

THE OPEN UNIVERSITY OF TANZANIA

THE OFFICE OF THE DEPUTY VICE CHANCELLOR
(ACADEMIC, RESEARCH AND CONSULTANCY)



Directorate of Undergraduate Studies

OUT ORIENTATION BOOKLET 2023-2024

Faculty of Science, Technology and
Environmental Studies



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VISION

To be a leading open and online University in knowledge creation and application.

MISSION

To persistently provide relevant, quality, flexible, accessible, and affordable open online education, research, and services to community for socio-economic development of Tanzania and the rest of the world

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DEAN'S MESSAGE

Dear Freshers and Continuing Students,

I extend my warm welcome to the Open University of Tanzania (OUT) and congratulate all of you for securing a place at our institution. Your decision to study at OUT is greatly appreciated, and your success is our top priority. We are committed to placing students at the center of their educational experience, and we hope that your time here will help you achieve your dreams.



Our Faculty of Science, Technology, and Environmental Studies (FSTES) is one of the five faculties at OUT, consisting of three departments offering a wide range of programs at different academic levels. These programs include non-degree courses, undergraduate degrees, and postgraduate studies in subjects like Physics, Chemistry, Mathematics, Biology, Food Science, and Nutrition. For our science programs, practical components are a mandatory part of your education. The specifics of these practical are provided, and we emphasize the importance of understanding the expectations. We also highlight the opportunity for research and special projects as part of your academic journey.

In addition, the mode of study at FSTES is mainly through blended e-learning, and we make extensive support services available to you. Our primary mode of study is through blended e-learning, utilizing the MOODLE platform, and we offer various support services, including resources, online discussions, internet access, library services, and direct consultation with instructors. We encourage you to refer to our FSTES handbook and departmental contacts for any further information or clarification. The handbook has information, on academic requirements, eligibility for research or special projects, and the duration for these projects. We also outline the minimum units required for graduation in different programs.

Finally, I would like to reiterate my warm welcome to the Faculty of Science, Technology, and Environmental Studies. I am confident that you will have a rewarding academic journey in our student-centered learning environment. For more detailed information, don't hesitate to reach out to our department heads for any further clarification.

Welcome to FSTES
Prof. Joel Mihale

1.0 GENERAL ADMINISTRATION ACTIVITIES

1.1 Admission and Registration

Admission to undergraduate and non-degree programmes is subject to satisfying the stipulated General University and Programme Admission Requirements as provided under The Open University of Tanzania (OUT) Prospectus.

1.2 Registration

1.2.1 Requirement for Registration

Newly admitted local students are required to pay Tshs. 210,000/= or its equivalent for international students prior to registration. The payment shall be made using control numbers generated from the student's application account used to apply for studies at the OUT. E.g., S5431/0004/2018 and password 123456, then click control number. A student may also obtain control numbers from any nearest OUT regional centres. Upon the payment, the student shall be given Student Academic Records Information System (SARIS) account by OUT officials to enable courses registration and learning.

1.2.2 Procedures for Course Registration

- Visit OUT website (www.out.ac.tz)
- Log into the SARIS account by using the username and password given.
- Click the course registration icon to access courses and follow the guidelines provided in the registration system.
- Confirm the course/courses registered and print the invoice for paying the remaining fee balance.
- The SARIS account is also used for examination registration, accessing online academic materials in the MOODLE platform, accessing examination results and viewing payment status.
- A student may register for all first-year courses as per programme requirements or register for some of the courses depending on ability to study and pay for the courses.
- Adding and dropping courses is allowed during course registration.
- Any student failed to register for courses during the registration period shall not be able to access materials in the Moodle platform and is not eligible to sit for examinations.
- Dates for the course registration are provided in the OUT almanack

- The university reserves the right to close or extend the registration period.

1.2.3 Registered Student

Newly admitted students shall be considered students of The Open University of Tanzania (officially) after paying the required initial fees and course registration.

1.2.4 Change of Study Programme

- Registered students may change programmes provided that they have entry qualifications into a programme they wish to switch to.
- The application for changing programme shall be made online through Open University Online Application System (OAS) within the first two weeks of the registration period.
- A fee of Tshs. 30,000/- or its equivalent in foreign currency shall be paid for changing a programme by international students. The payment should be made using the control number issued at the OUT regional centres.

1.2.5 Postponement and Resume of Studies

- Application for the postponement of studies by students can be made within 14 days after the registration period. The postponement of studies shall be allowed after approval by the UGSC and Senate.
- The SARIS account of the student shall be closed during the postponement period
- A student who wishes to resume studies must request the university in writing.
- The request for the postponement and resumption of studies shall be addressed to DVC ARC under the first signature (ufs) of the Director of the OUT regional centre where the student resides.

1.2.6 De-registration from Studies After the Course registration

- Permission to withdraw from studies after the course registration shall be allowed in exceptional circumstances such as illness, personal or academic problems, or other unforeseen circumstances deemed acceptable to the university.
- Applications must follow procedures for de-registration as provided under the OUT-prospectus of 2023/24 academic year.

- Withdrawal from studies should be endorsed by the Dean of the faculty and Director of Students Services and approved by the Undergraduate Studies Committee (UGSC) and the Senate,
- Withdrawal from studies should be made at the end of the academic year only.

1.2.7 Student's Identity

- Identity cards for registered students shall be issued by the OUT regional centre where the student registered during the registration period.
- No student shall be allowed to sit for the examination or receive other OUT services without the OUT student identity card.

2.0 LEARNING AND TEACHING ACTIVITIES

2.1 Mode of delivery

The OUT follows an Open and online Learning mode of teaching and learning. This mode represents a philosophy that combines the principles of learner-centeredness, lifelong learning, flexibility of learning, removal of barriers to access to education, recognition of prior learning and provision of relevant learner support.

At OUT, education is delivered through a Blended mode which comprises mostly online interactivity between lecturers and students with minimum contact (face to face) sessions. The online learning activities are embedded on the Learning Management System (LMS) known as MOODLE which includes online discussion, online assignment, online seminar, online independent learning and online lecture, while the face to face sessions are mainly for field/laboratory/research/project work, teaching practice/tutorials as follows.

Real time (live) online lectures

OUT offers real time online lectures just as in any conventional university for all courses using video conference based on Zoom cloud meeting application, you are encouraged to observe a teaching timetable provided and join the online classes. The Zoom joining links will be accessed on your MOODLE account.

Recorded Online lectures

In this activity, lectures are recorded to video, audio or both then uploaded and made viewable on a MOODLE. The advantage is that, you may access online lectures posted on your designated websites anywhere in the world, at

any time you wish, as long as you have an internet connection, but you can also view offline using OUT mobile App.

Online discussion

Online discussion is a collaborative tool to facilitate communication and knowledge construction. You can view content and contribute to an online discussion any time or anywhere on your computer/tablet/smart phone with an internet connection or offline using OUT mobile App.

Online assignment

Online assessment as any kind of assessment is used primarily to measure cognitive abilities, demonstrating what has been learned after a particular educational event has occurred, such as the end of an instructional unit or chapter. Online assignment is used to determine if learning is happening, to what extent and if changes need to be made for improvement of teaching and learning for both students and instructors.

Online independent study

In ODL, it is assumed that people have the potential to learn continuously in real time by interacting with their environment. Thus, OUT have created a self-directed learning environment for you to discover your own strategies for learning, sharing your knowledge and understanding. Therefore, this student-centred learning approach requires you to make your own decisions and do most of the work. You will find the interactive learning material on your MOODLE account.

Field/practical/laboratory/research work

Practical work, which includes activities such as teaching practice, science practical, field work, research, project work etc., is an integral part of most programs offered by OUT. The practical work will allow you to learn through direct implementation of your future professional role in real workplace settings. It prepares you for meaningful and productive participation in industry, the workforce and the community.

Face to face sessions

Face-to-face learning is an instructional method where course content and learning materials are delivered in person to students. This teaching approach is common in conventional universities. However, at OUT, being a distance learning institution, this teaching method has been mostly replaced by real time online lectures and real time online seminars which allows for a live interaction between a learner and an instructor, a student can get a lecture

anywhere in the world. Nevertheless, in some programs a few face to face sessions have been retained particularly for non-degree programs.

