



MAJOR-SPECIFIC STUDY & INTERN ABROAD PROGRAMS

63 Sicketown Road • West Nyack • New York • 10994 • United States of America
Ph. 1.212.931.9953 • Fx. 1.212.528.2095 • info@KEIabroad.org • www.KEIabroad.org

Course Offerings

FACULTY OF SCIENCE

University of Dar es Salaam

This file has been adapted from the University of Dar es Salaam (UDES) prospectus. Contact KEI for course descriptions and syllabi. Please be patient as it may take 2 to 6 weeks to obtain course descriptions (and syllabi when available). UDES does not have a digitized system for course information; so much of the work must be done manually and through direct contact with each professor.

Course Selection & Approval

UDES uses a very different system for course scheduling and registration. It is important to keep the following in mind when selecting your courses:

1. Not all courses listed in this file are offered each academic term.
2. Course availability and schedule for each academic term is made available by UDES only a couple of days before the semester starts.
3. Some courses may be cancelled after the first week of classes.

In general, the course selection process includes the following steps:

1. Select at least 10 (preferably more) courses for each semester of study. The more courses you select the better (and the quicker the process). Make sure to select courses that are offered during your semester of study; Semester 1 (Fall) and Semester 2 (Spring). Refer to other course files for more course options (<http://www.KEIabroad.org/programs/darsalaam/academics.php>).
2. Consult with your academic and/or study abroad advisor regarding your course selections. Obtain credit transfer approval from your university.
3. Inform your KEI Program Manager about your course selections.
4. KEI will check with UDES which courses will be offered during your semester of study. This process may take several weeks - sometimes longer.
5. KEI will inform you about which courses will be offered. It may be necessary to select additional courses.

Please speak with a KEI Program Manager before starting the course selection process. We will be glad to explain the education system at the University of Dar es Salaam and help you through the entire process.

DEPARTMENT OF BOTANY

B.Sc. (Ed.) four-year programme students should follow the 2004/2005 prospectus ;
(B.Sc. Ed.) three-year programme should follow the current prospectus course map

Common Courses for all Science students

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
DS 101:	Perspectives of Development I	2	1
DS 102:	Perspectives of Development II	2	2
IS 131:	Introduction to Informatics and Microcomputers	2	2
EV 200:	Environmental Science I*	2	1
DS 211:	Entrepreneurship, Small Business and Development	2	1
SC 215:	Scientific Methods	2	1

First Year (*Majors*)

BL 111:	Introductory Cell Biology and Genetics	3	1
BT 111:	Introductory Botany	2	1
MC111:	Fundamentals of Microbiology	2	1
ZL 121:	Invertebrate Zoology	2	1
WS 101:	Ecology and Utilization of Natural resources	2	1
BL 113:	Ecology I	2	2
BT 113:	Introduction to Plant Physiology	2	2
CL 107:	Communication Skills	3	2
ZL 124:	Developmental Biology	2	2

Second Year

BL 211:	Fundamentals of Soil Science	3	1
BT 213:	Taxonomy of Higher Plants	2	1
BT 215:	Introduction to Mycology	2	1
BL 213:	Ecology II	2	1
BL 214:	Biostatistics I	2	1

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
BT 217:	Plant Genetic and Evolution	2	2
BT 218:	Metabolic Physiology and Plant Growth	2	2
SC 215:	Scientific Methods	2	2
EV 200:	Environmental Science I	2	2

Third Year

BL 303:	Terrestrial Biology Field Course	1	1
BT 399:	Research Project	2	1
BT 321:	Applied Plant Physiology	2	1
BL 335:	Plant Breeding and Genetic Manipulation	1	1
BT 337:	Plant Tissue Culture	2	1
BT 343:	Physiology of Natural Products	2	1
BT 345:	Soil - Plant Relationships	2	1
EV 300:	Environmental Science II	2	1
BT 323:	Algal Ecology and Systematics	3	2
BT 327:	Anatomy of Angiosperms	2	2
BT 329:	Plant Ecology and Phytogeography	3	2
BT 333:	Plant Pathology	3	2
BT 341:	Economic Botany	2	2
BT 347:	Applied Ecology and Biodiversity	3	2
BT 314:	Biostatistics II	2	2

B. Sc. (EDUCATION) PROGRAMME

First Year (*Biology Core Courses*)

BL 111:	Introductory Cell Biology and Genetics	3	1
BT 111:	Introductory Botany	2	1
CH 113:	Chemistry for Life Sciences Students	3	1
ZL 121:	Invertebrate Zoology	2	1
	Education Courses	15	2

Second Year

	Education	15	1
BL 113:	Ecology I	2	2
BT 113:	Introduction to Plant Physiology	2	2
ZL 122:	Chordate Zoology	2	2
ZL 124:	Developmental Biology	2	2
ZL 210:	Vertebrate Anatomy and Physiology I	2	2

Third Year

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
BT 213:	Taxonomy of Higher Plants	2	1
ZL 228:	Parasitology I	2	1
ZL 302:	Evolution	2	1
ZL 211:	Vertebrate Anatomy and Physiology II	2	2
ZL 226:	Entomology I	2	2
BT 327:	Anatomy of Angiosperms	2	2
BL323:	Biology for Education Students	3	2

NB: Optional courses can be taken from other programmes.

