



**UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
UNIVERSITY OF DAR ES SALAAM
DAR ES SALAAM UNIVERSITY COLLEGE OF
EDUCATION
FACULTY OF SCIENCE**



**INFORMATION TO NEW UNDERGRADUATE STUDENTS
2026 /2027**

1.0 Faculty Administration

The Faculty of Science comprises three Departments: -

1. Department of Chemistry,
2. Department of Biological Sciences,
3. Department of Physics, Mathematics, and Informatics

The Faculty offers courses leading to an award of Bachelor of Science with Education (B.Sc. (Ed.)) degree, which is obtainable after three years.

1.1 Admission/ Entry Requirements

The Faculty of Science, admits students into its undergraduate programme under the prescribed admission regulations of the University of Dar es Salaam. Students admitted into B.Sc. (Ed) programme at DUCE shall select two major Science subjects from the following combinations:

- Biology and Chemistry
- Biology and Geography
- Mathematics and Chemistry
- Mathematics and Computer Science,
- Physics and Computer Science,
- Physics and Chemistry
- Physics and Mathematics
- Physics and Biology
- Mathematics and Economics
- Mathematics and Geography
- Chemistry and Computer Science

1.2 Programme Philosophy

The Bachelor of Science with Education programme is grounded in the belief that effective science teaching shapes future generations and drives national development. It is designed to equip student teachers with the necessary knowledge, skills, and values to teach two science subjects: Chemistry, Mathematics, Physics, Biology,

Computer Science, Economics, or Geography at both lower and upper secondary school levels. The programme fosters critical thinking, creativity, and lifelong learning, ensuring that student teachers become reflective practitioners who actively engage in knowledge creation and pedagogical innovation. With a strong emphasis on adapting teaching methods to diverse learning needs, the programme promotes inclusive education and prepares teachers to inspire scientific inquiry, problem-solving, and responsible citizenship in their students.

1.3 Programme objectives

The BSc (Ed) degree programme has the following objectives:

- i. Develop comprehensive knowledge and expertise in their chosen science subjects— Chemistry, Mathematics, Physics, Biology, Computer Science, Economics, or Geography—to teach effectively and support student success.
- ii. Gain a strong theoretical foundation in teacher education, professional ethics, and pedagogy to enhance their teaching practice.
- iii. Master a variety of effective instructional techniques that cater to diverse learning needs.
- iv. Develop competence in designing and utilizing assessment and evaluation methods that align with competency-based education.
- v. Apply creative and innovative approaches to address the diverse academic needs of students.
- vi. Integrate ICT and assistive technologies to enhance teaching and learning across science subjects.
- vii. Develop skills for early identification and intervention for students with special needs.
- viii. Strengthen the use of language and communication strategies to facilitate effective teaching and learning.
- ix. Acquire research skills to improve teaching, learning, and assessment in science education.
- x. Meet certification requirements to effectively teach two science subjects

at the secondary education level.

1.4 Regulations Governing the Award of B.Sc. (Ed) Degree

The Faculty of Science operates a semester system of studies. Each of its disciplines offers a variety of courses, including core courses, which are compulsory to students majoring in the subject and optional courses. Each course is given a credit weighing according to the time devoted to it on the timetable. Fifteen one-hour lectures or 15 two to three-hour practical classes constitute four credits. Thus, for example, a course consisting of 30 one-hour lectures and 15 three-hour practical classes is a twelve credit course. Seminars and discussion groups are not counted in the weighing unless they make up more than a third of the total teaching hours in a course. The exit level for the programme is a **Bachelor of Science with Education (BSc Ed)**, which is level 8 as per TCU guidelines. **A minimum of 384 credits** are required for obtaining the BSc Ed degree. Passing a course shall mean scoring a **C grade** or higher.

2.0 Teaching Practice (TP) or Field Work Attached to the Programme

The Bachelor of Science with Education (BSc. Education) programme shall constitute Practical Teacher Training (PTT) activities. The PTT activities are designed to provide student teachers with a comprehensive, hands-on learning experience that equip them with the essential knowledge, skills, and attitudes needed to become effective teachers. The philosophy behind PTT views learning as an active and dynamic process, grounded in constructivist theories that emphasize knowledge construction through interaction with one's environment. This philosophy underscores the necessity of acquiring a strong foundation in both subject matter and pedagogy before applying skills in real classroom settings.

The overall aim of the PTT programme is to help student teachers develop both the theoretical understanding and practical teaching skills required for success in real-world classrooms. The PTT will involve a combination of pre-teaching activities, immersive simulated teaching, and real-world classroom experiences in nearby schools, integrated into the teaching methods courses. The first two components will take place in university setting under the guidance of university teacher educators, while the third component will involve practical teaching cycles in

nearby secondary schools, co-supervised by experienced secondary school teachers and university subject teacher educators.

The first phase, the pre-teaching activities, will occur in Teaching Method Course One during the 5th semester of the degree programme (i.e 1st semester of third year). This phase focuses on thorough preparation to equip student teachers with foundational knowledge and skills. Student teachers will engage in various activities such as attending lectures and seminars on subject-related teaching methods, analysing syllabi, and exploring teaching and learning methods and materials specific to secondary school subjects. Student teachers will also be involved in observing virtual lessons relevant to their subjects. Assessment activities in this phase will include written **essays, tests, examinations, presentations, lesson plan reviews, observation, portfolios, and peer reviews.**

The second phase, immersive simulated teaching, will also be part of Teaching Methods Course. First, Student teachers will be involved in developing and implementing lesson plans, peer assessment and feedback as well as reflection of the lessons implemented. This phase provides student teachers with hands-on experience in simulated classroom scenarios, helping them refine their pedagogical techniques, improve classroom management, and build confidence. This will prepare student teachers effectively for real-world teaching challenges. **Assessment for this phase will include written quizzes, performance tasks, projects, observations, presentations, lesson plan reviews, simulated lessons, and peer reviews.** Further details of the other two phases are outlined in the respective course descriptions.

The third component of the PTT programme will be conducted through practical teaching cycles in nearby secondary schools, as part of Teaching Methods Course Two during the 6th semester of the degree programme (2nd semester of the third year). This phase aims to provide student teachers with essential hands-on experience in real classroom settings. During this phase, **student teachers will engage in a series of structured teaching periods at nearby schools in Dar es Salaam.** They will implement and adapt instructional strategies developed in earlier phases of training. The University, through the Ministry of Education, Science and Technology, shall establish partnership with the nearby schools to effectively facilitate meaningful field experiences. The practical teaching experience will be divided into three

consecutive cycles: **Cycle 1, Cycle 2, and Cycle 3.** These cycles allow student teachers to progressively take on teaching responsibilities while receiving feedback from experienced mentors.

