

**ISAAC JASPER BORO COLLEGE OF EDUCATION  
SCHOOL OF SCIENCE  
DEPARTMENT OF INTEGRATED SCIENCE  
COURSE ALLICATION FOR 2023/2024 SESSION**

**YEAR ONE FIRST SEMESTER COURSE ALLOCATION**

<b>S/N</b>	<b>COURSE TITLE</b>	<b>COURSE CODE</b>	<b>LECTURER</b>	<b>PHONE NO.</b>	<b>COURSE CONTENT</b>	<b>CREDIT UNIT</b>	<b>STATUS</b>
1	MATHS FOR SCIENCE II	ISC III	MATHS DEPT	0812 129 5396	<ul style="list-style-type: none"> <li>• Calculate basic arithmetic functions.</li> <li>• Simple algebraic equations</li> <li>• Evaluations of numerical expressions.</li> <li>• Positive and negative indices and square roots.</li> </ul>	1	C
2	SCIENCE EDUCATION I	ISC 112	DR MRS BEIDFET I. KONYEFA	0803 201 2053	<ul style="list-style-type: none"> <li>• History and philosophy of Integrated Science.</li> <li>• Traditional African ideas about learning.</li> <li>• Behaviorism.</li> <li>• Constructivism.</li> <li>• Skinner's behavioral ideas.</li> <li>• The Bloom taxonomy of educational objectives.</li> <li>• Gagne's ideas.</li> <li>• Piagetian Stage theory.</li> <li>• Brunner's ideas.</li> <li>• Ausubel and the alternative conceptions movement.</li> <li>• Application of education theories to science teaching.</li> <li>• Stages of cognitive development and the cognitive demands of science curricula.</li> </ul>	1	C

					<ul style="list-style-type: none"> <li>• Children’s alternative conceptions.</li> <li>• Scientific concepts.</li> <li>• Science Education research from Nigeria.</li> <li>• Finding out what children already think and know.</li> <li>• Presenting counter demonstrations and arguments, generating cognitive conflict.</li> <li>• Drawing arguments and evidence together.</li> <li>• Maximizing children's involvement in their own learning.</li> <li>• Using context to explain concepts.</li> <li>• Use of analogies (similes and metaphors)</li> </ul>		
3	INTRODUCTION TO SCIENTIFIC METHOD I	ISC113	MR AYAWARI ILAYE LAMU	0703 755 2316	<ul style="list-style-type: none"> <li>• Senses and related organs</li> <li>• Observations</li> <li>• Microscope, Hand lens, Telescope, Glasses, Hearing Aids</li> <li>• Measurement of length, area, volume, mass, temperature, and time.</li> <li>• Classification of objects (colour, shape, behaviour and other observed criteria)</li> <li>• Classification of living things (plants and animals; vertebrates and invertebrates; groups of vertebrates, flowering and non-flowering plants)</li> <li>• Ethics of science and developing scientific attitudes</li> <li>• Products of scientific investigations/implications</li> <li>• Science process skills</li> </ul>	1	C

4	COMPONENTS OF THE ENVIRONMENT	ISC 114	MRS CHINYERE PREFA	0813 908 5280	<ul style="list-style-type: none"> <li>• Air pollution, sources and consequences of air pollution.</li> <li>• One method for determining the proportion of oxygen in the atmosphere</li> <li>• Qualitative and Quantitative composition of air</li> <li>• Physical properties and uses of oxygen and carbon dioxide and their importance to living things.</li> <li>• Sources of water and contaminating agents</li> <li>• Importance of water to Life</li> <li>• Nature of water as a solvent</li> <li>• Importance of oxygen dissolved in water.</li> <li>• Compare rural and urban water supplies</li> <li>• Methods of water purification</li> <li>• Water cycle</li> <li>• Elements of weather</li> <li>• Simple weather recording instruments</li> <li>• Organisms that live in soils in our environment.</li> <li>• Mineral component of the soil</li> <li>• Soil Formation</li> <li>• Types of soil</li> <li>• Importance of soil</li> <li>• Soil erosion and the relevant preventive measures</li> <li>• Bush Burning</li> <li>• Drainage patterns, causes, prevention and effect</li> </ul>	1	C