DEPARTMENT OF MOLECULAR BIOLOGY AND BIOTECHNOLOGY

Common core courses for all Science students

B.Sc. (General) *Applied Microbiology Major*

First Year

BL 111:	Introduction to Cell Biology and Genetics	3	1
BT 111:	Introduction to Botany	2	1
MC111:	Fundamentals of Microbiology	2	1
ZL 121:	Invertebrate Zoology	2	1
WS101:	Ecology and Utilisation of Natural Resources	2	1
BL 113:	Ecology I	2	2
BT 113:	Introduction to Plant Physiology	2	2
CL 107:	Communication Skills	3	2
ZL 124:	Developmental Biology	2	2

Second Year

MC 205:	Microbial Nutrition and Metabolism	3	1
MC 206:	Food Microbiology and Processing	3	1
BT 215:	Introduction to Mycology	2	1
BL 214:	Biostatistics I	2	1
AQ 202:	Planktons Systematics and Ecology	2	1
BT 211:	Fundamentals of Soil Science	2	1
ZL 228:	Parasitology I	2	1
MC 207:	Medical Microbiology and Immunology	2	2
SC 215:	Scientific Methods	2	2
EV 200:	Environmental Science I	2	2

Third Year

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
BL 399:	Research Projects	2	1
MC 311:	Virology and Microbial Genetics	2	1
MC 307:	Microbial Ecology and Environmental Microbiology	3	1
MC 340:	Practical Training for Microbiology	2	1
BT 337:	Plant Tissue Culture	2	1
EV 300:	Environmental Science II	2	1
MC 303:	Applied Microbiology and Biotechnology	2	2
MC 310:	Applied Mycology	2	2
MC 308:	Soil Microbiology	2	2
MC 309:	Aquatic Microbiology	2	2
BT 333:	Plant Pathology	2	2
BL 314:	Biostatistics II	2	2

B. Sc. (MOL BIOL AND BIOTECH.)

First Year (*Double Major*)

BL 111:	Introduction to Cell Biology and Genetics	3	1
BN101:	Introduction to Biotechnology	3	1
BT 111:	Introductory Botany	2	1
CH 111:	Basic Analytical Chemistry	2	1
CH 121:	Chemistry Practicals I	2	1
DS 101:	Development Perspectives I	2	1
MC 111:	Fundamentals of Microbiology	2	1
BL 113:	Ecology I	2	2
BT 113:	Introduction to Plant Physiology	2	2
BN 102:	Biochemistry for Biotechnologists I	3	2
CH 116:	Organic Chemistry I	2	2
CH 122:	Chemistry Practicals II	2	2
IS 131:	Introduction to Informatics and Microcomputers	2	2
DS 102:	Development Perspectives II	2	2
BN 103:	Physics for Biotechnologists	2	2
BT 113:	Introduction to Plant Physiology	2	2
CL 107:	Communication Skills	3	2
ZL 124:	Developmental Biology	2	2

Second Year

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
BL 214:	Biostatistics	2	1
BN201:	Biochemistry for Biotechnologists II	2	1
BN202:	Molecular Biotechnology	2	1
BT 215:	Introduction to Mycology	2	1
MC206:	Food Microbiology and Processing	3	1
AQ 202:	Plankton and their Productivity	2	1
BT 217:	Plant genetics and Evolution	2	1
BT 218:	Metabolic Physiology and Plant Growth	2	1
CH 248:	Instrumental methods in Analytical Chemistry	3	1
ZL 226:	Entomology I	2	1
ZL 228:	Parasitology I	2	1
BN 203:	Practicals in Molecular Biotechnology	2	2
BN 204:	Advanced Food Microbiology	2	2
MC 207:	Medical Microbiology and Immunology	2	2
SC 215:	Scientific Methods	2	2
EV 200:	Environmental Science I	2	2

Third Year

BL 399:	Research Project	2	1
BN301:	Industrial Biotechnology	2	1
BT337:	Plant Tissue Culture	2	1
MC307:	Microbial Ecology and Environmental Microbiology	3	1
MC311:	Virology and Microbial Genetics	2	1
BN 340:	Practical Training for Molecular Biology & Biotechnology	2	1
BT 335:	Plant Breeding and Genetic Manipulation	2	1
ZL 318:	Endocrinology and Reproductive Physiology	2	1
BN 302:	Environmental Biotechnology	2	2
BN 303:	Agricultural Biotechnology	3	2
BN 304:	Fermentation Biotechnology	3	2
MC 310:	Applied Mycology	2	2
BL 314:	Biostatistics II	2	2
BN 305:	Biosafety, Biopolicy and Bioethics	1	2
BN 306:	Down Stream Processing in biotechnology	2	2
BT 333:	Plant Pathology	2	2
MC308:	Soil Microbiology	2	2