In Cycle 1, student teachers will be engaged in observing experienced teachers, co-planning, co-teaching, and assessment activities. Student teachers will also receive feedback from experienced teachers, and reflect on their own practices. They will model professionalism and ethical behaviour in teaching situations, incorporate subject matter knowledge effectively, support classroom management efforts, assist in applying inclusive practices, and help integrate technology into lessons. **Assessment in this cycle will be conducted by the designated experienced secondary school teacher** in the relevant subjects using protocols established by the university.

In Cycle 2, student teachers will take on more responsibility, focusing on lesson planning and delivering lessons, assessment, provide feedback to their student and receive feedback from mentor teachers. They will adapt instructional strategies to meet diverse needs, manage classrooms effectively, implement inclusive practices, and use technology to enhance learning.

Mentor teachers will observe student teachers while teaching and provide feedback focusing on professionalism, subject matter delivery, instructional strategies, classroom management, inclusive practices, and technology integration. Assessment methods will include portfolio, lesson plan evaluations, classroom observations, and rubrics.

Cycle 3, known as independent teaching and assessment, will involve student teachers designing and delivering lessons independently in real classrooms. They will uphold high standards of professionalism and ethical behaviour, demonstrate a deep understanding of subject matter, adapt instructional strategies, manage classrooms effectively, apply inclusive practices, and integrate technology seamlessly. During this phase, **student teachers will be assessed by mentor teachers, with collaboration from university teacher educators,** based on the university's established protocols for observing and providing feedback on professionalism, subject knowledge, instructional strategies, classroom management, inclusion, and technology use.

Cycle 1 will take place three days in a week for a duration of three weeks (6 credits). Cycle 2 will also run for three days in a week but will extend over next five weeks (8 credits). Similarly, Cycle 3 will be conducted for three days a week and will last for next seven weeks (12 credits). This distribution is based on credit weight for each cycle. This comprehensive approach ensures that student teachers not only apply their theoretical knowledge but also refine their teaching skills, ultimately enhancing their overall teaching competence and preparing them for successful career in education.

Mentorship and supervision of PTT

To promote professionalism, integrity, ethics, and commitment among student teachers, a structured mentorship program will be established through collaboration between experienced secondary school teachers and university educators. The mentors will serve as role models, demonstrating high standards of professionalism and ethical conduct. Regular meetings will be held to provide feedback, offer guidance, and ensure the integration of core values into teaching practices. This structured mentorship approach is designed to enhance the quality of teacher education and adequately prepare student teachers for the challenges they will face in the profession. Throughout their training, student teachers will receive collaborative supervision and mentorship from both experienced secondary school teachers and university subject teacher educators, spanning cycles 1 to 3, in accordance with the university's established guidelines.

2.1 Assessment of Practical Teacher Training Activities

The assessment of Teaching Methods courses will involve both formative and summative components. Formative assessment will account for 60% of the total marks, while summative assessment will contribute 40%. For **Teaching Methods Course 1**, formative assessment will include a variety of methods such as written quizzes, performance tasks, projects, observations, presentations, lesson plan reviews, simulated lessons, portfolio/project work, and peer reviews. The summative assessment for this course will be conducted through a university-written examination.

In **Teaching Methods Course 2**, formative assessment will be carried out during Teaching Cycles 1 and 2. The methods used will include portfolios, co-teaching evaluation forms, peer assessments, lesson plan evaluations, classroom observations, and rubrics. These formative assessments will contribute 60% to the final grade, with 25% from Cycle 1 and 35% from Cycle 2. The summative assessment, including portfolio work, lesson plan evaluations, classroom observations, and teaching effectiveness rubrics, will contribute 40% to the final grade.

To progress to Teaching Methods Course 2, student teachers must successfully complete and demonstrate mastery of the learning activities for Teaching Methods Course 1. To be eligible to advance, a student teacher must achieve at least 40% (“C” grade) of the total marks for Teaching Methods Course 1. Student teachers who fail to complete and demonstrate mastery of the expected learning outcomes will be required to repeat Teaching Methods Course 1. Assessments will be conducted by university subject teacher educators in collaboration with designated, experienced secondary school teachers from host institutions, following assessment protocols developed by the university.

3.0 Examination Regulations

Examination and teaching practice regulations for B.Sc. (Ed.) students at the UDSM will apply at DUCE (Read: University of Dar Es Salaam Undergraduate Prospectus 2025/2026 on the section “General University Examination Regulations (GUER)”).

4.0 ICT Services at the Faculty

While arrangements to offer ICT services to all students belonging to the Faculty are going on, students are advised to use the College’s ICT facilities in the Computer laboratories and the Main Library. Students are advised to familiarize themselves with ARIS (Academic Registration Information System), since it manages important information on course registration, examinations results and accommodation.

5.0 Course Packaging Structures and Credits Distribution for B.Sc.(Ed.) Programme

5.1 Preamble

The B.Sc. (Ed.) programme was revised in 2025, and the 2025/2026 academic year marks the first cohort to study under this revised version. Several courses, as well as the mode of implementation, have changed compared to the previous programme. We encourage you to read this brochure and the entire document carefully to familiarize yourself with the new structure and its requirements.

5.2 Semester-Based Course Mapping by Subject Combination

The proposed course mappings onto the semester time frame are shown in Tables 5.2.1 - 5.2.11. It is to be noted that the indicated elective courses may be necessary for completion of the degree programme. Other additional optional courses can be selected provided prerequisites and other conditions of registration are satisfied.