5	NATURE OF MATTER I	ISC 115	MR. Ebiye Edipre	0906 891 2274	<ul style="list-style-type: none"> <li>• States of Matter</li> <li>• General physical properties of solids, liquids and gases.</li> <li>• Boyle's law, Charles' law. Ideal gas law</li> <li>• Vapour pressure</li> <li>• Macromolecular structures of NaCl as an ionic solid and carbon (diamond)</li> <li>• Classification of matter</li> <li>• Classification of common elements</li> <li>• Elements, compounds and mixture.</li> <li>• Structure of the atom</li> <li>• Concepts of atomic number and mass number</li> <li>• Isotopes</li> <li>• Oxidation/Reduction (properties along period and group)</li> <li>• Ionic and covalent compounds</li> </ul>	1	C

### YEAR TWO FIRST SEMESTER COURSE ALLOCATION

S/N	COURSE TITLE	COURSE CODE	LECTURER	PHONE NO.	COURSE CONTENT	CREDIT UNIT	STATUS
1	COMPONENTS OF ENVIRONMENT II	ISC 211	MRS ENAREGHA	07034867531	<ul style="list-style-type: none"> <li>• Characteristics and Classification of Living and Non-Living Things</li> <li>• Classification of growth (temporary and permanent changes)</li> <li>• Plant and Animal Cell</li> <li>• Chromosomes and Genes</li> <li>• Bacteria and viruses</li> </ul>	1	C

					<ul style="list-style-type: none"> <li>• Importance of bacteria</li> <li>• Diseases caused by Viruses and bacteria</li> <li>• Fungi and state their characteristics.</li> <li>• Types of fungi.</li> <li>• Occurrence of fungi, their use as food</li> </ul>		
2	SCIENCE EDUCATION II	ISC 212	DR MRS BRIDGET I. KONYEFA	0803 201 2053	<ul style="list-style-type: none"> <li>• Time</li> <li>• Lesson Planning.</li> <li>• Resources</li> <li>• Activities.</li> <li>• Grouping of pupils for activities.</li> <li>• Traditional role of the teacher.</li> <li>• Developing or changing subject content.</li> <li>• School as an encouraging or a restricting environment.</li> <li>• Finding out what children already think and know.</li> <li>• Presenting arguments and cognitive conflict.</li> <li>• Drawing arguments and evidence together.</li> <li>• Maximizing children's involvement in their own learning.</li> <li>• Using context to explain concepts.</li> <li>• Use of analogies (similes and metaphors)</li> </ul>	1	C
3	MAN AND THE ENVIRONMENT I	ISC 213	DR STEPHEN P. DAWORIYE	08037085865	<ul style="list-style-type: none"> <li>• Human Beings as Higher Animals</li> <li>• Characteristics of primates</li> <li>• Application of basic intelligence skills</li> <li>• Introductory Ecology</li> <li>• Ecosystem (food chains, food webs)</li> </ul>	1	C

					<ul style="list-style-type: none"> <li>• Carbon and Nitrogen cycles.</li> <li>• Importance of fertilizers in food production</li> <li>• Traditional and modern methods of food preservation</li> <li>• Associations (parasitism, symbiosis and commensalisms)</li> <li>• The role of Man in resource development</li> <li>• Resources exploitation by man (deforestation, desertification mining etc. )</li> <li>• Environmental pollution (causes, consequences and control.</li> <li>• Ozone layer</li> <li>• Conservation and recycling of natural resources</li> <li>• Population and Effects of urbanization on the environment.</li> <li>• Field trip</li> </ul>		
4	LAB MANAGEMENT AND SAFETY I	ISC 214	MR MOSES EGBERE/OKEPGHENE OGHORI	0703 755 2316 & 07064532105	<ul style="list-style-type: none"> <li>• Laboratory Management</li> <li>• Laboratory rules</li> <li>• Laboratory equipment/apparatus</li> <li>• Storage and management procedures</li> <li>• Microscope</li> <li>• Balances (parts, manipulation and types )</li> <li>• Preparation of solution - Molar and percentages.</li> <li>• Indicators - pH ranges.</li> <li>• Uses of burettes and pipettes and their maintenance</li> </ul>	1	C