DEPARTMENT OF CHEMISTRY

(B.Sc. Ed. four-year programme follow the 2004/2005 prospectus
and B.Sc. Ed. three-years programme follow the current prospectus
course mapping)

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
<i>Common courses for all Science Students</i>			
DS 101:	Perspectives of Development I	2	1
DS 102:	Perspectives of Development II	2	2
IS 131:	Introduction to Informatics and Microcomputers	2	2
EV 200:	Environmental Science* I	2	1
DS 211:	Entrepreneurship, Small Business and Development	2	1
SC 215:	Scientific Methods	2	1
<i>B.SC. (GEN.) [Chemistry Major]</i>			
First Year			
CH 100:	Introduction to Physical Chemistry	2	1
CH 111:	Basic Analytical Chemistry	2	1
CH 116:	Organic Chemistry I	2	1
CH 121:	Chemistry Practicals I	2	1
CH 122:	Chemistry Practicals II	2	2
CH 170:	Introduction to Electronic Structure and Spectroscopy	2	2
CH 171:	Methods of Chemical Separation	2	2
Second Year			
CH 227:	Environmental Chemistry	1	1
CH 241:	Chemistry Practicals III	2	1
CH 248:	Instrumental Methods in Analytical Chemistry	2	1
CH 200:	Chemical Thermodynamics	2	2
CH 225:	Inorganic Chemistry I	2	2
CH 242:	Chemistry Practicals IV	2	2
CH 243:	Organic Chemistry II	3	2
Third Year			
CH 342:	Chemistry Practicals VI	2	1
CH 343:	Inorganic Chemistry II	3	1
CH 323:	Organic Spectroscopy	2	1
CH 345:	Quantum Chemistry	2	1
CH 344:	Chemical Kinetics and Electrochemistry	2	2

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
CH 341:	Chemistry Practicals V	2	2
CH 304:	Organic Synthesis	2	2
CH 305:	Chemistry of Natural Products	2	1
CH 308:	Polymer Chemistry	2	1
CH 310:	Industrial Organic Chemistry	2	2
CH 314:	Project Work	3	1
CH 315:	Surface and Colloidal Chemistry	2	1
CH 318:	Medicinal Chemistry	2	2
CH 329:	Industrial Inorganic Chemistry and Metallurgy	2	2
CH 351:	Forensic Chemistry	2	2
CH 353:	Biochemistry	2	2
CH 357:	Fuel Chemistry and Technology	2	2
CH 358:	Corrosion and Corrosion Prevention	2	2
CH 360:	Environmental Analytical Chemistry	2	1
CH 361:	Advanced Spectroscopy	2	2

B.Sc. (CHEM.) PROGRAMME

First Year

CH 100:	Introduction to Physical Chemistry	2	1
CH 111:	Basic Analytical Chemistry	2	1
CH 116:	Organic Chemistry I	2	1
CH 121:	Chemistry Practicals I	2	1
CH 191:	Theoretical Methods for Chemists	2	1
DS 101:	Development Perspectives I	2	1
CL 107:	Communication Skills for Science Students	2	1
CH 122:	Chemistry Practicals II	2	2
CH 170:	Introduction to Electronic Structure and Spectroscopy	2	2
CH 171:	Methods of Chemical Separation	2	2
CH 175:	Basic Inorganic Chemistry	2	2
MT 117:	Calculus for Science Students	2	2
DS 102:	Development Perspectives II	2	2
IS 131:	Introduction to Informatics and Microcomputers	2	2
CH 299:	Practical Training	2	2

Second Year

CH 241:	Chemistry Practicals III	2	1
CH 244:	Chemistry Practicals VII	2	1

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
CH 248:	Instrumental Methods in Analytical Chemistry	2	1
CH 271:	Structural Inorganic Chemistry	2	1
CH 292:	Chemical Kinetics and Catalysis	2	1
EV 200:	Environmental Science I	2	1
CH 200:	Chemical Thermodynamics	2	2
CH 242:	Chemistry Practicals IV	2	2
CH 243:	Organic Chemistry II	3	2
CH 245:	Chemistry Practicals VIII	2	2
CH 261:	Environmental Analytical Chemistry	2	2
CH 281:	Organic Structure, Reactions and Mechanisms	2	2
CH 399:	Practical Training	2	2
Third Year			
<i>(Stream A - Analytical Chemistry)</i>			
CH 314:	Project Work	1.5	1
CH 342:	Chemistry Practicals VI	2	1
CH 345:	Quantum Chemistry	2	1
CH 371:	Quality Control, Assurance and Waste Management	2	1
CH 373:	Organometallic Chemistry	2	1
CH 378:	Chemistry Practicals IX	2	1
MK 301:	Small Business and Entrepreneurship	3	1
CH 314:	Project Work	1.5	2
CH 323:	Organic Spectroscopy	2	2
CH 333:	Chemical Speciation Analysis	2	2
CH 341:	Chemistry Practicals V	2	2
CH 352:	Forensic Analysis	2	2
CH 382:	Bio-organic Chemistry	2	2
CH 391:	Electrochemistry	2	2
<i>(Stream B - Industrial Chemistry)</i>			
CH 314:	Project Work	1.5	1
CH 342:	Chemistry Practicals VI	2	1
CH 345:	Quantum Chemistry	2	1
CH 357:	Fuel Chemistry and Technology	2	1
CH 373:	Organometallic	2	1
CH 378:	Chemistry Practicals IX	2	1
MK 301:	Small Business and Entrepreneurship	3	1
CH 323:	Organic Spectroscopy	2	1