Table 5.2.1: Learning matrix for Biology/Chemistry in BSc (Ed) degree

Year	Semester	Course Code	Course Title	Status	Credits
1	I	EP 101	Educational Psychology	Core	8
		EF 102	Philosophy of Education	Core	8
		DS 114	Development Perspectives I	Core	12
		BL 120	Cell Biology and Genetics for Teachers	Core	12
		ZL 121	Invertebrate Zoology	Core	8
		CH 118	Basic Analytical and Physical Chemistry	Core	12
		CH 121	Chemistry Practicals 1	Core	8
		Total			68
	II	EP 105	Inclusive Education	Core	6
		EF 103	Sociology of Education	Core	7
		DS 115	Development Perspectives II	Core	12
		ZL 122	Chordate Zoology	Core	8
		BT 131	Plant Structure and Physiology	Core	8
		CH 117	Organic Chemistry I	Core	12

		CH 175	Basic Inorganic Chemistry	Core	12
		Total			65
2	I	CT 200	Curriculum and Teaching	Core	8
		CT 250	Professional Communication for Teachers	Core	6
		EP 210	Assessment and Evaluation	Core	8
		BL 224	Principles and Techniques of Taxonomy	Core	8
		ZL 213	Vertebrate Anatomy and Physiology I	Core	12
		CH 243	Organic Chemistry II	Core	12
		Total			54
		BT 129	Introduction to Plant Evolution	Elective	8
		BT 228	Community Ecology	Elective	12
		ZL 203	Parasitology	Elective	12
		CHE 200	Agricultural Chemistry	Elective	12
		Total			44
	II	EA 202	Instructional Leadership	Core	7
		EF 201	Professionalism and Ethics	Core	8
		EP 211	Classroom Action Research	Core	6
		BT 137	Introduction to Ecology	Core	8
		ZL 220	Vertebrate Anatomy and Physiology II	Core	12
		CH 290	Chemical Kinetics and Electrochemistry	Core	12
		CH 241	Chemistry Practicals III	Core	8
		FN 250	Financial Literacy	Core	-
		Total			61
		ZL 124	Developmental Biology	Elective	8
		BT 227	Anatomy of Angiosperms	Elective	8
		CH 293	Food Chemistry	Elective	8
		Total			24
3	I	CT 360	Secondary Education Biology Methods I		
			Pre-teaching activities	Core	4
			immersive simulated teaching	Core	6
		CT 361	Secondary Education Chemistry Methods I		
			Pre-teaching activities	Core	4
			immersive simulated teaching	Core	6
		BL 331	Cell Biology and Molecular Genetics	Core	12
		CH 201	Chemical Thermodynamics	Core	12
		CHE 301	Chemistry Laboratory Techniques	Core	8
		Total			52
		BL 315	Ecological Impact Assessment	Elective	8
		CH 248	Instrumental Methods in Analytical Chemistry	Elective	12
		Total			20
	II	CT 378	Secondary Education Biology Methods 2		

			Cycle 1: Observation and Co- Teaching	Core	6
			Cycle 2: Lesson Planning and Implementation	Core	8
			Cycle 3: Lesson Planning and Independent Teaching	Core	12
		CT 379	Secondary Education Chemistry Methods 2		
			Cycle 1: Observation and Co- Teaching	Core	6
			Cycle 2: Lesson Planning and Implementation	Core	8
			Cycle 3: Lesson Planning and Independent Teaching	Core	12
		BL 391	Biology Project for Teachers	Core	12
		ZL 343	Microevolution	Core	12
		CH 364	Coordination Chemistry	Core	12
		CHE 302	Chemistry Project for Teachers	Core	8
		Total			96

Table 5.2.2: Learning matrix for Biology/Physics in BSc (Ed) degree

Year	Semester	Course Code	Course Title	Status	Credits
1	I	EP 101	Educational Psychology	Core	8
		EF 102	Philosophy of Education	Core	8
		DS 114	Development Perspectives I	Core	12
		BL 120	Cell Biology and Genetics for Teachers	Core	12
		ZL 121	Invertebrate Zoology	Core	8
		PH 121	Electricity and Magnetism	Core	8
		PH 122	Classical Mechanics	Core	8
		Total			64
		PH 162	Mathematical Methods for Physicists I	Elective	8
		Total			8
	II	EP 105	Inclusive Education	Core	6
		EF 103	Sociology of Education	Core	7
		DS 115	Development Perspectives II	Core	12
		ZL 122	Chordate Zoology	Core	8
		BT 131	Plant Structure and Physiology	Core	8
		PH 116	Experimental Methods of Physics I	Core	8
		PH 127	Vibrations, Waves and Optics	Core	12
		Total			61
2	I	CT 200	Curriculum and Teaching	Core	8

		CT 250	Professional Communication for Teachers	Core	6
		EP 210	Assessment and Evaluation	Core	8
		BL 224	Principles and Techniques of Taxonomy	Core	8
		ZL 213	Vertebrate Anatomy and Physiology I	Core	12
		PH 217	Quantum Physics	Core	12
		PH 247	Experimental Methods of Physics II	Core	8
		Total			62
		BT 129	Introduction to Plant Evolution	Elective	8
		PH 161	Nuclear and Radiation Physics	Elective	8
		PH 272	Particle Physics	Elective	8
		Total			24
	II	EA 202	Instructional Leadership	Core	7
		EF 201	Professionalism and Ethics	Core	8
		EP 211	Classroom Action Research	Core	6
		BT 137	Introduction to Ecology	Core	8
		ZL 220	Vertebrate Anatomy and Physiology II	Core	12
		PH 220	Statistical Thermodynamics	Core	8
		PH 229	Computational Physics	Core	8
		FN 250	Financial Literacy	Core	-
		Total			57
		ZL 124	Developmental Biology	Elective	8
		BT 227	Anatomy of Angiosperms	Elective	8
		PH 249	Fundamentals of Materials Science	Elective	8
		PH 222	Advanced Mechanics	Elective	8
		Total			32
3	I	CT 360	Secondary Education Biology Methods I		
			Pre-teaching activities	Core	4
			Immersive simulated teaching	Core	6
		CT 362	Secondary Education Physics Methods I		
			Pre-teaching activities	Core	4
			immersive simulated teaching	Core	6
		BL 331	Cell Biology and Molecular Genetics	Core	12
		PH 339	Electronics	Core	12
		PH 332	Solid State Physics	Core	8
		Total			52
		BL 315	Ecological Impact Assessment	Elective	8
		PH 319	Fundamentals of Atmospheric Physics	Elective	8
		PH 334	Energy in the Environment	Elective	8

		PH 326	Entrepreneurship in Physics	Elective	8
		PH 278	Nuclear Safety and Security	Elective	8
		Total			40
	II	CT 378	Secondary Education Biology Methods 2		
			Cycle 1: Observation and Co- Teaching	Core	6
			Cycle 2: Lesson Planning and Implementation	Core	8
			Cycle 3: Lesson Planning and Independent Teaching	Core	12
		CT 380	Secondary Education Physics Methods 2		
			Cycle 1: Observation and Co- Teaching	Core	6
			Cycle 2: Lesson Planning and Implementation	Core	8
			Cycle 3: Lesson Planning and Independent Teaching	Core	12
		BL 391	Biology Project for Teachers	Core	12
		ZL 343	Microevolution	Core	12
		PH 346	Physics Project	Core	8
		PH 351	Physics of the Atom	Core	12
		Total			96