2.2 Units, teaching practice and micro teaching

2.2.1 Units

- Each programme has a required number of units for the student to qualify for graduation. The number of units assigned to a course indicates the study time associated with a course in a year.
- The contents of the units constitute the basic information that you must know, and therefore it should be studied systematically, lecture by lecture. The lectures are divided into six areas of knowledge.
- The main purpose of dividing the lectures into six knowledge areas is to help you understand the subject more easily.
- Each lecture includes some activities. The activities normally involve presenting you with a problem or a question to respond to, and where possible, answers or suggested answers are given for self-testing.
- It is necessary to work through the question thoroughly before checking on the solutions or answers. It is also recommended that you discuss your responses with your colleagues or the field lecturer.
- In case of challenges in understanding the subject, you may interact with a lecturer in question through Moodle platform or during the real-time lectures conducted through the online teleconference software known as Zoom.

2.2.2 Practical

- All students studying science programmes are required to attend science practical in specialized laboratories at OUT Kinondoni, Regional Centre.

2.2.3 Teaching practice

- All students studying Bachelor of Science with education programme are required to attend teaching practice for period of 4 weeks as provided in the almanac.

2.2.4 Attendance

- Students are required to attend orientation, all scheduled zoom classes, teaching practice and science practical.

2.3 Examinations and Assessments

- Examinations are administered by the Directorate of Teaching and Learning and Examination Services (DTLES)
- Students enrolled on an undergraduate degree programme are assessed by coursework and examinations.
- The course work includes online Moodle assignments and the Main Test, both constituting 30% of the marks.
- The Annual Examination done at the end of the academic year carries 70% of the marks.
- students who fail to sit for the annual examination shall be eligible to sit for the special examination or on-demand examination depending on the timetable issued by the DTLES
- Students should sit for all registered main tests and examinations.

2.4 Eligibility to Sit for Main Test and Annual Examinations

- A student must pay the required tuition and examination fees.
- Must register for the examination four (4) weeks before the commencement of examination sessions.
- The student shall use the SARIS account to register for the examination.
- Only students registered for examinations shall be permitted to sit for the main test and the annual examination of the registered courses.
- Students are required to sit for examinations at the centres where they registered. In case of any emergency, the student may sit for the examination at any nearest OUT centre provided that they have a student ID and a hall ticket for the registered examinations.

2.5 Supplementary and Repeat of Examinations

- A student who fails to obtain a pass mark of 40% for both coursework and annual examination shall be required to sit for the supplementary examination.
- A student who fails to clear the supplementary examination will be required to repeat the course by doing both the main test and the annual examination.
- A student repeating the examination is required to pay a new tuition and examination fee for that particular course.

2.6 Examination Regulations

- Students are not allowed to sit for an examination if they have not registered for the examination in question or completed the proper course or have not settled any fees due to the university.

- Students should read the examination timetable carefully and take note of the dates, times and venues of examinations.
- Students should arrive at the examination venue at least 30 minutes before the scheduled time of the examination. Once they enter the examination venue, they should sit according to the seating plan provided.
- Students will not be allowed to enter the examination venue after the first 30 minutes of the examination.
- Students are not allowed to leave the examination venue after they enter the examination venue during the first 30 minutes after the examination has started (except with the permission of the Chief Invigilator).
- Students should bring their Student ID Card and hall ticket and put them at the top right-hand corner of the desk throughout the examination. Students without any such identification may not be allowed to sit for the examination.
- Before entering the examination venue, students should make sure that unauthorized articles/items (e.g. books, manuscripts, notes, paper and all kinds of electronic/communication devices such as mobile phones, iPod, MP3 players, electronic dictionaries, databank watches) are taken out from their pockets and placed inside their bags. Mobile phones/electronic devices must be turned off.
- Once they have entered the examination venue, students should place their bags at a place directed by the Chief Invigilator.
- Students must not turn over the pages of the examination question paper and should not start working until they are instructed to do so.
- Students should remain silent once they enter the examination venue. They must not talk to each other or disturb other students. If they have questions, they should put up their hands and wait patiently for an invigilator.
- Students wish to leave the examination venue temporarily during an examination session should only leave with the invigilator's permission.
- Before a student leaves a venue, the invigilator has the right to check whether the student has placed any unauthorized articles/items in his/her pocket(s).
- Students completed their examination and wish to leave the venue early during an examination session should submit their booklet to

the chief invigilator and sign the examination attendance and the master list.

- A student found to have committed an act of academic dishonesty such as plagiarism, submission of material(s) for assessment, which is not the student's own work, the use of fabricated or copied data shall receive zero marks for the course. In addition, the case will be submitted to the examination irregularity Committee for further action.
- Students found to have committed academic dishonesty may be suspended or discontinued from studies at the OUT. (see prospectus)
- Students have the sole responsibility to ensure that the examination regulations are observed and complied with. Students who are found to have breached any of the examination regulations will be subject to penalty or disqualification.

2.7 Assessment Grading System

- Letter grades are used to indicate the results of assessments. The number of grade points gained by a student in a particular course corresponds to the letter grade.
- Grade A (i.e., A) indicates that a student has an excellent performance in all Intended Learning Outcomes (ILOs) and a thorough mastery of the subject matter.
- Grade B (i.e., B+ and B) indicates that a student has a good performance in all ILOs and is competent in knowledge of the subject matter, or the student has an excellent performance in the majority of the ILOs and is competent in knowledge of the subject matter.
- Grade C (i.e., C) indicates that a student has a satisfactory performance in all ILOs and an acceptable level of knowledge of the course;
- Grade D indicates that a student has a satisfactory but does not allow him/her to proceed to more advanced work in the subject area.
- Grade E indicates unsatisfactory performance in the majority of the ILOs.
- Grade F indicates total fail.

2.8 Grade Point Average (GPA)

- The Grade Point Average (GPA) is an important indicator of the academic standing of a student. It is obtained by adding all the

grade points gained and dividing the sum by the number of attempted units.

- Students must obtain a passing grade in all courses required in the programme.

Grading system for Diploma and certificates approved by NACTE

NACTE Grading System for Certificate & Diploma				
NACTE NTA Level	Score Range	Grade	Grade Point	Definition
NTA Level 4 & NTA Level 5	80-100	A	4	Excellent
	65-79	B	3	Good
	50-64	C	2	Pass
	40-49	D	1	Poor
	0-39	F	0	Failure
	-	I	0	Incomplete
	-	Q	0	Disqualification
NTA Level 6	75-100	A	5	Excellent
	65-74	B+	4	Very Good
	55-64	B	3	Good
	45-54	C	2	Average
	35-44	D	1	Poor
	0-34	F	0	Failure
	-	Q	0	Disqualification

Grading system for Diploma and Certificates approved by TCU

TCU Grading System for Certificate & Diploma					
Marks (%)	80-100	65-79	50-64	40-49	0-39
Letter Grade	A	B	C	D	E
Grade Points	4.0-5.0	3.0-3.9	2.0-2.9	1.0-1.9	0-0.9
Remarks	Excellent	Good	Satisfactory	Poor	Failure

Grading system for Bachelor's Degree programmes approved by TCU

Marks(%)	70-100	60-69	50-59	40-49	35-39	0-34
Letter Grade	A	B+	B	C	D	E
Grade Points	5	4	3	2	1	0
Remarks	Excellent	Very Good	Good	Pass	failure	failure

2.9 Academic Results

- Students' academic results are officially posted to students' SARIS accounts immediately after the marking is complete. Hence, candidates can promptly access their results through SARIS accounts.

- Students should report any missing or inaccuracy or inconsistency in the academic records immediately after the release of the results.
- The request for missing results should be made by email to the head of departments through directors of regional centres for easy follow up.

2.10 Course Exemption

Students who graduated from the OUT-foundation programme and selected to study a degree programme at the OUT are exempted from taking OCP 100 and OFP 017. The grades obtained from OFP shall be automatically transferred to the degree programme.

Students who prefer instead to register for the undergraduate courses OFC 017 and OCP 100 should do online course registration and pay the required tuition and examination fees as prescribed in the SARIS invoice printout.