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
CH 314:	Project Work	1.5	2
CH 311:	Industrial Chemistry	2	2
CH 341:	Chemistry Practicals V	2	2
CH 344:	Chemical Kinetics and Electrochemistry	2	2
CH 382:	Bio-organic Chemistry	2	2
CH 385:	Applied Organic Synthesis	2	2
CH 391:	Electrochemistry	2	2

B.Sc. (EDUCATION) PROGRAMME

First Year

CH 100:	Introduction to Physical Chemistry	2	1
CH 111:	Basic Analytical Chemistry	2	1
CH 116:	Organic Chemistry I	2	1
CH 121:	Chemistry Practicals I	2	1
	Education courses	15	2

Second Year

	Education courses	15	1
CH 122:	Chemistry Practicals II	2	2
CH 225:	Inorganic Chemistry I	2	2
CH 243:	Organic Chemistry II	3	2
CH 227:	Environmental Chemistry	2	2

Third Year

CH 241:	Chemistry Practicals III	2	1
CH 248:	Instrumental Methods in Analytical Chemistry	3	1
CH 343:	Inorganic Chemistry II	3	1
CH 200:	Chemical Thermodynamics	2	2
CH 242:	Chemistry Practicals IV	2	2
CH 344:	Chemical Kinetics and Electrochemistry	2	2
CH 345:	Quantum Chemistry	2	2

DEPARTMENT OF GEOLOGY

B.Sc. (Ed.) four-year programme should follow the 2004/2005 prospectus and *B.Sc. (Ec)* year programme should follow the current prospectus course mapping.

Common Courses for all Science Students

DS 101:	Perspectives of Development I	2	1
DS 102:	Perspectives of Development II	2	2

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
IS 131:	Introduction to Informatics and Microcomputers	2	2
DS 211:	Entrepreneurship, Small Business and Development	2	1
SC 215:	Science Methods	2	1

B.Sc. (GEOLOGY)

First Year

CH 100:	Introduction to Physical Chemistry	2	1
CH 111:	Basic Analytical Chemistry	2	1
MT161:	Matrices and Basic Calculus for Non Majors	3	1
MT171:	One Variable Calculus for Non Majors	3	2
MT 271:	Statistics for Mathematics Non Majors	3	2
PH 112:	Mechanics I	2	2
PH 123:	Vibrations and Waves	2	2
IS 131:	Introduction to Informatics and Microcomputers	2	2
TR 110:	Surveying	4	1
DS 101:	Perspective in Development I	2	1
DS 102:	Perspective in Development II	2	2
GE 140:	Geology, Geomorphology and Soil	2	1
GY 100:	Introduction to Geology and Geological Processes	3	1
GY 120:	Earth Materials (Rocks and Minerals)	3	2
GY 265:	Geological Mapping I (4weeks)	1	2

Second Year

EV 200:	Environmental Science 1	2	2
CH 200:	Chemical Thermodynamics	2	2
GY 201:	Optical Mineralogy	2	1
GY 228:	Introduction to Geochemistry	2	1
GY 250:	Mineralogy and Crystallography	3	1
GY 253:	Fundamentals of Geophysics	2	2
GY 254:	Structural Geology 1	2	1
GY 256:	Fundamentals of Engineering Geology	2	2
GY 257:	Paleontology	3	2
GY 258:	Remote Sensing and GIS I	2	2
GY 260:	Sedimentary and Sedimentary Petrology	3	2
GY 355:	Geological Mapping II	1	2
MT 104:	Computers and Programming	3	2
SC 215:	Scientific Methods	2	2