					<ul style="list-style-type: none"> <li>• Bunsen burners, flame parts and adjustments.</li> <li>• Glassblowing.</li> <li>• Accumulator, circuit connection - series and parallel.</li> <li>• First aids for Emergency</li> </ul>		
5	WORKSHOP PRACTICES, SKILL ACQUISITION AND ICT	ISC 215	MR AYAWAR ILAYE LAMI, USMAN JONAH	0703 755 2316 _ 07069868467	<ul style="list-style-type: none"> <li>• Improvisation (definition and its advantages.)</li> <li>• Paperwork in modelling</li> <li>• Glass work Glass-cutting, construction of aquarium</li> <li>• Preparation of skeletons and herbariums.</li> <li>• Elements of painting</li> <li>• Metal workshop (Soldering, welding and Engraving techniques)</li> <li>• ICT (meaning component and importance)</li> <li>• Instruments used in electrical workshop.</li> <li>• Simple circuit connection and types</li> <li>• Fuses and uses</li> <li>• Elementary Electronics</li> <li>• Mechanism of radio and tape recorder and T.V functions</li> <li>• Wavelengths and channels</li> <li>• Batteries – types, functions and maintenance</li> </ul> <p>Meaning and reasons for skill acquisition</p>	1	C

### YEAR THREE FIRST SEMESTER COURSE ALLOCATION

S/N	COURSE TITLE	COURSE CODE	LECTURER	PHONE NO.
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1	TEACHING PRACTICE	EDU 311		
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### YEAR ONE SECOND SEMESTER COURSE ALLOCATION

S/N	COURSE TITLE	COURSE CODE	LECTURER	PHONE NO.	COURSE CONTENT	CREDIT UNIT	STATUS
1	MATHS FOR SCIENCE	ISC 121	DR OBELE REALMAN	0803 945 8691	<ul style="list-style-type: none"> <li>• Graphs and Forms</li> <li>• Variables and Scales for graph plotting.</li> <li>• Slope and intercept on a linear graph;</li> <li>• Standard linear form <math>y = m x + c</math></li> <li>• Forms of common plots such as <math>\frac{1}{x}</math>, <math>x^2</math>, <math>\frac{1}{x^2}</math>, <math>\sin x</math>, <math>\cos x</math>, <math>e^{mx}</math>, <math>\sin x</math>, <math>\cos x</math>.</li> <li>• Slope of a tangent to a curve as a means of obtaining gradient.</li> <li>• Geometry and Trigonometry</li> <li>• <math>\frac{d}{dx}</math> For a rate of change with respect to variable <math>x</math>.</li> <li>• Area below a curve and relate this to integration</li> <li>• Histogram plots,</li> <li>• Simple harmonic motion</li> </ul>	1	C
2	I PROCESSES OF LIFE	SC122	MRS CHUNTERE PREFA	<b>0813 908 5280</b>	<ul style="list-style-type: none"> <li>• Photosynthesis</li> <li>• Test leaves and storage organs for starch.</li> <li>• Combustion and respiration.</li> <li>• Oxidation and reduction</li> <li>• Respiration</li> </ul>	1	C