2.11 Graduation Requirements

Students are approved for graduation by the Senate after fulfilling all the graduation requirements stipulated by the university. These requirements include general university requirements, programme requirements, unit and grade point average requirements.

3.0 STUDENT SUPPORT SERVICES

3.1 OUT Regional Resource Centers

- Regional centres form a component of the administrative structure of The Open University of Tanzania. They are located in all regions of Tanzania, Mainland and Zanzibar.
- Roles of the regional centres include, but are not limited to, administrative activities such as application processes, issuing admission letters, registration, organizing orientation, examination venues, examination invigilation, tutoring and counselling, providing teaching and learning facilities, organizing public lectures, discussion groups, workshops and seminars and dissemination of information about The Open University of Tanzania programmes.

3.2 Institute of Education Information Management and Technology (IEMT)

- The IEMT is the primary information technology provider for the OUT. Services provided by the IEMT include the maintenance of the University's Information technology network and website,

email services, installation of hardware and software, supporting faculties and departments to maintain and use ICT equipment, maintaining an e-learning management system in enhancing academic activities, supervision of admission and registration system.

- The HQ and all regional centres are connected with free internet to facilitate teaching and learning activities.
- The IEMT conducts tailor-made training for students to improve ICT skills.
- All students are required to have IT gadgets such as smartphones and laptops.

3.3 Supplementary Reading Materials

In addition to the study units and essential reading texts, important books are recommended to students in each area of study. This enables students to see alternative views on the subject or to reinforce the information presented in the study units. Your attention should be drawn to the updates in materials and information.

3.3.1 Library Facilities

- OUT Library Services comprises the main library at the head office at Kinondoni Dar es Salaam and mini-libraries in the regional centres.
- The library is a place for study and provides reading materials in both hard and soft copies to supplement your study materials.
- Membership and access to library services is open to all undergraduate students.
- Library opens from Monday to Friday from 08.45 a.m. to 9.00 p.m. Saturday 10.00 a.m. to 9.00 p.m. and Sundays and Public Holidays 10.00 a.m. to 2.00 for main library. For regional centres mini libraries, the time is 8.00 am to 4.00 pm.
- Services offered at the library include; - e-library services, information literacy training, reading and studying facilities, leading books and other documents, reference services, newspapers and internet services.
- More details on how to access materials are provided in the Directorate speech.

3.3.2 Information Service

- The university almanack lists all academic events and their schedules.

- Examination timetable
- Real-time zoom lectures timetable
- Client service charter

3.4 Students with special needs

- The OUT has a special unit for helping students with special needs. The unit is located at the head office, Kinondoni. Dar es salaam.
- The services offered include ICT literacy training, whereby students with special needs are facilitated to access study materials and communicate with each other.
- At the regional centres, OUT staff provide special services to special needs students.

4.0 DEPARTMENT OF BIOLOGICAL AND FOOD SCIENCES

4.1 Degree Programmes

4.1.1 *B.Sc. Food, Nutrition and Dietetics*

Level I: all core courses plus elective at any level to make 38 units

Code	Name	Status	Credits	Units
OFC 017	Communication skills	Core	10	1
OCP 100	Introduction to Microcomputer Studies and Information Technology	Core	10	1
OFD 100	Human Nutrition & Dietetics	Core	10	1
OFD 101	Principles of Nutritional Biochemistry	Core	10	1
OFD 102	Foundation Chemistry	Core	20	2
OFD 103	Human Anatomy & Physiology	Core	10	1
OFD 104	Food Microbiology & Safety	Core	20	2
OFD 106	Introduction to Molecular Biology	Elective	10	1
OFD 208	Essentials of Food Science	Core	10	1
OFD 206	Food Processing and preservation	Elective	10	1
OFD 307	Food, Nutrition and Dietetics Practical	Core	20	1

Level II

Code	Name	Status	Credits	Units
OFD 200	Community health and health promotion	Core	10	1
OFD 201	Nutritional Diseases and Applied Dietetics	Core	20	2
OFD 202	Nutritional epidemiology, assessment and surveillance	Core	20	2
OFD 203	Food Chemistry & Analysis	Core	20	2
OFD 204	Statistics & Research methods	Core	20	2
OFD 211	Nutrition through life cycle	Core	10	1
OFD 212	Nutritional anthropology	Core	10	1
OFD 207	Consumer Behaviour and Education	Elective	10	1
OFD 210	Sensory evaluation of foods	Elective	10	1

OFD 304	Field placements	Core	2	1
OFD 307	Food, Nutrition and Dietetics Practical	Core	20	2

Level III

Code	Name	Status	Credits	Units
OFD 309	Food and Nutrition Security	Core	20	2
OFD 301	Food safety, hygiene & Legislation	Core	20	2
OFD 302	Planning and Management of Nutritional Interventions	Core	10	1
OFD 304	Field placements	Core	10	1
OFD 305	Individual Research Project	Core	10	1
OFD 307	Food, Nutrition and Dietetics Practical	Core	20	2
OFD 306	Meal planning and Institutional catering	Core	20	2
OFD 308	Fundamentals of guidance and counseling	Elective	20	2
OME 312	Entrepreneurship & Business Development	Elective	20	2
OPD 202	Gender and Development	Elective	20	2
OSS 124	Introduction to social psychology	Elective	20	2

Total units = 38

4.1.2 Bachelor of Science (B.Sc.) GENERAL

Clusters for Major in Mathematics

Level I

Code	Name	Status	Credit	Units
OFC 017	Communication Skills	core	10	1
OCP 100	Introduction to Microcomputer Studies	core	10	1
OMT 151	Mathematical Analysis I & II	core	20	2
OMT 152	Linear Algebra I & II	core	20	2
OMT 153	Probability and Statistics, I & II	core	20	2
	OMT 154: Informatics & Programming Languages	core	20	2

Level II

OMT 203	Advanced Calculus	core	10	1
OMT 205	Differential Equations	core	10	1
OMT 251	Methods & Partial Differential Equations	core	20	2
OMT 252	Numerical Analysis I & II	elective	20	2
OMT 225	Applied Vector Theory	elective	10	1
OMT 255	Real Analysis I & II	core	20	2

Level III

OMT 324	Complex Analysis	1	Core
OMT 351	Abstract Algebra I & II	3	Elective

Clusters for Minor in Mathematics

Level I

Code	Name	Status	Credit	Units
OMT 151	Mathematical Analysis I & II	Core	20	2
OMT 152	Linear Algebra I & II	Core	20	2
OMT 153	Probability and Statistics, I & II	Core	20	2
OMT 154	Informatics & Programming Languages	Core	20	2

Level II

OMT 205	Differential Equations	Core	10	1
OMT 252	Numerical Analysis I & II	Elective	20	2
OMT 225	Applied Vector Theory	Elective	10	1

Level III

OMT 324	Complex Analysis	Core	10	1
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Clusters for Double Major in Mathematics

Level I

Code	Name	Status	Credit	Status
OFC 017	Communication Skills	Core	10	1
OFC 017	Introduction to Microcomputer Studies	Core	10	1
OMT 151	Mathematical Analysis I & II	Core	20	2
OMT 152	Linear Algebra I & II	Core	20	2
OMT 153	Probability and Statistics, I & II	Core	20	2
OMT 154	Informatics & Programming Languages	Core	20	2

Level II

OMT 203	Advanced Calculus	Core	10	1
OMT 205	Differential Equations	Core	10	1
OMT 251	Methods & Partial Differential Equations	Elective*	20	2
OMT 252	Numerical Analysis I & II	Elective*	20	2
OMT 253	Survey and Quality Control	Elective*	20	2
OMT 209	Fluid Mechanics I	Core	10	1
OMT 216	Operational Research I	Elective*	10	1
OMT 217	Number Theory I	Core	10	1
OMT 225	Applied Vector Theory	Elective*	10	1
OMT 255	Real Analysis I & II	Core	20	2
OMT 254	Advanced Statistics, Design and Analysis of Experiment	Elective*	20	2

Level III

OMT 303	Measure Theory	Core	10	1
OMT 304	Differential Geometry	Elective*	10	1
OMT 305	Topology I	Core	10	1

OMT 352	Test of Hypothesis & Theory of Estimation	Elective*	20	2
OMT 324	Complex Analysis	Core	10	1
OMT 351	Abstract Algebra I & II	Elective*	30	3