Table 5.2.3: Learning Matrix for Biology/Geography in BSc (Ed) degree

Year	Semester	Course Code	Course Title	Status	Credits
1	I	EP 101	Educational Psychology	Core	8
		EF 102	Philosophy of Education	Core	8
		DS 114	Development Perspectives I	Core	12
		BL 120	Cell Biology and Genetics for Teachers	Core	12
		ZL 121	Invertebrate Zoology	Core	8
		GE 140	Physical Geography	Core	12
		Total			60
		CH 118	Basic Analytical and Physical Chemistry	Elective	12
		Total			12
	II	EP 105	Inclusive Education	Core	6
		EF 103	Sociology of Education	Core	7
		DS 115	Development Perspectives II	Core	12
		ZL 122	Chordate Zoology	Core	8
		BT 131	Plant Structure and Physiology	Core	8
		GE 141	Climatology	Core	12

		GE 144	Surveying and Mapping Science	Core	12
		Total			65
2	I	CT 200	Curriculum and Teaching	Core	8
		CT 250	Professional Communication for Teachers	Core	6
		EP 210	Assessment and Evaluation	Core	8
		BL 224	Principles and Techniques of Taxonomy	Core	8
		ZL 213	Vertebrate Anatomy and Physiology I	Core	12
		GE 244	Quantitative Methods in Geography	Core	12
		Total			54
		BT 129	Introduction to plant Evolution	Elective	8
		BT 228	Community Ecology	Elective	12
		ZL 203	Parasitology	Elective	12
		Total			32
	II	EA 202	Instructional Leadership	Core	7
		EF 201	Professionalism and Ethics	Core	8
		EP 211	Classroom Action Research	Core	6
		BT 137	Introduction to Ecology	Core	8
		ZL 220	Vertebrate Anatomy and Physiology II	Core	12
		GE 241	Biogeography	Core	12
		FN 250	Financial Literacy	Core	-
		Total			53
		ZL 124	Developmental Biology	Elective	8
		BT 227	Anatomy of Angiosperms	Elective	8
		Total			16
3	I	CT 360	Secondary Education Biology Methods I		
			Pre-teaching activities	Core	4
			immersive simulated teaching	Core	6
		CT 355	Secondary Education Geography Methods I		
			Pre-teaching activities	Core	4
			immersive simulated teaching	Core	6
		BL 331	Cell Biology and Molecular Genetics	Core	12
		GE 355	Integrated Natural Resources Management	Core	12
		GE 357	Environmental Conservation and Management	Core	12

		Total			56
		BL 315	Ecological Impact Assessment	Elective	8
		ZL 204	Entomology	Elective	12
		Total			20
	II	CT 378	Secondary Education Biology Methods 2		
			Cycle 1: Observation and Co- Teaching	Core	6
			Cycle 2: Lesson Planning and Implementation	Core	8
			Cycle 3: Lesson Planning and Independent Teaching	Core	12
		CT 373	Secondary Education Geography Methods 2		
			Cycle 1: Observation and Co- Teaching	Core	6
			Cycle 2: Lesson Planning and Implementation	Core	8
			Cycle 3: Lesson Planning and Independent Teaching	Core	12
		BL 391	Biology Project for Teachers	Core	12
		ZL 343	Microevolution	Core	12
		GE 269	Urban and Rural Economy	Core	12
		GE 371	Population, Environment and Development	Core	12
		Total			100

Table 5.2.4: Learning matrix for Chemistry/Physics in BSc (Ed) degree

Year	Semester	Course Code	Course Title	Status	Credits
1	I	EP 101	Educational Psychology	Core	8
		EF 102	Philosophy of Education	Core	8
		DS 114	Development Perspectives I	Core	12
		PH 121	Electricity and Magnetism	Core	8
		PH 122	Classical Mechanics	Core	8
		CH 118	Basic Analytical and Physical Chemistry	Core	12
		CH 121	Chemistry Practicals 1	Core	8
		Total			64
		PH 162	Mathematical Methods for Physicists I	Elective	8
		Total			8
	II	EP 105	Inclusive Education	Core	6

		EF 103	Sociology of Education	Core	7
		DS 115	Development Perspectives II	Core	12
		PH 116	Experimental Methods of Physics I	Core	8
		PH 127	Vibrations, Waves and Optics	Core	12
		CH 117	Organic Chemistry I	Core	12
		CH 175	Basic Inorganic Chemistry	Core	12
		Total			69
2	I	CT 200	Curriculum and Teaching	Core	8
		CT 250	Professional Communication for Teachers	Core	6
		EP 210	Assessment and Evaluation	Core	8
		PH 217	Quantum Physics	Core	12
		PH 247	Experimental Methods of Physics II	Core	8
		CH 243	Organic Chemistry II	Core	12
		Total			54
		PH 204	Mathematical Methods of Physics	Elective	12
		PH 161	Nuclear and Radiation Physics	Elective	8
		PH 272	Particle Physics	Elective	8
		CHE 200	Agricultural Chemistry	Elective	12
		Total			40
	II	EA 202	Instructional Leadership	Core	7
		EF 201	Professionalism and Ethics	Core	8
		EP 211	Classroom Action Research	Core	6
		PH 220	Statistical Thermodynamics	Core	8
		PH 229	Computational Physics	Core	8
		CH 290	Chemical Kinetics and Electrochemistry	Core	12
		CH 241	Chemistry Practicals III	Core	8
		FN 250	Financial Literacy	Core	-
		Total			57
		PH 249	Fundamentals of Materials Science	Elective	8
		PH 222	Advanced Mechanics	Elective	8
		CH 294	Analytical Chemistry	Elective	12
		CH 293	Food Chemistry	Elective	8
		CH 227	Environmental Chemistry	Elective	12
		Total			48
3	I	CT 362	Secondary Education Physics Methods 1		
			Pre-teaching activities	Core	4
			immersive simulated teaching	Core	6