					<ul style="list-style-type: none"> <li>• Energy change during the burning of food</li> <li>• Respiratory System and problems connected to breathing</li> <li>• Nutrition (classes, sources and importance of nutrients)</li> <li>• Interrelationship between population, personal health and nutrition</li> <li>• Digestive system</li> <li>• Absorption of food and simple food test.</li> <li>• Food storage</li> <li>• Circulatory system</li> <li>• Excretory system</li> <li>• Nervous system</li> <li>• Skeletal system</li> </ul>		
3	MAN AND ENERGY I	ISC 123	MR AYAWARI ILAYE LAMU	0703 755 2316	<ul style="list-style-type: none"> <li>• Force,</li> <li>• Work done</li> <li>• Energy (Forms of Energy)</li> <li>• Transfer of energy</li> <li>• Renewable and non-renewable energy.</li> <li>• Conservation of Energy</li> <li>• Temperature</li> <li>• Celsius and Kelvin temperature scales- and the concept of absolute zero of temperature.</li> <li>• Heat</li> <li>• Heat transfer by conduction, convection and radiation.</li> <li>• Light (propagation, shadows and eclipse)</li> <li>• Laws of reflection.</li> <li>• Image formed by a plane mirror</li> <li>• Uses of convex and concave mirrors</li> <li>• Sound waves longitudinal waves</li> </ul>	1	C

					<ul style="list-style-type: none"> <li>• Velocity of sound in air</li> <li>• Factors which cause changes in the frequency of sounds</li> <li>• Pitch of a sound</li> </ul>		

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1	NATURE OF MATTER II	ISC 221	MR EBIYE EDIPRE	0906 891 2274	<ul style="list-style-type: none"> <li>• Atomic Structure</li> <li>• Periodic Table</li> <li>• Physical and Chemical Changes</li> <li>• Separation Techniques</li> <li>• Transition Elements and their Properties</li> <li>• Reactions of Some Ions</li> <li>• Volumetric Analysis</li> </ul>	1	C
2	SCIENCE EDUCATION II	ISC 222	DR. MRS BRIDGET I KONYEFA	0803 201 2053	<ul style="list-style-type: none"> <li>• Developing a course</li> <li>• Developing a lesson</li> <li>• Mixed ability groups</li> <li>• Special educational needs (care)</li> <li>• Board work</li> <li>• Demonstration method</li> <li>• Practical activities</li> <li>• Discussions method</li> <li>• Teaching/learning aids.</li> <li>• Purposes of assessment</li> <li>• Different modes of writing questions</li> </ul>	1	C

					<ul style="list-style-type: none"> <li>• Preparing marking schemes</li> <li>• Evaluation of classroom activities and end of course performance.</li> <li>• Micro-Teaching</li> </ul>		
3	DYNAMICS	ISC 223	MR AYAWARI ILAYE LAMJ	0703 755 2316	<ul style="list-style-type: none"> <li>• Speed</li> <li>• Acceleration</li> <li>• Speed/Time Graph for Linear Motion</li> <li>• Newton's Law of Motion</li> <li>• Gravitational Force</li> <li>• Concept and Purpose of Space Travels.</li> <li>• Satellite and Its uses in the Society</li> <li>• Momentum</li> <li>• Conservation of Linear Momentum.</li> <li>• Motion in a Circle</li> <li>• Simple Harmonic Motion</li> </ul>	1	C
4	RESEARCH METHOD	ISC 224	DR S. IZAH	0 704 042 3356	<ul style="list-style-type: none"> <li>• Research (Meaning, types and importance)</li> <li>• Identifying the topics</li> <li>• Topic selection</li> <li>• Literature Review</li> <li>• Construction of instruments</li> <li>• Data Analysis</li> <li>• Project reports</li> </ul>	1	C
5	CARBON COMPOUNDS	ISC 225	MR MOSES EGBERE	0915 645 2304	<ul style="list-style-type: none"> <li>• Introduction to Carbon Chemistry</li> <li>• Catenation Of Carbon</li> <li>• Aliphatic Hydrocarbons</li> <li>• Crude Oil</li> </ul>	1	C