PHYSICS

Clusters of Physics Major Courses

Level I

Code	Name	Status	Credit	Unit
OFC 017	Communication Skills	Core	10	1
OCP 100	Introduction to Microcomputer Studies	Core	10	1
OPH 151	Introductory University Physics	Core	30	3
OPH 152	Electromagnetism I & II	Core	20	2
Level II Clusters				
OPH 251	Mathematical Physics	Core	20	2
OPH 252	Optics	Core	20	2
OPH 208	Thermal Physics II	Core	10	1
Level III Clusters				
OPH 351	Physics of the Atom	Core	20	2
OPH 352	Quantum Theory of Solids	Core	20	2
OPH 411	Applied Earth Physics	Elective	30	3
OPH 441	Analog Electronics	Core	20	2
OPH 442	Digital Electronics	Elective	20	2
OPH 443	Microelectronics	Elective	20	2
OPH 350	Physics Practical	Core	10	1
OPH 305	Physics Special Project	Core	10	1

Clusters of Physics Minor

Level I

Code	Name	status	Credit	Units
OPH 151	Introductory University Physics	Core	30	3
OPH 152	Electromagnetism I & II	Core	20	2
OPH 251	Mathematical Physics	elective	20	2
Level II				
OPH 252	Optics	Core	20	2
OPH 208	Thermal Physics II	elective	10	2
OPH 351	Physics of the Atom	Core	20	2
Level III				
OPH 352	Quantum Theory of Solids	Elective	20	2
OPH 411	Applied Earth Physics	Elective	30	2
OPH 441	Analog Electronics	Core	20	2
OPH 442	Digital Electronics	Elective	20	2
OPH 443	Microelectronics	Elective	20	2
OPH 350	Physics Practical	Core	10	2

CHEMISTRY

Clusters for Chemistry Major

Level I

Code	Name	status	credit	Units
OFC 017	Communication Skills	Core	10	1
OCP 100	Introduction to Microcomputer Studies	Core	10	1
OCH 151	General and Physical Chemistry	Core	20	2
OCH 152	Organic Chemistry	Core	20	2
OCH 104	Systematic Inorganic Chemistry	Core	10	1
OCH 105	Chemical Thermodynamics	Core	10	1

Level II

OCH 251	Organic Spectroscopy	Elective	20	2
OCH 252	Organic Reaction Mechanism	Core	20	2
OCH 253	Advanced Inorganic Chemistry	Core	30	3
OCH 206	Chemical Bonding	Core	10	1
OCH 254	Analytical Chemistry	Core	20	2
OCH 255	Natural Products & Carbohydrates Chemistry	Elective	20	2

Level III

OCH 351	Chemical Kinetics & Electrochemistry	Core	20	2
OCH 303	Industrial Organic Chemistry	Elective	10	2
OCH 309	Theoretical Chemistry	Elective	10	1
OCH 350	Chemistry Practical	Core	10	2
OCH 307	Chemistry Special Project	Core	10	3

Clusters for Chemistry Minor

Level I

Code	Name	status	credit	Units
OCH 151	General and Physical Chemistry	Core	20	2
OCH 152	Organic Chemistry	Core	20	2
OCH 104	Systematic Inorganic Chemistry	Core	10	1
OCH 105	Chemical Thermodynamics	Core	10	1

Level II

OCH 251	Organic Spectroscopy	Elective	20	2
OCH 252	Organic Reaction Mechanism	Elective	20	2
OCH 253	Advanced Inorganic Chemistry	Elective	30	3
OCH 206	Chemical Bonding	core	10	1
OCH 254	Analytical Chemistry	core	20	2
OCH 255	Natural Products & Carbohydrates chemistry	Elective	20	2

Level III

OCH 351	Chemical Kinetics & Electrochemistry	core	20	2
OCH 303	Industrial Organic Chemistry	Elective	10	1
OCH 309	Theoretical Chemistry	Elective	10	1
OCH 350	Chemistry Practical	core	10	1

BIOLOGY

Clusters for Biology Major

Level I

Code	Name	status	credit	Units
OFC 017	Communication Skills	Core	10	1
OCP 100	Introduction to Microcomputer studies and information Technology I	Core	10	1
OBL 101	Biological Techniques	Core	10	1
OBT 151	Diversity of Plants and Fungi	Core	30	3
OZL 151	Diversity of Animals	Core	30	3
OBL 151	Cell Biology	Core	20	2
OBL 152	Fundamentals of Physiology		30	3
OBL 251	Microbes & Microbial Genetics	Core	20	2
OBL 350A	Biology Practical		*	*

Level II

OBT 251	Plant Structure and Development	Elective	30	3
OBL 204	Soil Science	Core	10	1
OZL 205	Developmental Biology	Core	10	1
OZL 208	Immunology	Elective	10	1
OBT 252	Plant Biochemistry & Metabolism	Elective	20	2
OBL 202	Genetics	Elective	10	1
OZL 251	Aquatic & Estuarine Biology	Elective	30	3
OBL 301	Taxonomy	Core	10	1
OBL 350B	– Biology Practical		*	

Level III

OBL 302	Biostatistics	Core	10	1
OBT 351	Plant and Crop Physiology	Elective	20	2
OZL 351	Principles of Ecology	Core	20	2
OBL 306	Evolutionary Biology	Core	10	1
OBL 350C	Biology Practical	Core	10	1
OBL 314	Biology Special Project	Core	10	1

* OBL 350 A, OBL 350 B and OBL 350B gives a total of 10 credits, equivalent to 1 unit

Clusters for Biology Minor

Level I

Code	Name	status	credit	Unit
OBL 101	Biological Techniques	Core	10	1
OBL 151	Cell Biology	Core	20	2
OZL 151	Diversity of Animals	Core	30	3
OZL 152	Fundamentals of Physiology	Elective	30	3
OBL 251	Microbes & Microbial Genetics	Elective	20	2
OBL 350A	Biology Practical		*	*

Level II

OBL 251	Plant Structure and Development	Elective	30	3
OBT 151	Diversity of Plants and Fungi	Core	30	3
OBL 204	Soil Science	Elective	10	1
OZL 205	Developmental Biology	Elective	10	1
OZL 208	Immunology	Elective	10	1
OBT 252	Plant Biochemistry & Metabolism	Elective	20	2
OBL 202	Genetics	Core	10	1
OZL 251	Aquatic & Estuarine Biology	Elective	30	3
OBL 301	Taxonomy	Elective	10	1
	OBL 350B – Biology Practical		*	

Level III

OBL 302	Biostatistics	Core	10	1
OBL 302	Plant and Crop Physiology	Elective	20	2
OZL 351	Principles of Ecology	Elective	20	2
OBL 306	Evolutionary Biology	Elective	10	1
OBL 350C	Biology Practical	Core	10	1
OBL 314	Biology Special Project	Core	10	1

BOTANY**Clusters for Botany Major****Level I**

Code	Name	Status	Credit	Units
OFC 017	Communication Skills	Core	10	1
OCP 100	Introduction to Microcomputer studies and information Technology I	Core	10	1
OBL 101	Biological Techniques	elective	10	1
OBT 151	Diversity of Plants and Fungi	Core	30	3
OBL 151	Cell Biology	Core	20	2
OBL 251	Microbes & Microbial Genetics	elective	20	2
OBT 350A	Botany Practical		*	

Level II

OBT 251	Plant Structure and Development	Core	30	3
OBT 252	Plant Biochemistry & Metabolism	Core	20	2
OBL 202	Genetics	elective	10	1
OBL 204	Soil Science	elective	10	1
OBL 301	Taxonomy	Core	10	1
OBT 350B	Botany Practical		*	

Level III

OBT 351	Plant and Crop Physiology	Core	20	2
OZL 351	Principles of Ecology	Core	20	2
OBL 302	Biostatistics	Core	10	1

OBT 309	Plant Breeding	elective	10	1
OBL 306	Evolutionary Biology	elective	10	1
OBT 350C	Botany Practical	Core	10	1
OBT 306	Botany Special Project	Core	10	1