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
DS 200:	Development studies I	2	1
Third Year			
GY 308:	Principles of Stratigraphy	2	1
GY 326:	Introduction to Hydrogeology	2	1
GY 361:	Magmatic Petrology	3	1
GY 362:	Metamorphic Petrology	3	2
GY 363:	Integrated Prospecting Methods	3	2
GY 364:	Metallic Mineral Deposits and Ore Microscopy	4	2
GY 367:	Structural Geology II	2	2
GY 368:	Remote Sensing and GIS II	2	1
GY 369:	Introduction to Environmental Earth Science	2	2
GY 371:	Geotectonics	3	2
GY 465:	Geological Mapping III (4 Weeks)	1	2
GY 475:	Industrial Attachment (4 weeks)	1	2
EV 300:	Environmental Science II	2	1&2
GY 351:	Fundamentals of Seismology	2	2
GY 352:	Marine Geology	2	2
GY 353:	Applied Geophysics	2	1
GY 356:	Applied Geochemistry	2	2
GY 357:	Isotope Geology	2	1
Fourth Year			
BM 100:	Principles of Management and Administration	2	1
BM 102:	Introduction to Business	2	1
CL 108:	Communication Skills for Commerce and Management	3	2
GY 400:	Geology and Mineral Resources of Tanzania	4	1
GY 401:	History of the Earth	2	1
GY 402:	Industrial Minerals and Rocks	2	1
GY 405:	Independent Project	3	1&2
GY 406:	Petroleum Geology	3	1
GY 403:	Mining Geology and Ore Evaluation	3	1
GY 404:	Mineral Processing	2	2
GY 407:	Basin Analysis	2	1
GY 408:	Basement Analysis	2	1
GY 410:	Advanced Hydrogeology	2	2
GY 420:	Dam Geology	1	2
GY 424:	Rock Excavation and Support	2	1

B.Sc. (WITH GEOLOGY) DEGREE PROGRAMME

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
First Year			
TR 110:	Surveying	4	1
IS 131:	Introduction to Informatics and Microcomputers	2	2
DS 101:	Perspective in Development I	2	1
DS 102:	Perspective in Development II	2	2
GY100:	Introduction to Geology and Geological Processes	3	1
GY120:	Earth Materials (Rocks and Minerals)	3	2
GY265:	Geological Mapping I (4 weeks)	1	2
Second Year			
EV 200:	Environmental Science I	2	2
GY 201:	Optical Mineralogy	2	1
GY 228:	Introduction to Geochemistry	2	1
GY 250:	Mineralogy and Crystallography	3	1
GY 253:	Fundamentals of Geophysics	2	2
GY 254:	Structural Geology I	2	1
GY 258:	Remote Sensing and GIS 1	2	2
GY 355:	Geological Mapping II	1	2
GY 260:	Sedimentary and Sedimentary Petrology	3	2
CH 200:	Chemical Thermodynamics	2	2
MT 104:	Computers and programming	3	2
SC 215:	Scientific Methods	2	2
DS 200:	Development Studies	2	1
GY 256:	Fundamentals of Engineering Geology	2	2
GY 257:	Paleontology	3	2
Third Year			
GY 308:	Principles of Stratigraphy	2	1
GY 326:	Introduction to Hydrogeology	2	1
GY 361:	Magmatic Petrology	3	1
GY 362:	Metamorphic Petrology	3	2
GY 364:	Metallic Mineral Deposits and Ore Microscopy	4	2
GY 465:	Geological Mapping III (4 weeks)	1	2
GY 475:	Industrial Attachment (4 weeks)	1	2
EV 300:	Environmental Science II	2	2
GY 351:	Fundamentals of Seismology	2	2
GY 352:	Marine Geology	2	2

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
GY 353:	Applied Geophysics	2	1
GY 356:	Applied Geochemistry	2	2
GY 357:	Isotope Geology	2	1
GY 367:	Structural Geology II	2	2
GY 368:	Remote Sensing and GIS II	2	1
GY 369:	Introduction to Environmental Earth Science	2	2

Fourth Year

GY 400:	Geology and Mineral Resources of Tanzania	4	1
GY 405:	Independent Project	3	1&2
GY 363:	Integrated Prospecting Methods	3	2
BM 100:	Principles of Management and Administration	2	1
BM 102:	Introduction to Business	2	1
CL 108:	Communication Skills for Commerce and Management	3	2
GY 401:	History of the Earth	2	1
GY 402:	Industrial Minerals and Rocks	2	1
GY 403:	Mining Geology	2	1
GY 406:	Petroleum Geology	3	1
GY 407:	Basin Analysis	2	1
GY 408:	Basement Analysis	2	1
GY 410:	Advanced Hydrogeology	2	2
GY 420:	Dam Geology	1	2

B.Sc. (ENGINEERING GEOLOGY) DEGREE PROGRAMME

First Year

EG 100:	Workshop Training	3	1
EG 101:	Engineering Drawing	1	1
SD 101:	Civil Engineering Drawing	2	2
CH 100:	Introduction to Physical Chemistry	2	1
CH 111:	Basic Analytic Chemistry	2	1
MT 161:	Matrices and Basic Calculus for Non Majors	3	1
MT 171:	One Variable Calculus for Non Majors	3	2
IS 131:	Introduction to Informatics and Microcomputers	2	2
CS 171:	Introduction to Computers and Programming in Pascal	2	1
CS 172:	Computer Programming in Pascal	2	2
DS 101:	Perspective in Development I	2	1
DS 102:	Perspective in Development II	2	2

