement of personnel;
4. explain safety, health and welfare of employees;
5. Describe contract of employment in Nigeria;
6. Explain duties of employer and employees in contract of employment;
7. Explain government roles in resolving dispute between employer and employees;
8. Identify nature and scope of collective bargain; and
9. Describe the roles of trade union on industrial management in Nigeria.

**Learning Outcomes**

At the end of this course, students should be able to:

1. Understanding organizations and their culture;
2. Discussing employees motivation and human relations;
3. Identify manpower planning, recruitment, selection and engagement of personnel;
4. Explaining safety, health and welfare of employees; and
5. Understanding the contract of employment in Nigeria.

**Course Contents**

Organizations and Organizational Culture, Employee motivation and human relations, Manpower Planning, recruitment, selection and engagement of personnel. Education and training, safety, health and welfare, industrial relations/contract of employment in Nigeria. Employment of special class of workers (employment of women and infants). Duties of employer and employees. Trade unions on industrial management in Nigeria. Nature and scope of collective bargaining. Roles of government and other bodies in grievance resolution.