Clusters for Botany Minor

Level I

Code	Name	Status	Credit	Units
OBL 101	Biological Techniques	Elective	10	1
OBT 151	Diversity of Plants and Fungi	Core	30	3
OBL 151	Cell Biology	Elective	20	2
OBL 251	Microbes & Microbial Genetics	Elective	20	2
OBT 350A	Botany Practical		*	*

Level II

OBT 251	Plant Structure and Development	Core	30	3
OBT 252	Plant Biochemistry & Metabolism	Elective	20	2
OBL 202	Genetics	Elective	10	1
OBL 204	Soil Science	Elective	10	1
OBL 301	Taxonomy	Core	10	1
OBT 350B	Botany Practical		*	*

Level III

OBT 351	Plant and Crop Physiology	Core	20	2
OZL 351	Principles of Ecology	Elective	20	2
OBL 302	Biostatistics	Core	10	1
OBT 309	Plant Breeding	Elective	10	1
OBL 306	Evolutionary Biology	Elective	10	1
OBT 350C	Botany Practical	Core	10	1
OBT 306	Botany Special Project	Core	10	1

ZOOLOGY

Clusters for Zoology Major

Level I

Code	Name		Credit	Units
OFC 017	Communication Skills	Core	10	1
OCP 100	Introduction to Microcomputer studies and information Technology I	Core	10	1
OZL 151	Diversity of Animals	Core	30	3
OBL 101	Biological Techniques		10	1
OBL 151	Cell Biology	Core	20	2
OZL 152	Fundamentals of Physiology	Core	30	3
OBL 251	Microbes & Microbial Genetics	Core	20	2
OZL 350A	Zoology Practical		*	*

Level II				
OBL 202	Genetics	Elective	10	1
OZL 205	Developmental Biology	Core	10	1
OZL 208	Immunology	Elective	10	1
OBL 301	Taxonomy	Core	10	1
OZL 251	Aquatic & Estuarine Biology	Elective	30	3
OZL 350B	Zoology Practical		*	*
Level III				
OBL 302	Biostatistics	Core	10	1
OBL 306	Evolutionary Biology	Core	10	1
OZL 351	Principles of Ecology	Core	20	2
OZL 352	Entomology & Parasitology	Elective	20	2
OZL 310	Animal Behaviour	Elective	10	1
OZL 350C	Zoology Practical	Core	10	1
OZL 314	Zoology Special Project	Core	10	1

Clusters for Zoology Minor

Level I

Code	Name	Status	Units	units
OZL 151	Diversity of Animals	Core	30	3
OBL 101	Biological Techniques	Elective	10	1
OBL 151	Cell Biology	Core	20	2
OZL 152	Fundamentals of Physiology	Elective	30	3
OBL 251	Microbes & Microbial Genetics	Elective	20	2
OZL 350A	Zoology Practical			

Level I

OBL 202	Genetics	Core	10	1
OZL 205	Developmental Biology	Core	10	1
OZL 208	Immunology	Core	10	1
OBL 301	Taxonomy	Elective	10	1
OZL 251	Aquatic & Estuarine Biology	Elective	30	3
OZL 350B	Zoology Practical	Core	10	1

Level III

OBL 302	Biostatistics	Core	10	1
OBL 306	Evolutionary Biology	Core	10	1
OZL 351	Principles of Ecology	Elective	20	2
OZL 352	Entomology & Parasitology	Elective	20	2
OZL 310	Animal Behaviour	Elective	10	1
OZL 350	Zoology Practical	Core	10	1
OZL 314	Zoology Special Project	Core	10	1

HOME ECONOMICS

Clusters of Double Major Home Economics Courses

Level I

Code	Name	status	Credit	Unit
OFC 017	Communications skills	Core	10	1
OCP 100	Introduction to Microcomputer Studies and Information Technology	Core	10	1
OHE 151	Biological Sciences for Home Economics	Core	20	2
OHE 152	Physical Science for Home Economics	Core	20	2
OHE 153	Clothing Construction	Core	20	2
OHE 154	Textile I & II	Elective	20	2
OHE 155	Foods & Nutrition	Core	20	2
OHE 156	Home Management	Core	20	2

Level II

OHE 115	Human Anatomy & Physiology	Core	10	1
OHE 251	Meal Planning & Institutional Catering	Core	20	2
OHE 252	Principles of Economics & Consumer Education	Elective	20	2
OHE 253	Household Equipment & Home Furnishing	Core	30	3
OHE 112	Food Science in the Home	Core	10	1
OHE 204	Community Health	Elective	10	1
OHE 254	Therapeutic Diet & Community Nutrition	Core	20	2
OHE 255	Child Development & Family Education	Elective	20	2

Level III

OHE 351	Rural Sociology & Gender Issues		20	2
OHE 352	Statistics & Research Methods for Home Economics	Core	20	2
OHE 353	Extension Education Methods.	Core	20	2
OHE 350	Home Economics Pratical	Core	20	2
OHE 307	Home Economics Special Project	Core	10	1

Clusters of Single Major Home Economics Courses

Level I

Code	Name	Status	Credit	Units
OHE 151	Biological Sciences for Home Economics	Core	20	2
OHE 154	Textile I & II	Elective	20	2
OHE 155	Foods & Nutrition	Core	20	2
OHE 156	Home Management	Core	20	2

Level II

OHE 112	Food Science in the Home	Core	10	1
OHE 251	Meal Planning & Institutional Catering	Core	20	2
OHE 254	Therapeutic Diet & Community Nutrition	Core	20	2
OHE 255	Child Development & Family Education	Core	20	2

Level III

OHE 352:	Statistics & Research Methods for Home Economics	Core	20	2
OHE 352	Home Economics Practical for Bed	Core	10	1

Total units required is 36

5.0 DEPARTMENT OF MATHEMATICS AND ICT

5.1 Degree Programmes

5.1.1 B.Sc. in Information and Communication Technology (B.Sc. ICT)

Level I

Code	Course Name	Status	Credit	Units
OIT 131	Fundamentals of Information Systems	Core	10	1
OIT 132	Discreet Mathematics with Applications	Core	10	1
OIT 133	Probability and Statistics	Core	10	1
OIT 134	Communication Skills for IT	Core	10	1
OIT 135	Computer Architecture	Core	20	2
OIT 136	Programming in C	Core	20	2
OIT 137	Data Communications and Networking	Core	10	1
OIT 138	Database Design and Implementation	Core	20	2
OIT 139	Industrial Training 1	Core	20	2
Total			130	13

Level II

Code	Course Name	Status	Credit	Units
OIT 231	Operating Systems	Core	20	2
OIT 232	Systems Analysis and Design	Core	20	2
OIT 233	Inventory Models and Queuing Theory	Core	10	1
OIT 234	Object Oriented Programming with JAVA	Core	20	2
OIT 235	Wireless Networks and Mobile Computing	Core	20	2
OIT 236	Computer Security	Core	10	1
ODM 212	Data Mining Techniques and Application	Core	20	1
OIT 237	Web Programming	Core	10	1
ODM 207	Fundamentals of GIS	Core	20	2
OIT 238	Industrial Training II	Core	20	2
Total			160	16

Level III

Code	Course Name	Status	credit	Units
OIT 331	Information Systems Management	Core	10	1
OIT 332	Network Design and Administration	Core	10	1
OIT 333	Computer Ethics and Social Cultural Implication	Core	10	1
ODM 209	Cross cutting issues	Core	10	1
ODM 211	E-Commerce and Entrepreneurship	Core	10	1

OIT 334	Final Year Project	Core	30	3
Total			80	8

Elective courses (*Select two elective courses*)

Code	Course Name	Status	Credit	Units
ODM 301	Multimedia Technologies	Elective	10	1
ODM 201	Graphics Processing & Human Computer Interaction	Elective	10	1
OIT 335	Programming in C++	Elective	10	1
ODM 204	Enterprise Resource Planning (ERP) Systems	Elective	20	2
Total				

Total units 40

5.1.2 B.SC. In Data Management (B.SC. DM)

Level I

Code		Status	Credits	Units
OIT 131	Fundamentals of Information Systems	Core	10	1
OIT 132	Discreet Mathematics with Applications	Core	10	1
OIT 133	Probability and Statistics	Core	10	1
OIT 134	Communication Skills for IT	Core	10	1
ODM 108	Data Structures and Algorithm	Core	20	2
ODM 103	Introduction to Computer Programming Languages	Core	10	1
ODM 105	Data Governance in Organizations	Core	10	1
OIT 138	Database Design and Implementation	Core	20	2
OIT 231	Operating Systems	Core	10	1
OIT 139	Industrial Training 1	Core	20	2
Total			130	13