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
GY 100:	Introduction to Geology and Geological Processes	3	1
GY 120:	Earth Materials (Rocks and Minerals)	3	2
GY 265:	Geological Mapping I (4 weeks)	2	2
Second Year			
EV 200:	Environmental Science I	2	2
TR 110:	Surveying	4	1
TR 211:	Soil Mechanics	4	1
TR 220:	Route Location	2.5	2
TR 212:	Foundation Engineering	3	2
MT261:	Several Variable Calculus for Non Majors	3	1
MT 271:	Statistics for Mathematics Non Majors	3	2
GY 201:	Optical Mineralogy	2	1
GY 208:	Principles of Stratigraphy	2	1
GY 228:	Introduction to Geochemistry	2	1
GY 250:	Mineralogy and Crystallography	3	2
GY 253:	Fundamentals of Geophysics	2	2
GY 254:	Structural Geology 1	2	1
GY 260:	Sedimentology and Sedimentary Petrology	3	2
GY 258:	Remote Sensing and GIS 1	2	2
GY 355:	Geological Mapping II	1	2
SC 215:	Scientific Methods	2	2
MT 104:	Computers and Programming	3	2
DS 200:	Development Studies	2	1
GY 256:	Fundamentals of Engineering Geology	2	2
GY 257:	Palaeontology	3	2
Third Year			
TR 210:	Introduction to Transport Engineering	3	2
TR 310:	Foundation Engineering	3	2
TR 331:	Highway material	3	1
SE 212:	Civil Engineering Materials II	3	1
GY 308:	Principles of Stratigraphy	2	1
GY 326:	Introduction to Hydrogeology	2	1
GY 361:	Magmatic Petrology	3	1
GY 362:	Metamorphic Petrology	3	2
GY 364:	Metallic Mineral Deposits and Ore Microscopy	4	2
GY 367:	Structural Geology II	2	2

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
GY 465:	Geological Mapping (4 weeks)	1	2
GY 475:	Industrial Attachment (4 weeks)	1	2
EV 300:	Environmental Science II	2	1&2
GY 352:	Marine Geology	2	2
GY 353:	Applied Geophysics	2	1
GY 356:	Applied Geochemistry	2	2
GY 357:	Isotopes Geology	2	1
GY 368:	Remote Sensing and GIS II	2	1
GY 369:	Introduction to Environmental Earth Science	2	2
Fourth Year			
TR 332:	Pavement Analysis and Design	3	2
TR 430:	Pavement Maintenance	3	2
EG 400:	Engineering Ethics and Professional Conduct	1	2
LW 400:	Law for Engineers	2	1
MG 445:	Entrepreneurship for Engineers	3	2
GY 363:	Integrated Prospecting Methods	3	2
GY 368:	Remote Sensing and GIS II	2	1
GY 400:	Geology and Mineral Resources of Tanzania	4	1
GY 405:	Independent Project	3	1&2
BM 100:	Principles of Management and Administration	2	1
BM 102:	Introduction to Business	2	1
CL 108:	Communication Skills for Commerce and Management	3	2
GY 401:	History of the Earth	2	1
GY 402:	Industrial Minerals and Rocks	2	1
GY 403:	Mining Geology	3	1
GY 404:	Mineral Processing	2	2
GY 406:	Petroleum Geology	3	1
GY 407:	Basin Analysis	2	1
GY 408:	Basement Analysis	2	1
GY 410:	Advanced Hydrogeology	2	2
GY 420:	Dam Geology	1	2
GY 421:	Applied Engineering Seismology	1	1
GY 423:	Applied Rock Mechanics	1	1
GY 424:	Rock Excavation and Support	2	1

DEPARTMENT OF MATHEMATICS

[*B.Sc. (Ed.)* four-year programme follow the 2004/2005 prospectus and *B.Sc. (Ed.)* three-year programme follow the current prospectus course mapping].

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
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Common courses for all Science students

DS 100:	Perspectives of Development I	2	1
IS 131:	Introduction to Informatics and Microcomputers	2	2
EV 200:	Environmental Science*	2	1
DS 211:	Entrepreneurship, Small Business and Development	2	1
SC 215:	Scientific Methods	2	1

B.Sc. General & B.Sc. with Geology (*Majoring in Mathematics*)

First Year

MT 100:	Foundations of Analysis	3	1
MT 127:	Linear Algebra 1	3	1
MT 120:	Analysis 1: Functions of a Single Variable	3	2
MT 104:	Computers and Programming	3	2

Second Year

MT 200:	Analysis 2: Functions of Several Variables	3	1
MT 216:	Ordinary Differential Equations	3	1
MT 226:	Partial Differential Equations	2	2
MT 218:	Linear Programming	2	2
MT 254:	Numerical Analysis I	2	2

Third Year

MT 347:	Abstract Algebra I	2	1
MT 300:	Analysis 3: Complex Analysis I	2	2
MT 389:	Mathematics Project	2	2
MT 227:	Linear Algebra II	3	2
MT 239:	Mathematical Logic and Formal Semantics	2	2
MT 373:	Mathematical Statistics II	3	2
MT 338:	Queuing Theory and Inventory Models	2	1
MT 348:	Integer and Nonlinear Programming	3	1
MT 358:	Graph Theory and Transportation Problems	3	2