		CT 361	Secondary Education Chemistry Methods 1		
			Pre-teaching activities	Core	4
			immersive simulated teaching	Core	6
		PH 339	Electronics	Core	12
		PH 332	Solid State Physics	Core	8
		CH 201	Chemical Thermodynamics	Core	12
		CHE 301	Chemistry Laboratory Techniques	Core	8
		Total			60
		PH 319	Fundamentals of Atmospheric Physics	Elective	8
		PH 334	Energy in the Environment	Elective	8
		PH 326	Entrepreneurship in Physics	Elective	8
		PH 278	Nuclear Safety and Security	Elective	8
		CH 248	Instrumental Methods in Analytical Chemistry	Elective	12
		Total			44
	II	CT 380	Secondary Education Physics Methods 2		
			Cycle 1: Observation and Co-Teaching	Core	6
			Cycle 2: Lesson Planning and Implementation	Core	8
			Cycle 3: Lesson Planning and Independent Teaching	Core	12
		CT 379	Secondary Education Chemistry Methods 2		
			Cycle 1: Observation and Co-Teaching	Core	6
			Cycle 2: Lesson Planning and Implementation	Core	8
			Cycle 3: Lesson Planning and Independent Teaching	Core	12
		PH 346	Physics Project	Core	8
		PH 351	Physics of the Atom	Core	12
		CH 364	Coordination Chemistry	Core	12
		CHE 302	Chemistry Project for Teachers	Core	8
		Total			92

Table 5.2.5: Learning matrix for Chemistry/Mathematics in BSc (Ed) degree

Year	Semester	Course Code	Course Title	Status	Credits
1	I	EP 101	Educational Psychology	Core	8

		EF 102	Philosophy of Education	Core	8
		DS 114	Development Perspectives I	Core	12
		MT 100	Foundations of Analysis	Core	12
		MT 127	Linear Algebra I	Core	12
		CH 118	Basic Analytical and Physical Chemistry	Core	12
		CH 121	Chemistry Practicals 1	Core	8
		Total			72
		II	EP 105	Inclusive Education	Core
	EF 103		Sociology of Education	Core	7
	DS 115		Development Perspectives II	Core	12
	MT 136		Ordinary Differential Equations	Core	12
	MT 129		Introduction to Geometry	core	8
	CH 117		Organic Chemistry I	Core	12
	CH 175		Basic Inorganic Chemistry	Core	12
	Total			69	
2	I	CT 200	Curriculum and Teaching	Core	8
		CT 250	Professional Communication for Teachers	Core	6
		EP 210	Assessment and Evaluation	Core	8
		MT 228	Calculus I	Core	8
		MT 234	Introduction to Probability and Statistics	Core	8
		CH 243	Organic Chemistry II	Core	12
		Total			50
		CHE 200	Agricultural Chemistry	Electiv e	12
		MT 200	Analysis 2: Functions of Several Variables	Electiv e	12
		MT 225	Partial Differential Equations	Electiv e	8
		Total			32
	II	EA 202	Instructional Leadership	Core	7
		EF 201	Professionalism and Ethics	Core	8
		EP 211	Classroom Action Research	Core	6
		MT 278	Linear Programming	Core	8
		MT 274	Numerical Analysis I	Core	8
		CH 290	Chemical Kinetics and Electrochemistry	Core	12
		CH 241	Chemistry Practicals III	Core	8

3		FN 250	Financial Literacy	Core	-
		Total			57
		CH 294	Analytical Chemistry	Elective	12
		CH 293	Food Chemistry	Elective	8
		CH 227	Environmental Chemistry	Elective	12
		MT 227	Linear Algebra II	Elective	12
		Total			44
	I	CT 358	Secondary Education Mathematics Methods 1		
			Pre-teaching activities	Core	4
			immersive simulated teaching	Core	6
		CT 361	Secondary Education Chemistry Methods 1		
			Pre-teaching activities	Core	4
			immersive simulated teaching	Core	6
		MT 328	Calculus II	Core	8
		MT 265	Mathematical Computing	Core	8
		CH 201	Chemical Thermodynamics	Core	12
		CHE 301	Chemistry Laboratory Techniques	Core	8
		Total			56
		CH 248	Instrumental Methods in Analytical Chemistry	Elective	12
		MT 379	Introduction to Mathematical modelling	Elective	12
		MT 357	Abstract Algebra	Elective	12
		Total			36
	II	CT 376	Secondary Education Mathematics Methods 2		
			Cycle 1: Observation and Co-Teaching	Core	6
			Cycle 2: Lesson Planning and Implementation	Core	8
			Cycle 3: Lesson Planning and Independent Teaching	Core	12
		CT 379	Secondary Education Chemistry Methods 2		
			Cycle 1: Observation and Co-Teaching	Core	6
			Cycle 2: Lesson Planning and Implementation	Core	8
			Cycle 3: Lesson Planning and	Core	12

			Independent Teaching		
		MT 310	Analysis 3: Complex Analysis	Core	8
		MT 388	Mathematics Project for Teachers	Core	8
		CH 364	Coordination Chemistry	Core	12
		CHE 302	Chemistry Project for Teachers	Core	8
		Total			88

Table 5.2.6: Learning matrix for Chemistry/Computer Science in BSc (Ed) degree

Year	Semester	Course Code	Course Title	Status	Credits
1	I	EP 101	Educational Psychology	Core	8
		EF 102	Philosophy of Education	Core	8
		DS 114	Development Perspectives I	Core	12
		CS 151	Computer Organization and Architecture I	Core	12
		CH 118	Basic Analytical and Physical Chemistry	Core	12
		CH 121	Chemistry Practicals 1	Core	8
		Total			60
		IS 158	Computing Systems and Equipment Maintenance	Elective	8
		Total			8
	II	EP 105	Inclusive Education	Core	6
		EF 103	Sociology of Education	Core	7
		DS 115	Development Perspectives II	Core	12
		IS 101	Computer Networks and Communication	Core	8
		CS 178	Foundations of High-Level Programming	Core	12
		CH 117	Organic Chemistry I	Core	12
		CH 175	Basic Inorganic Chemistry	Core	12
		Total			69
2	I	CT 200	Curriculum and Teaching	Core	8
		CT 250	Professional Communication for Teachers	Core	6
		EP 210	Assessment and Evaluation	Core	8
		IS 264	Database Systems	Core	12
		IS 237	Data Abstraction and Algorithm	Core	12