Level II

Code	Programme name	Status	Credits	Units
ODM 201	Graphics Processing & Human Computer Interaction	Core	10	1
ODM 204	Enterprise Resource Planning (ERP) Systems	Core	20	2
ODM 206	Research Methods & Data Analysis	Core	20	2
ODM 207	Fundamentals of GIS	Core	10	1
ODM 209	Cross cutting issues	Core	10	1
ODM 211	E-Commerce and Entrepreneurship	Core	10	1
ODM 212	Data Mining Techniques and Application	Core	20	2
OIT 137	Data Communications and Networking	Core	10	1
OIT 233	Inventory Models and Queuing Theory	Core	10	1
OIT 238	Industrial Training II	Core	20	2
Total			140	14

Level III

Code	Course Name	Status	Credit	Units
ODM 301	Multimedia Technologies	Core	10	1
ODM 308	Data Security	Core	20	2
OIT 333	Computer Ethics and Social Cultural Implication	Core	10	1
OIT 334	Final Year Project	Core	30	3
			70	7

Elective Courses *Select two elective courses*)

Code	Course name	Status	Credit	Units
ODM 304	Education Data Management and Digital Libraries	Elective	20	2
ODM 305	Health Data Management	Elective	20	2
ODM 306	Data in Agriculture Systems	Elective	20	2
ODM 307	Financial Data Management	Elective	20	2
ODM 309	Environment Data Management	Elective	20	2

Total units = 40

5.2 Non-degree programmes

5.2.1 Basic Certificate in Computing and IT - NTA Level 4

Code	Course name	Status	Credits	Units
IET 04101	Computer Fundamentals	Core	15	2
IET 04108	Computing Mathematics	Core	12	1
IET 04102	Office Automation Fundamentals	Core	9	1
IET 04107	Communication Skills	Core	9	1
IET 04110	Introduction to Entrepreneurship Skills	Core	15	1
Total				

Semester II

Code	Course name	Status	Credit	Units
IET 04203	Principles of Computer Support and Maintenance	Core	12	1
IET 04204	Introduction to Web Technologies	Core	9	1
IET 04205	Helpdesk Operations	Core	6	1
IET 04206	Network Essentials	Core	9	1
IET 04211	Practical Training	Core	18	2
IET 04209	Introduction to cross-cutting issues	Core	6	1
	Total			6

5.2.2 Technician Certificate in Computing and IT - NTA Level 5

Semester I

Code	Module Title	Status	Credit	Units
IET 05101	Computer Architecture and Systems	Core	12	1
IET 05103	Computing Mathematics	Core	9	1
IET 05104	Introduction to Programming	Core	12	1
IET 05105	Database Design and Implementation	Core	9	1
IET 05108	Business and Entrepreneurship Skills	Core	9	1
IET 05110	Cross-cutting issues: Environment, gender, HIV/AIDS, Poverty and Morals	Core	9	1
	Total			6

Semester II

Code	Title	Status	Credit	Units
IET 05202	Managing Computer Systems	Core	12	1
IET 05206	Website Design	Core	9	1
IET 05207	Network Design and Implementation	Core	9	1
IET 05209	Leadership and Management	Core	9	1
IET 05211	ICT in business process	Core	6	1
IET 05212	Industrial Training	Core	15	2
	Total			7

5.2.3 Ordinary Diploma in Computer Science - NTA level 6

Semester I

Code	Course name	Status	Credit	Units
IET 06101	Advanced Website Design	Core	12	1
IET 06102	System Analysis and Design	Core	12	1
IET 06104	Object Oriented Programming	Core	12	1
IET 06105	Database System Design and Administration	Core	12	1
IET 06106	System Administration	Core	12	2
	Total			

Modules – Semester II

Code	Course name	Status	Credit	Units
IET 06207	System Modelling	CORE	12	1
IET 06203	Network Management	CORE	12	1
IET 06209	Research Methodology	CORE	12	1
IET 06212	Multimedia Applications	CORE	15	2
IET 06213	Cross-cutting issues in ICT	CORE	9	1
IET 06308	Project Management	CORE	6	1
	Total			

Science Practical

The practical component of the degree programme is compulsory to all science students. The students are required to attend a full-time residential practical session for not less than two weeks. The courses with practical components include Zoology, Botany, Chemistry, Physics and Environmental Studies, Home Economics & and human Nutrition. In order to attend these practical sessions, students are required to register for the practical course in a particular academic year.

All practical sessions are conducted at the OUT premises, Kinondoni Regional Centre. Except, students pursuing BSc Home Economics and human nutrition and BSc Food, Nutrition and Dietetics will conduct their practical at Sokoine University of Agriculture (SUA). The schedule for practical shall be communicated before July every year. Details regarding the arrangements and the dates of the practical sessions will be obtained at each regional centre respectively. During the entire period of the practical sessions, students will be responsible for their travel, boarding and upkeep costs. It is therefore important that students sponsored by the Students' Loan Board process their requests ahead of time to avoid inconveniences caused by last minute arrangements.

The marks for practical are accumulated in the following codes: OBT 350 (Botany), OZL 350 (Zoology), OBL 350/314 (Biology), OHE 350 (Home Economics and Human Nutrition), OFD 307 (Food, Nutrition and Dietetics), OCH 320 (Chemistry), OEV 115 (Environmental Sciences) and OPH 320 (Physics). **Be informed that** these marks for a subject which is core to a respective student must have not less than 25 practicals while a minor should have not less than 15 practicals. Practical must be distributed in all levels (Level 1-3). This means that if student is taking **OBT 350** has to do **OBT 350A, OBT 350B and OBT350C** for year 1, 2, 3, respectively. NOTE that, The University is incurring a lot of expenses in the course of conducting practical. Therefore, students must register online for practical sessions. Any student failed to register will not be able to attend practical for that particular academic year.

6.0 DEPARTMENT OF PHYSICAL AND ENVIRONMENTAL SCIENCES

6.1 Degree Programmes

6.1.1 B.Sc. Environmental Studies (Management)

LEVEL I

Code	Name	status	credit	units
OCP 100	Computer Application in Environmental Studies	Core	10	1
OFP 017	Communication Skills	Core	10	1
OEV 101	Principles of Ecology	Core	10	1
OEV 112	Environmental Management, Ethics and Philosophy	Core	30	3
OEV 114	Land Use and Urban System Management	Core	30	3
OEV 116	Environmental Education and Communication	Core	20	2
Total Units			120	12

LEVEL II

OEV 201	Applied Statistics and Research Methods	Core	20	2
OEV 219	Natural Resources Management	Core	30	3
OEV 218	Environmental Pollution and Waste Management	Core	30	3
OEV 210	Environmental Economics	Core	20	2
OEV 209	Introduction to Remote Sensing and GIS	Core	20	2
Total			120	12

LEVEL III

OEV 301	Environmental Impact Assessment	Core	20	2
OEV 316	Environmental Policy and Law	Core	20	2
OEV 318	Environmental Resources & Development	Core	20	2
OEV 321	Environmental Field Project	Core	20	2
Total Units			80	8

6.1.2 B.Sc. Environmental Studies (Science)

Level I

Code	Name	status	credit	units
OCP 100	Computer Application In Environmental Studies	Core	10	1
OFP 017	Communication Skills	Core	10	1
OEV 101	Ecology	Core	20	2
OEV 113	Environmental Science	Core	30	3
OEV 107	General Biology	Core	20	2
OEV 115A	Environmental Science Practical	Core	10	1
Total Units			110	11

Level II

OEV 217	Environmental Analytical Methods	Core	20	2
OEV 201	Applied Statistics and Research Methods	Core	20	2

OEV 219	Natural Resources Management	Core	30	3
OEV 218	Environmental Pollution and Waste Management	Core	30	3
OEV 209	Introduction to Remote Sensing and GIS	Core	20	2
OEV 115B	Environmental Science Practicals	Core	10	1
Total Units			120	12