					<ul style="list-style-type: none"> <li>• Refining crude oil, its uses and its economic importance</li> <li>• Cracking</li> <li>• Octane number of a fuel</li> <li>• Coal</li> <li>• Resource management and national wealth</li> <li>• Mineral exploration</li> <li>• Pollution management.</li> </ul>		

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1	MAN AND ENERGY	ISC 321	MR AYAWARI ILAYE LAMI	0703 755 2316	<ul style="list-style-type: none"> <li>• Magnetism</li> <li>• Laws of Magnetism</li> <li>• Magnetic Induction</li> <li>• Electrostatics</li> <li>• Static Electricity and Magnetism</li> <li>• Electrostatics</li> <li>• Current Electricity</li> <li>• Simple Circuit and their Functions</li> <li>• Conductor and Electrical Insulator</li> <li>• Series and Parallel Circuits.</li> <li>• Transfer of Chemical Energy to Electrical Energy</li> <li>• Electromagnetism</li> <li>• Ohm's Law</li> <li>• Direct and Alternating Currents.</li> <li>• Mains Electrical Circuits</li> </ul>	1	C

					<ul style="list-style-type: none"> <li>• Principle of A Ring-Main Circuit</li> <li>• Principle of Earthing Appliances and Other Safety Aspects of Electrical Circuits.</li> <li>• Radioactivity (Types, Properties, Uses and Danger)</li> </ul>		
2	REPRODUCTION AND GROWTH	ISC 322	MS JOY ZIWORRITIN	0802 553 7341	<ul style="list-style-type: none"> <li>• Sexual Reproduction</li> <li>• Reproductive System</li> <li>• Human Development</li> <li>• Monthly Cycle,</li> <li>• Pregnancy</li> <li>• Contraception and Family Planning</li> <li>• Growth and Development</li> <li>• Parturition and Lactation</li> <li>• Puberty</li> <li>• Human Potentials for Population Growth</li> <li>• Growth in Plant</li> <li>• Introductory Embryology</li> </ul>		
3	CARBON COMPOUND	ISC 323	MR SOROH ANTHONY ESEIMOKUMO	08069760970	<ul style="list-style-type: none"> <li>• Haloalkanes (Reactions, Importance and Dangers)</li> <li>• Alkanols (General Formula, Preparation, Properties and Uses)</li> <li>• Alkanoic Acids (General Formula, Preparation, Properties and Uses)</li> <li>• Amines and Amino Acids (General Formula, Classes, Properties and Uses)</li> <li>• Synthetic Macro-Molecules</li> <li>• Polymerization</li> </ul>	1	C
4	EARTH AND THE MOON	ISC 324	GEOGRAPHY DEPT	0813 645 8331	<ul style="list-style-type: none"> <li>• Natural Cycles (Days, Lunar Months, And Year)</li> <li>• Seasons (Harmattan; Summer/Winter, Rainy/Dry)</li> <li>• Structure of the Earth</li> <li>• Geological Time Scale</li> <li>• Atmosphere</li> <li>• Rocks (Types and Formation)</li> <li>• The Moon</li> <li>• Relationship between Moon and the Earth</li> </ul>	1	C

					<ul style="list-style-type: none"> <li>• Solar and Lunar Eclipse</li> </ul>		
5	GLOBAL ECOLOGY	ISC 325	DR BEREZI	0803 339 3269	<ul style="list-style-type: none"> <li>• Science and Technological Development on Population</li> <li>• Gender Roles in Society and Culture</li> <li>• Diseases (Causes, Effects, Treatments)</li> <li>• Drug Abuse</li> <li>• Methods of Diseases Transmission</li> <li>• Contacted Disease (Spread, Prevention and Control)</li> <li>• Blood Transfusion</li> <li>• Preventive Medicines</li> <li>• Immunization</li> </ul>	1	C