3		CH 243	Organic Chemistry II	Core	12
		Total			58
		CHE 200	Agricultural Chemistry	Elective	12
		CS 243	Computer Network Design and Administration	Elective	12
		Total			24
	II	EA 202	Instructional Leadership	Core	7
		EF 201	Professionalism and Ethics	Core	8
		EP 211	Classroom Action Research	Core	6
		IS 203	Web Programming and Internet Security	Core	12
		IS 202	Object Oriented Programming and Mobile App Development in Java	Core	12
		CH 290	Chemical Kinetics and Electrochemistry	Core	12
		CH 241	Chemistry Practicals III	Core	8
		FN 250	Financial Literacy	Core	-
		Total			65
	I	CT 359	Secondary Education Computer Science Methods 1		
			Pre-teaching activities	Core	4
			immersive simulated teaching	Core	6
		CT 379	Secondary Education Chemistry Methods 1		
			Pre-teaching activities	Core	4
			immersive simulated teaching	Core	6
		IS 301	Python for Data Analysis	Core	8
		CS 334	Operating Systems	Core	12
		CH 201	Chemical Thermodynamics	Core	12
		CHE 301	Chemistry Laboratory Techniques	Core	8
		Total			60
		IS 365	Fundamentals of Artificial Intelligence	Elective	12
		CH 248	Instrumental Methods in Analytical Chemistry	Elective	12
		Total			24
	II	CT 377	Secondary Education Computer Science Methods 2		
			Cycle 1: Observation and Co-Teaching	Core	6
			Cycle 2: Lesson Planning and Implementation	Core	8
			Cycle 3: Lesson Planning and Independent Teaching	Core	12

		CT 379	Secondary Education Chemistry Methods 2		
			Cycle 1: Observation and Co-Teaching	Core	6
			Cycle 2: Lesson Planning and Implementation	Core	8
			Cycle 3: Lesson Planning and Independent Teaching	Core	12
		IS 346	Emerging Digital Technologies	Core	8
		ISE 300	Computer Science Project for Teachers	Core	8
		CH 364	Coordination Chemistry	Core	12
		CHE 302	Chemistry Project for Teachers	Core	8
		Total			88

Table 5.2.7: Learning matrix for Mathematics/Economics in BSc (Ed) degree

Year	Semester	Course Code	Course Title	Status	Credits
1	I	EP 101	Educational Psychology	Core	8
		EF 102	Philosophy of Education	Core	8
		DS 114	Development Perspectives I	Core	12
		MT 100	Foundations of Analysis	Core	12
		MT 127	Linear Algebra I	Core	12
		EC 116	Introductory Microeconomic Analysis I	Core	12
		Total			64
	II	EP 105	Inclusive Education	Core	6
		EF 103	Sociology of Education	Core	7
		DS 115	Development Perspectives II	Core	12
		MT 136	Ordinary Differential Equations	Core	12
		MT 129	Introduction to Geometry	core	8
		EC 126	Introductory Microeconomic Analysis II	Core	12
		Total			57
		MT 147	Discrete Mathematics	Elective	12
		Total			69
2	I	CT 200	Curriculum and Teaching	Core	8
		CT 250	Professional Communication for Teachers	Core	6

		EP 210	Assessment and Evaluation	Core	8
		MT 228	Calculus I	Core	8
		MT 234	Introduction to Probability and Statistics	Core	8
		EC 216	Intermediate Microeconomic Analysis I	Core	12
		EC 117	Introductory Macroeconomic Analysis II	Core	12
		Total			62
		MT 225	Partial Differential Equations	Elective	8
		Total			8
	II	EA 202	Instructional Leadership	Core	7
		EF 201	Professionalism and Ethics	Core	8
		EP 211	Classroom Action Research	Core	6
		MT 278	Linear Programming	Core	8
		MT 274	Numerical Analysis I	Core	8
		EC 127	Introductory Macroeconomic Analysis II	Core	12
		FN 250	Financial Literacy	Core	-
		Total			49
		MT 227	Linear Algebra II	Elective	12
		Total			12
3	I	CT 376	Secondary Education Mathematics Methods 1		
			Pre-teaching activities	Core	4
			immersive simulated teaching	Core	6
		CT 350	Secondary Education Economics Methods 1		
			Pre-teaching activities	Core	4
			immersive simulated teaching	Core	6
		MT 328	Calculus II	Core	8
		MT 265	Mathematical Computing	Core	8
		EC 217	Intermediate Macroeconomic Analysis I	Core	12
		EC 372	Public Sector Economics	Core	12
		Total			60
		MT 379	Introduction to Mathematical modelling	Elective	12
		MT 357	Abstract Algebra	Elective	12
		Total			24
	II	CT 376	Secondary Education Mathematics Methods 2		
			Cycle 1: Observation and Co-	Core	6

			Teaching		
			Cycle 2: Lesson Planning and Implementation	Core	8
			Cycle 3: Lesson Planning and Independent Teaching	Core	12
		CT 368	Secondary Education Economics Methods 2		
			Cycle 1: Observation and Co-Teaching	Core	6
			Cycle 2: Lesson Planning and Implementation	Core	8
			Cycle 3: Lesson Planning and Independent Teaching	Core	12
		MT 310	Analysis 3: Complex Analysis	Core	8
		MT 388	Mathematics Project for Teachers	Core	8
		EC 226	Intermediate Microeconomic Analysis II	Core	12
		EC 227	Intermediate Macroeconomic Analysis II	Core	12
		Total			92

Table 5.2.8: Learning matrix for Mathematics/Geography in BSc (Ed) degree

Year	Semester	Course Code	Course Title	Status	Credits
1	I	EP 101	Educational Psychology	Core	8
		EF 102	Philosophy of Education	Core	8
		DS 114	Development Perspectives I	Core	12
		MT 100	Foundations of Analysis	Core	12
		MT 127	Linear Algebra I	Core	12
		GE 140	Physical Geography	Core	12
		Total			64
	II	EP 105	Inclusive Education	Core	6
		EF 103	Sociology of Education	Core	7
		DS 115	Development Perspectives II	Core	12
		MT 136	Ordinary Differential Equations	Core	12

		MT 129	Introduction to Geometry	core	8
		GE 141	Climatology	Core	12
		GE 144	Surveying and Mapping Science	Core	12
		Total			69
2	I	CT 200	Curriculum and Teaching	Core	8
		CT 250	Professional Communication for Teachers	Core	6
		EP 210	Assessment and Evaluation	Core	8
		MT 228	Calculus I	Core	8
		MT 234	Introduction to Probability and Statistics	Core	8
		GE 244	Quantitative Methods in Geography	Core	12
		Total			50
		MT 225	Partial Differential Equations	Elective	8
		Total			20
	II	EA 202	Instructional Leadership	Core	7
		EF 201	Professionalism and Ethics	Core	8
		EP 211	Classroom Action Research	Core	6
		MT 278	Linear Programming	Core	8
		MT 274	Numerical Analysis I	Core	8
		GE 241	Biogeography	Core	12
		FN 250	Financial Literacy	Core	-
		Total			49
		MT 227	Linear Algebra II	Elective	12
		Total			12
3	I	CT 358	Secondary Education Mathematics Methods 1		
			Pre-teaching activities	Core	4
			immersive simulated teaching	Core	6
		CT 361	Secondary Education Chemistry Methods 1		
			Pre-teaching activities	Core	4
			immersive simulated teaching	Core	6
		MT 328	Calculus II	Core	8
		MT 265	Mathematical Computing	Core	8
		GE 355	Integrated Natural Resources Management	Core	12
		GE 357	Environmental Conservation and Management	Core	12
		Total			60