LEVEL III

OEV 301	Environmental Impact Assessment	Core	20	2
OEV 316	Environmental Policy and Law	Core	20	2
OEV 317	Water Resources Management	Core	20	2
OEV 321	Environmental Field Project	Core	20	2
Total Units			80	8

Elective courses

Level II

Code	Name	Status	Credit	Units
OEV 220	Environmental Geology, Hazards & Risk assessment	Electives	30	3
OEV 221	Aquatic Science and Limnology	Electives	30	3

Level III

OEV 319	Environmental Sociology and Gender Issues	Electives	30	3
OEV 320*	Environmental Modelling	Electives	30	3

Total units 38

*Not on offer

6.1.3 BACHELOR OF SCIENCE WITH EDUCATION

Education Courses for B.Sc. (Ed.) Students

Level I

Code	Course title	Status	Credit	units
OEP 101	Educational Psychology	Core	20	2
OEF 101	Philosophy of Educational and Teaching	Core	20	2
OEF 102	History and Sociological Aspects in Education	Elective	20	2
OEI 101	Curriculum Development and Evaluation	Core	20	2

Level II

OEI 208 (A and B)	Teaching Practice	Core	20	2
OEI 201	Teaching Methods for Physical Sciences	Core	20	2
OEI 207	Teaching Methods for Mathematics	Core	20	2
OEI 206	Teaching method for Applied Sciences	Core	20	2
OEI 202	Teaching Methods for Life Sciences	Core	20	2
OEM 201	Educational Management and Leadership	Core	20	2

Total the number of Education courses units for B.Sc. (Ed) is 12. Two Units will be taken for OCP 100 and OFC 017, Computer and Communication Skills respectively

CHEMISTRY COURSE STRUCTURE

LEVEL 1: Core courses

Code	Name	Status	Credit	Units
OCH 111	Physical Chemistry	Core	10	1
OCH 112	Inorganic Chemistry	Core	10	1
OCH 113	Organic Chemistry	Core	20	2
OCH 114*	Introductory Chemistry for Biology Students	Elective	10	1

Register to begin Chemistry Practical

OCH 320	Chemistry Practical	Core		
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Elective courses

Code	Name	Status	Credit	Unit
OCH 115	Aromaticity	Elective	10	1

***Not for Chemistry Major**

Level 2: Core Course

Code	Course Title	Status	Credit	Units
OCH 211	Basic Analytical Chemistry	Core	10	1
OCH 213	Advanced Inorganic Chemistry	Core	30	3

Continue for further Chemistry Practical

OCH 320	Chemistry Practical			
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Elective courses

Code	Name	Status	Credit	Units
OCH 212	Organic Spectroscopy	Elective	20	2
OCH 214	Organic Reaction Mechanism	Elective	10	1
OCH 215	Chemical Thermodynamics	Elective	10	1
OCH 216	Organic Stereochemistry	Elective	10	1
OCH 217	Chemistry of Natural Products	Elective	10	1
OCH 218	Forensic Chemistry	Elective	10	1
OCH 219	Medicinal Chemistry	Elective	10	1

LEVEL 3: Core courses

Code	Title	Status	Credit	Unit
OCH 311	Chemical Kinetics & Electrochemistry	Core	20	2
OCH 312	Instrumental Methods in Analytical Chemistry	Core	10	1
OCH 320	Chemistry Practical	Core	10	1

Elective courses

Code	Title	Status	Credit	Units
OCH 313	Nuclear Chemistry	Elective	10	1
OCH 314	Industrial Organic Chemistry	Elective	10	1
OCH 315	Theoretical Chemistry	Elective	10	1
OCH 316	Industrial Inorganic Chemistry	Elective	10	1
OBL 215*	Biochemistry	Elective	10	1
OCH 317	Chemistry Research Project	Elective	10	1

NOTE: **This course will be taken from the Life Sciences Department.

MATHEMATICS COURSE STRUCTURE**LEVEL 1: Core courses**

Code	course Title	Status	Credit	units
OMT 111	Mathematical Analysis	Core	20	2
OMT 112	Linear Algebra I –	Core	10	1
OMT 114	Probability and Statistics	Core	20	2
OMT 115	Introduction to Mathematical Logic and Set Theory	Core	10	1
Total			60	6

Elective courses

Code	Name	Status	credit	units
OMT 113	Linear Algebra II	Elective	10	1
OMT 116	History of Mathematics	Elective	10	1
Total			20	2

LEVEL 2: Core courses

Code	Name	Status	credit	units
OMT 221	Numerical Methods	Core	10	1
OMT 224	Ordinary Differential Equation	Core	10	1
OMT 225	Applied Vector theory	Core	10	1
OMT 228	Linear Programming	Core	10	1
OMT 230	Mathematical Programming with MATLAB	Core	10	1
Total			50	5

Elective courses

Code	Course Title	status	credit	Units
OMT 222	Numerical Analysis	Elective	10	1
OMT 223	Computer Programming	Elective	10	1
OMT 227	Real Analysis	Elective	20	2
OMT 229	Number Theory	Elective	10	1
OMT 231	Mathematical Methods	Elective	10	1
OMT 232	Advanced Calculus	Elective	10	1
OMT 233	Sample Survey and Quality Control	Elective	20	2
OMT 234	Advanced Statistics, Design and Analysis of Experiments	Elective	20	2
OMT 235	Discrete Mathematics	Elective	10	1
OMT 236	Fluid Mechanics	Elective	10	1

LEVEL 3: Core courses

Code	Name	Status	credit	units
OMT 324	Complex Analysis	Core	10	1
Total			10	1

Elective courses

Code	course Title	Status	Credit	units
OMT 331	Topology	Elective	10	1
OMT 332	Partial Differential Equations	Elective	10	1
OMT 334	Abstract Algebra	Elective	20	2
OMT 335	Mathematics Project	Elective	10	10
OMT 336	Measure Theory	Elective	10	10
OMT 337	Differential Geometry	Elective	10	10
OMT 338	Functional Analysis	Elective	10	10
OMT 339	Integer and Non-Linear Programming	Elective	10	10
OMT 340	Theory of Estimation and Tests of Hypothesis	Elective	20	20
OMT 341	Networks and Transportation Problems	Elective	10	10

PHYSICS COURSES STRUCTURE

LEVEL 1: Core courses

Code	Course Title	status	Credit	Units
OFC 017	Communication skills	Core	10	1
OCP 100	Computer Studies	Core	10	1
OPH 111	Fundamental Physics	Core	30	3
OPH 113	Mathematical Methods of Physics	Core	20	2
OPH 320	Physics Practical	Core	10	1
Total			90	9

Level 2: Core courses

Code	Course Title	Status	Credit	Units
OPH 112	Electromagnetism I & II	Core	20	2
OPH 216	Basic Electronics	Core	10	1
OPH 320	Physics Practical	Core		
	Total		30	3

Elective courses

Code	Course Title	Status	credit	units
OPH 211	Statistical Thermodynamics	Elective	20	2
OPH 213	Optics	Elective	20	2
OPH 214	Earth Physics	Elective	20	2
OPH 215	Analog Electronics	Elective	20	2

LEVEL 3: Core courses

Code	Name	Status	credit	Units
OPH 312	Physics of the atom	Core	20	2
OPH 321	Physics Research Project	Core	10	1
OPH 320	Physics Practical	Core	10	
	Total		40	

Elective courses

Code	Title	Status	Credit	units
OPH 311	Fundamentals of Material Science	Elective	10	1
OPH 313	Quantum Theory of Solids	Elective	20	2
OPH 314	Digital Electronics	Elective	20	2
OPH 315	Microelectronics	Elective	20	2
OPH 323	Environmental Physics	Elective	20	2
	Total			

NB: All science students must take one of the special projects from one teaching subject to complete the programme.