B.Sc. (WITH COMPUTER), [majoring in Mathematics]

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
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First Year

MT 100:	Foundation of Analysis	3	1
MT 137:	Discrete Mathematics	2	1
MT 127:	Linear Algebra 1	3	1
MT 120:	Analysis 1: Functions of a Single Variable	3	2

Second Year

MT 200:	Analysis 2: Functions of Several Variables	3	1
MT 216:	Ordinary Differential Equations	3	1
MT 223:	Mathematical Statistics I	2	2
MT 254:	Numerical Analysis I	2	2
MT 218:	Linear Programming	2	2

Third Year

MT 347:	Abstract Algebra	2	1
MT 338:	Queuing Theory and Inventory Models	2	1
MT 300:	Analysis 3: Complex Analysis I	2	2
MT 389:	Mathematics Project	2	2
MT 227:	Linear Algebra II	3	2
MT 239:	Mathematical Logic and Formal Semantics	2	2
MT 373:	Mathematical Statistics II	3	2
MT 348:	Integer and Nonlinear Programming	3	1
MT 358:	Graph Theory and Transportation Problems	3	2

B.SC. ENGINEERING GEOLOGY

First Year

MT 161:	Matrices and basic Calculus for Non-majors	3	1
MT 171:	One Variable Calculus and Differential Equation (non-majors)	3	2

Second Year

MT 261:	Several Variables Calculus for non-majors*	3	1
MT 271:	Statistics for Mathematics non-majors*	3	2

B.Sc. (IN GEOLOGY)

First Year

MT 161:	Matrices and Basic Calculus*	3	1
MT 171:	One Variable Calculus and Differential Equation*	3	2
MT 271:	Statistics for Mathematic Non-majors*	3	2

B.Sc. (EDUCATION) PROGRAMME

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
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First Year

MT100:	Foundations of Analysis	3	1
MT127:	Linear Algebra I	3	1
MT223:	Mathematical Statistics I	2	2
	Education Courses	15	2

Second Year

	Education Courses	15	1
MT120:	Analysis 1: Functions of a Single Variable	3	2
MT218:	Linear Programming	2	2
MT254:	Numerical Analysis I	2	2
MT 227:	Linear Algebra II	3	2
MT 226:	Partial Differential Equations	2	2

Third Year

MT200:	Analysis 2. Functions of Several Variables	3	1
MT216:	Ordinary Differential Equations	2	1
MT266:	Rigid Body Mechanics I	2	2
MT347:	Abstract Algebra	2	1
MT389:	Mathematics Project	2	2
MT373:	Mathematical Statistics II	3	1
MT 336:	Continuum Mechanics	3	1
MT300:	Analysis 3: Complex Analysis I	2	2
MT360:	Functional Analysis	3	2
MT 389:	Mathematics Project	2	2

DEPARTMENT OF PHYSICS

Common Courses for all Science students

DS 101:	Perspectives of Development I	2	1
IS 131:	Introduction to Informatics and Microcomputers	2	2
EV 200:	Environmental Science*	2	1
DS 211:	Entrepreneurship, Small Business and Development	2	1
SC 215:	Scientific Methods	2	1

B.Sc. (Ed.) Degree Programme

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
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First Year

PH122:	Classical Mechanics	2	1
PH113:	Electromagnetism I	2	1
PH116:	Practicals I	2	2
PH123:	Vibrations and Waves	2	2
	Education	15	2

Second Year

	Education	15	1
PH219:	Relativity and Cosmology	2	1
PH329:	Introduction to Agricultural Physics	1	1
PH124:	Optics	2	2
PH213:	Electromagnetism II	2	2
PH247:	Practicals II	2	2
PH239:	Fundamentals of Quantum Mechanics	2	2
PH332:	Solid State Physics	2	2
PH249:	Fundamentals of Materials Science	2	2

Third Year

PH220:	Statistical Thermodynamics	2	1
PH326:	Analogue Electronics	2	1
PH343:	Atomic Physics	2	1
PH345:	Practicals III	2	1
PH319:	Fundamentals of Atmospheric Physics	2	1
PH327:	Digital Electronics	2	2
PH344:	Nuclear Physics	2	2
PH364:	Earth-Atmosphere System	2	2
PH346:	Physics Project	2	2
PH328:	Concepts in Astronomy and Astrophysics	1	2

DEPARTMENT OF ZOOLOGY AND WILDLIFE CONSERVATION

[B.Sc. (Ed.) four-year programme follow the 2004/2005 prospectus and B.Sc. (Ed.) three-year programme follow the current prospectus course mapping]

Common Courses for All Science Students

DS 100:	Perspectives of Development I	2	1
IS 131:	Introduction to Informatics and Microcomputers	2	2
EV 200:	Environmental Science*	2	1