		MT 379	Introduction to Mathematical modelling	Elective	12
		MT 357	Abstract Algebra	Elective	12
		Total			24
	II	CT 376	Secondary Education Mathematics Methods 2		
			Cycle 1: Observation and Co-Teaching	Core	6
			Cycle 2: Lesson Planning and Implementation	Core	8
			Cycle 3: Lesson Planning and Independent Teaching	Core	12
		CT 379	Secondary Education Chemistry Methods 2		
			Cycle 1: Observation and Co-Teaching	Core	6
			Cycle 2: Lesson Planning and Implementation	Core	8
			Cycle 3: Lesson Planning and Independent Teaching	Core	12
		MT 310	Analysis 3: Complex Analysis	Core	8
		MT 388	Mathematics Project for Teachers	Core	8
		GE 269	Urban and Rural Economy	Core	12
		GE 371	Biogeography	Core	12
		Total			92

Table 5.2.9: Learning Matrix for Mathematics/Computer Science in BSc (Ed) degree

Year	Semester	Course Code	Course Title	Status	Credits
1	I	EP 101	Educational Psychology	Core	8
		EF 102	Philosophy of Education	Core	8
		DS 114	Development Perspectives I	Core	12
		MT 100	Foundations of Analysis	Core	12
		MT 127	Linear Algebra I	Core	12
		CS 151	Computer Organization and Architecture I	Core	12
		Total			64
		IS 158	Computing Systems and Equipment Maintenance	Elective	8

	II	Total			8
		EP 105	Inclusive Education	Core	6
		EF 103	Sociology of Education	Core	7
		DS 115	Development Perspectives II	Core	12
		MT 136	Ordinary Differential Equations	Core	12
		MT 129	Introduction to Geometry	core	8
		IS 101	Computer Networks and Communication	Core	8
		CS 178	Foundations of High-Level Programming	Core	12
		Total			65
2	I	CT 200	Curriculum and Teaching	Core	8
		CT 250	Professional Communication for Teachers	Core	6
		EP 210	Assessment and Evaluation	Core	8
		MT 228	Calculus I	Core	8
		MT 234	Introduction to Probability and Statistics	Core	8
		IS 264	Database Systems	Core	12
		IS 237	Data Abstraction and Algorithm	Core	12
		Total			62
	II	EA 202	Instructional Leadership	Core	7
		EF 201	Professionalism and Ethics	Core	8
		EP 211	Classroom Action Research	Core	6
		MT 278	Linear Programming	Core	8
		MT 274	Numerical Analysis I	Core	8
		IS 203	Web Programming and Internet Security	Core	12
		IS 202	Object Oriented Programming and Mobile App Development in Java	Core	12
		FN 250	Financial Literacy	Core	-
		Total			61
3	I	CT 358	Secondary Education Mathematics Methods 1		
			Pre-teaching activities	Core	4
			immersive simulated teaching	Core	6
		CT 359	Secondary Education Computer Science Methods 1		
			Pre-teaching activities	Core	4
			immersive simulated teaching	Core	6
		MT 328	Calculus II	Core	8
		MT 265	Mathematical Computing	Core	8
		IS 301	Python for Data Analysis	Core	8

		CS 334	Operating Systems	Core	12
		Total			56
		IS 365	Fundamentals of Artificial Intelligence	Elective	12
		CS 243	Computer Network Design and Administration	Elective	12
		Total			24
	II	CT 376	Secondary Education Mathematics Methods 2		
			Cycle 1: Observation and Co- Teaching	Core	6
			Cycle 2: Lesson Planning and Implementation	Core	8
			Cycle 3: Lesson Planning and Independent Teaching	Core	12
		CT 377	Secondary Education Computer Science Methods 2		
			Cycle 1: Observation and Co- Teaching	Core	6
			Cycle 2: Lesson Planning and Implementation	Core	8
			Cycle 3: Lesson Planning and Independent Teaching	Core	12
		MT 310	Analysis 3: Complex Analysis	Core	8
		MT 388	Mathematics Project for Teachers	Core	8
		IS 346	Emerging Digital Technologies	Core	8
		ISE 300	Computer Science Project for Teachers	Core	8
		Total			84

Table 5.2.10: Learning matrix for Physics/Computer Science in BSc (Ed) degree

Year	Semester	Course Code	Course Title	Status	Credits
1	I	EP 101	Educational Psychology	Core	8
		EF 102	Philosophy of Education	Core	8
		DS 114	Development Perspectives I	Core	12
		CS 151	Computer Organization and Architecture I	Core	12
		PH 121	Electricity and Magnetism	Core	8
		PH 122	Classical Mechanics	Core	8
		Total			56
		IS 158	Computing Systems and Equipment Maintenance	Elective	8
		PH 162	Mathematical Methods for Physicists I	Elective	8

	II	Total			16
		EP 105	Inclusive Education	Core	6
		EF 103	Sociology of Education	Core	7
		DS 115	Development Perspectives II	Core	12
		IS 101	Computer Networks and Communication	Core	8
		CS 178	Foundations of High-Level Programming	Core	12
		PH 116	Experimental Methods of Physics I	Core	8
		PH 127	Vibrations, Waves and Optics	Core	12
		Total			65
2	I	CT 200	Curriculum and Teaching	Core	8
		CT 250	Professional Communication for Teachers	Core	6
		EP 210	Assessment and Evaluation	Core	8
		IS 264	Database Systems	Core	12
		IS 237	Data Abstraction and Algorithm	Core	12
		PH 217	Quantum Physics	Core	12
		PH 247	Experimental Methods of Physics II	Core	8
		Total			62
		PH 161	Nuclear and Radiation Physics	Elective	8
		PH 272	Particle Physics	Elective	8
		Total			16
	II	EA 202	Instructional Leadership	Core	7
		EF 201	Professionalism and Ethics	Core	8
		EP 211	Classroom Action Research	Core	6
		IS 203	Web Programming and Internet Security	Core	12
		IS 202	Object Oriented Programming and Mobile App Development in Java	Core	12
		PH 220	Statistical Thermodynamics	Core	8
		PH 229	Computational Physics	Core	8
		FN 250	Financial Literacy	Core	-
		Total			61
		PH 249	Fundamentals of Materials Science	Elective	8
		PH 222	Advanced Mechanics	Elective	8
		Total			16
3	I	CT 362	Secondary Education Physics Methods 1		
			Pre-teaching activities	Core	4
			immersive simulated teaching	Core	6
		CT 359	Secondary Education Computer Science Methods 1		