COURSES FOR INFORMATION AND COMPUTER STUDIES

Level I

Code	Title	Status	credit	Units
OIT 131	Fundamentals of Information Systems	Core	10	1
OIT 137	Data Communications and Networking I	Core	10	1
OIT 136	Algorithm and Programming in C	Core	20	2
OIT 138	Database Design and Implementation	Core	10	1
OIT 121	Application of Multimedia Technology in Learning	Core	10	1
OIT 122	Introduction to Computer Ethics and Community Impacts	Core	10	1
OIT 232	System Analysis and Design	Core	20	2

OIT 236	Computer Security	Core	10	1
OIT 220	Introduction to e-Business	Core	10	1
OIT 333	Computer Ethics and Social Culture	Core	10	1

COURSES FOR HOME ECONOMICS AND HUMAN NUTRITION

Level I

Course	Course title	Status	credit	Units
OHE 154	Textiles I & II	Core	20	2
OHE 155	Food & Nutrition	Core	20	2

Level II

OHE 156	Home Management	Core	20	2
OHE 112	Food Science in the Home	Core	10	1

Level III

OHE 254	Therapeutic Diet & Community Nutrition	Core	20	2
OHE 350	H/Economics & H/Nutrition Practical	Core	20	2
OHE 307	Special Project	Core	10	1

Please Note: Science education students are required to register in all courses indicated for respective subject specializations.

BIOLOGY COURSES STRUCTURE

Level I - Core Courses

Code	Title	Status	Credit	Units
OBL 111	Biological Laboratory Techniques	Core	10	1
OBL 112	Cell and Molecular Biology	Core	10	1
OZL 111	Animal Diversity	Core	20	2
OZL 112	Animal Anatomy and Physiology	Core	10	1
OBT 111	Diversity of Plants and Fungi	Core	20	2
OBL 314A	Biology Practical	Core	10	1
	Total			

Level I – Elective Courses

Code	Title	Status	credit	unit
OZL 113	Developmental Biology	Elective	10	1
OBT 113	Plant Taxonomy	Elective	10	1
OBL 113	Biochemistry and metabolism	Elective	20	2
OCH 114	Introductory Chemistry for Biology students	Elective	10	1

Level II - Core Courses

Code	Title	Status	Credit	Units
OBT 112	Plant structure and Development	Core	10	1
OBL 211	Fundamentals of Ecology	Core	10	1
OBL 212	Fundamental Genetics and Population Genetics	Core	10	1
OBL 213	Cell Microbiology and Immunology	Core	10	1
OBL 314B	Biology Practical	Core	10	1

Level II – Elective Courses

Code	Course Title	Status	credit	Units
OBL 214	Biometry	Elective	10	1
OBL 216	Research Methodology	Elective	10	1
OBL 217	Introduction to soil science	Elective	10	1
OBT 211	Plant Physiology	Elective	10	1
OZL 211	Animal Parasites and Vector Biology	Elective	10	1

Level III - Core Courses

Code	Course Title	Status	credit	Units
OBL 314C	Biology Practical	Core	10	1
OZL/OBT 314	Biology Special Project	Core	10	1

Level III – Elective Courses

Code	Course Title	Status	credit	Unit
OBL 211	Fundamentals of Ecology	Elective	10	1
OBL 311	Evolutionary Biology and Plant Evolution	Elective	10	1
OBL 312	Aquatic and Fish Biology	Elective	10	1

Total units for programme 38

6.1.4 Bachelor of Science in Energy Resources (BSc ER)

Level 1

Code	Name	status	Credit	Units
OFC 017	Communication skills	Core	10	1
OCP 100	Computer Studies	Core	10	1
OPH 111	Fundamental Physics	Core	30	3
OPH 112	Electromagnetism I and II	Core	20	2
OPH 320A	Physics Practical	Core	*	*
OMT 111	Mathematical Analysis	elective	20	2
OMT 114	Probability and Statistics	elective	20	2

Level 2

Code	Name	status	Credit	units
OMT 223	Computer Programming	Core	10	1
OPH 213	Optics	Core	20	2
OPH 214	Earth Physics	Core	20	2
OPH 311	Fundamentals of Material Science	Core	10	1
OPH 312	Physics of the Atom	Core	20	2
OPH 313	Digital Electronics	Core	20	2
OPH 320B	Physics Practical	Core	*	*
OMT 221	Numerical Methods	elective	10	1
OPH 215	Analog Electronics	elective	10	2

Level 3

Code	Name	Status	Credit	Units
OPH 322	Solar Energy	core	20	2
OPH 323	Environmental Physics	core	20	2
OPH 324	Wind Energy	core	20	2
OPH 325	Nuclear Energy	core	20	2
OPH 326	Non-conversional Energies	core	20	2
OPH 330	Energy Resources Practical	core	20	1
OPH 331	Energy Resources Final Project	core	10	1
OPH 320C	Physics Practical	core	*	*
OME 312	Entrepreneurship course	elective	20	2

**OPH 320A, B, C will accumulate to 10 credits (1 unit) after completion
Total units required for programme is 38.*

7.0 FEE STRUCTURE

7.1 Bachelor Degrees - Tuition fee (Payable to the University)

S/N	Programme	Total Number of Units	Total Units (Practical)	Total units	Fee (Theoretical)	Fee Practical	Registration fee	Student ID	Total Fee
1.	Bachelor of Science in Data Management	36	4	40	2,280,000	400,000	30,000	20,000	2,730,000
2.	Bachelor of Science in Energy Resources	36	2	38	2,280,000	200,000	30,000	20,000	2,530,000
3.	Bachelor of Science in Environmental Studies	36	2	38	2,280,000	200,000	30,000	20,000	2,530,000
4.	Bachelor of Science in Food, Nutrition and Dietetics	34	4	38	2,040,000	400,000	30,000	20,000	2,490,000
5.	Bachelor of Science General	34	2	36	2,040,000	200,000	30,000	20,000	2,290,000
6.	Bachelor of Science with Education	36	2	38	2,280,000	200,000	30,000	20,000	2,530,000
7.	Bachelor of Science in Information, Communication and Technology	36	4	40	3,240,000	400,000	30,000	20,000	3,690,000

PLUS

7.2 Direct University costs (Payable to the University)

No	Item	Amount	Remarks
1.	Examination fee	10,000	Paid per each examination both sitting and online
2.	TCU Quality assurance	20,000	Paid once for each academic year
3	On-demand examination	30,000	Paid for each on-demand examination requested

7.3 Diploma and Certificate fee

No	Programmes	Total Number of Units	practical	Total units	Fee (Theoretical)	Fee Practical	Registration fee	Student ID	Total Fee
1	Information Communication and Technology NTA 6	10	2	12	800,000	200,000	30,000	20,000	1,050,000
2	Information Communication and Technology NTA 5	10	2	12	800,000	200,000	30,000	20,000	1,240,000
3	Information Communication and Technology NTA 4	12	2	14	960,000	200,000	30,000	20,000	1,210,000

PLUS

7.4 Direct University costs (Payable to the University)

No	Item	Amount	Remarks
1	Examination fee	10,000	Paid per each examination both sitting and online
2.	TCU Quality assurance	20,000	Paid once for each academic year
3	On-demand examination	30,000	Paid for each on demand examination requested

7.5 Other charges payable to University

No	Item	Amount	Remarks
1	Repeating a course for degree programmes	140,000	120,000 for 2 units of a subject and 20,000 for Main test and annual examination
2	Repeating a course for non-degree programmes	60,000	40,000 per 1 unit and 20,000 for main test and annual examination.
3	Transcript	50,000	Paid after completion of studies
4	Statement of results	10,000	Paid upon request of statement of results
5	Appeal for examination results	80,000	Paid during appeal request
6	Reprinting lost certificate	30,000	Paid during request
7	Credit transfer	80,000	Paid during request
8	Change of programme	30,000	Paid during request
9	Graduation gown and booklet	55,000	Paid before graduation day.

7.6 Key to tuition fee

No	Title	Rate in Tshs
1	Theoretical courses degree programmes per unit	60,000
2	Practical courses degree programmes per unit	100,000
3	Theoretical courses for BSc ICT per unit	90,000
4	Practical courses for BSc ICT per unit	100,000
5	Theoretical courses for ICT NTA L 6, 5. 4 per unit	80,000
6	Practical courses for ICT NTA L 6, 5. 4 per unit	100,000
7	Theoretical courses for all non-degree programmes	40,000
8	Practical courses for all non-degree programmes	100,000

7.7 Charges payable to students' organization

No	Item	Amount	Remarks
1	Student organization fee	20,000	Paid every academic year