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
DS 211:	Entrepreneurship, Small Business and Development	2	1
SC 215:	Scientific Methods	2	1
B.Sc. GENERAL (Zoology Major)			
First Year			
ZL 121:	Invertebrate Zoology	2	1
BL 111:	Introductory Cell Biology and Genetics	3	1
WS 101:	Ecology and Utilisation of Natural Resources	2	1
BL 113:	Ecology I	2	2
MC 111:	Introduction to Microbiology	2	2
ZL 122:	Chordate Zoology	2	2
ZL 124:	Developmental Biology	2	2
CH 113:	Chemistry for life Sciences (for non chemistry majors)	3	1
CL 107:	Communication Skills for Science	3	2
Second Year			
AQ 201:	Aquatic Biology	2	1
BL 213:	Ecology II	2	1
ZL 210:	Vertebrate Anatomy and Physiology I	2	1
ZL 215:	Mammalian Biology	2	1
ZL 228:	Parasitology I	2	1
AQ 218:	Aquatic Biology Field Course	1	2
BL 214:	Biostatistics I	2	2
ZL 211:	Vertebrate Anatomy and Physiology II	2	2
ZL 226:	Entomology I	2	2
WS 202:	Biology of Birds	2	2
ZL 207:	Ichthyology	2	2
ZL 214:	Herpetology	2	2
Third Year			
BL 311:	Molecular Genetics	2	2
BL 399:	Research Project	2	1&2
ZL 307:	Animal Behaviour I	2	1
BL 313:	Biological Impact Assessment	2	1
ZL 326:	Entomology II	2	1
BL 303:	Terrestrial Biology Field Course	1	2
BL 399:	Research Project	2	1&2
ZL 302:	Evolution	2	2

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
ZL 327:	Cell Biology	2	2
BL 314:	Biostatistics II	2	2
ZL 314:	Environmental Physiology	2	1
ZL 318:	Endocrinology and Reproductive Physiology	2	2
ZL 315:	Physiology of Nutrition	2	2
ZL 328:	Parasitology II	2	2

WILDLIFE SCIENCE AND CONSERVATION

B.Sc. (Wildlife)

First Year

CH 113:	Chemistry for Life Sciences	3	1
ZL 121:	Invertebrate Zoology	2	1
BL 111:	Introductory Cell Biology and Genetics	3	1
AC 100:	Principles of Accounting I	3	1
BM 100:	Principles of Management and Administration	3	1
BT 111:	Introductory Botany	2	1
BL 113:	Ecology I	2	2
WS 101:	Ecology and Utilisation of Natural Resources	2	2
ZL 122:	Chordate Zoology	2	2
MC 111:	Introduction to Microbiology	2	2
ZL 124:	Developmental Biology	2	2
CL 107:	Communication Skills for Science	3	2

Second Year

AQ 201:	Aquatic Biology	2	1
BL 213:	Ecology II	2	1
GE 245:	Remote Sensing	3	2
WS 201:	Range Ecology	2	1
ZL 215:	Mammalian Biology	2	1
ZL 228:	Parasitology I	2	1
ZL 210:	Vertebrate Anatomy and Physiology I	2	1
AQ 218:	Aquatic Biology Field Course	1	2
BL 214:	Biostatistics I	2	2
BT 213:	Taxonomy of Higher Plants	2	2
WS 202:	Biology of Birds	2	2
WS 204:	Community Based Conservation and Extension	2	2
WS 205:	Biogeography	2	2

<i>Course Code</i>	<i>Course Title</i>	<i>Units</i>	<i>Semester</i>
WS 200:	Practical Training I	2	1
ZL 226:	Entomology I	2	2
WS 203:	Management of Wildlife in Captivity	2	2
ZL 207:	Ichthyology	2	2
ZL 211:	Vertebrate Anatomy and Physiology II	2	2
ZL 214:	Herpetology	2	2
Third Year			
BL 399:	Research Project	2	1&2
BT 329:	Plant Ecology and Phytogeography	3	1
WS 300:	Practical Training II	2	1
WS 301:	Conservation Biology	2	1
WS 303:	Wildlife Economics	2	1
WS 304:	Analysis of Wildlife Populations	2	1
ZL 307:	Animal Behaviour I	2	1
BL 313:	Biological Impact Assessment	2	1
EC 375:	Natural Resources and Environmental Economics	3	1
GE 352:	Natural Resources Management	3	1
WS 306:	Wildlife Diseases	2	1
ZL 326:	Entomology II	2	1
BL 399:	Research Project	2	1&2
WS 305:	Animal Ecology	2	2
WS 308:	Animal Behaviour II	2	2
WS 309:	Reproduction, Growth and Nutrition in Wild Mammals	2	2
WS 312:	Legislation for Wildlife Conservation	1	2
BL 314:	Biostatistics II	2	2
GE 354:	Environmental Assessment	3	2
WS 311:	Tourism and Recreation Management	2	2
ZL 302:	Evolution	2	2
WS 307:	Fire Ecology	2	2