			Pre-teaching activities	Core	4
			immersive simulated teaching	Core	6
		IS 301	Python for Data Analysis	Core	8
		CS 334	Operating Systems	Core	12
		PH 339	Electronics	Core	12
		PH 332	Solid State Physics	Core	8
		Total			60
		IS 365	Fundamentals of Artificial Intelligence	Elective	12
		CS 243	Computer Network Design and Administration	Elective	12
		PH 319	Fundamentals of Atmospheric Physics	Elective	8
		PH 334	Energy in the Environment	Elective	8
		PH 326	Entrepreneurship in Physics	Elective	8
		PH 278	Nuclear Safety and Security	Elective	8
		Total			56
	II	CT 380	Secondary Education Physics Methods 2		
			Cycle 1: Observation and Co- Teaching	Core	6
			Cycle 2: Lesson Planning and Implementation	Core	8
			Cycle 3: Lesson Planning and Independent Teaching	Core	12
		CT 377	Secondary Education Computer Science Methods 2		
			Cycle 1: Observation and Co- Teaching	Core	6
			Cycle 2: Lesson Planning and Implementation	Core	8
			Cycle 3: Lesson Planning and Independent Teaching	Core	12
		IS 346	Emerging Digital Technologies	Core	8
		ISE 300	Computer Science Project for Teachers	Core	8
		PH 346	Physics Project	Core	8
		PH 351	Physics of the Atom	Core	12
		Total			92

Table 5.2.11: Learning matrix for Physics/Mathematics in BSc (Ed) degree

Year	Semester	Course Code	Course Title	Status	Credits
1	I	EP 101	Educational Psychology	Core	8
		EF 102	Philosophy of Education	Core	8
		DS 114	Development Perspectives I	Core	12
		MT 100	Foundations of Analysis	Core	12

		MT 127	Linear Algebra I	Core	12
		PH 121	Electricity and Magnetism	Core	8
		PH 122	Classical Mechanics	Core	8
		Total			68
	II	EP 105	Inclusive Education	Core	6
		EF 103	Sociology of Education	Core	7
		DS 115	Development Perspectives II	Core	12
		MT 136	Ordinary Differential Equations	Core	12
		MT 129	Introduction to Geometry	core	8
		PH 116	Experimental Methods of Physics I	Core	8
		PH 127	Vibrations, Waves and Optics	Core	12
		Total			65
2	I	CT 200	Curriculum and Teaching	Core	8
		CT 250	Professional Communication for Teachers	Core	6
		EP 210	Assessment and Evaluation	Core	8
		MT 228	Calculus I	Core	8
		MT 234	Introduction to Probability and Statistics	Core	8
		PH 217	Quantum Physics	Core	12
		PH 247	Experimental Methods of Physics II	Core	8
		Total			58
		PH 204	Mathematical Methods of Physics	Elective	12
		PH 161	Nuclear and Radiation Physics	Elective	8
		PH 272	Particle Physics	Elective	8
		Total			28
	II	EA 202	Instructional Leadership	Core	7
		EF 201	Professionalism and Ethics	Core	8
		EP 211	Classroom Action Research	Core	6
		MT 278	Linear Programming	Core	8
		MT 274	Numerical Analysis I	Core	8
		PH 220	Statistical Thermodynamics	Core	8
		PH 229	Computational Physics	Core	8
		FN 250	Financial Literacy	Core	-
		Total			53
		PH 249	Fundamentals of Materials Science	Elective	8
		PH 222	Advanced Mechanics	Elective	8
		Total			16
3	I	CT 362	Secondary Education Physics Methods 1		
			Pre-teaching activities	Core	4

		immersive simulated teaching	Core	6
	CT 358	Secondary Education Mathematics Methods 1		
		Pre-teaching activities	Core	4
		immersive simulated teaching	Core	6
	MT 328	Calculus II	Core	8
	MT 265	Mathematical Computing	Core	8
	PH 339	Electronics	Core	12
	PH 332	Solid State Physics	Core	8
	Total			56
	PH 319	Fundamentals of Atmospheric Physics	Elective	8
	PH 334	Energy in the Environment	Elective	8
	PH 326	Entrepreneurship in Physics	Elective	8
	PH 278	Nuclear Safety and Security	Elective	8
	Total			32
II	CT 380	Secondary Education Physics Methods 2		
		Cycle 1: Observation and Co- Teaching	Core	6
		Cycle 2: Lesson Planning and Implementation	Core	8
		Cycle 3: Lesson Planning and Independent Teaching	Core	12
	CT 376	Secondary Education Mathematics Methods 2		
		Cycle 1: Observation and Co- Teaching	Core	6
		Cycle 2: Lesson Planning and Implementation	Core	8
		Cycle 3: Lesson Planning and Independent Teaching	Core	12
	MT 310	Analysis 3: Complex Analysis	Core	8
	MT 388	Mathematics Project for Teachers	Core	8
	PH 346	Physics Project	Core	8
	PH 351	Physics of the Atom	Core	12
	Total			88

Note:

1. The Faculty of Humanities and Social Sciences provides descriptions of the courses in **Economics, Geography, and Development Studies**.
2. **FN 250: Financial Literacy** may be taken in any year of study, although it is slotted for the second year.

3. Further details about the courses can be obtained from the respective course instructors, academic advisors or from the Head of Department's office.

Contact Information for the Key Faculty Personnel

1. The Dean's Office,
Faculty of Science-DUCE,
P. O. Box 2329,
Dar es Salaam - Tanzania
Tel no: +255(0)22 2850 415
E-mail: deanfos@duce.ac.tz
2. Head, Biological Sciences Department
P. O. Box 2329, Dar es Salaam
3. Head, Chemistry Department
P. O. Box 2329, Dar es Salaam
4. Head, PMI Department
P. O. Box 2329, Dar es Salaam