



Benha University
Faculty of Science



Geology programs



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BSc. Geology programs



Benha University
Faculty of Science



Geology programs

University Requirements						First Level
University Compulsory Courses: 4 Credit Hours						
First level						
Course Code	Course Title	Theoretical	T/P	Credit Hours	Prerequisite	
Uni 100	Scientific Thinking	2	-/-	2	-	
Uni 115	English Language (1)	2	-/-		-	
Uni 151	Human Rights and Anticorruption	1	-/-	1	-	
University Requirements						
University Elective Courses: 4 Credit Hours						
First level						
Course Code	Course Title	Theoretical	T/P	Credit Hours	Prerequisite	
Uni 105	Information Technology	2	-/-	2	-	
Uni 142	History of Science	2	-/-	2	-	
Uni 152	Healthy Nutrition	2	-/-	2	-	
Faculty Requirements						
Faculty Compulsory Courses: 88 Credit Hours						
First level						
Course Code	Course Title	Theoretical	T/P	Credit Hours	Prerequisite	



Geology programs

Geo 100	Physical and Histroical Geology	2	-/2	3		First level Geological Sciences
Chm 100	General Chemistry (1)	2	2-Jan	3		
Com 104	Introduction to Data Base	2	-/ 2	3		
Phy 101	Heat and Proparties of Matter	2	2-Jan	3		
Bio 101	Biology (1)	1	-/2	2		
Bio 102	Biology (2)	1	-/2	2		
Chm 105	General Chemistry (2)	2	2-Jan	3		
Geo 105	Crystals, Minerals and Rocks	2	-/3	3		
Phy 102	Electromagnetism and Geometric Optics	2	2-Jan	3		
Mat 111	Calculus	2	2/-	3		
Faculty Compulsory Courses: 60 Credit Hours						
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite	Geology
Geo 205	Planar Survey	1	/-3	2	Geo 100	
Geo 215	Invertebrate Paleontology	2	/-3	3	Geo 100	

Geology programs

Geo 216	Micropaleontology	2	/-3	3	Geo 215
Geo 220	Sedimentary Environments and Facies	1	/-3	2	Geo 105
Geo 225	Sedimentary Petrology	2	/-3	3	Geo 105
Geo 239	Crystallography and Optical Mineralogy (1)	2	/-3	3	Geo 105
Gph 250	Principals of Geophysics	2	/-3	3	Geo 105
Geo 305	Field Trip (1)		/-3	1	Geo 105
Geo 308	Geomorphology and Remote Sensing	1	/-3	2	Geo 310
Geo 310	Stratigraphy	2	/-3	3	Geo 216
Geo 333	Igneous Petrology	2	/-3	3	Geo 239
Geo 334	Basement Complex	1	/-3	2	Geo 333
Geo 335	Geochemistry	2	/-3	3	Geo 333
Geo 338	Metamorphic Petrology	1	/-3	2	Geo 239
Geo 340	Structural Geology and Geotectonics	2	/-3	3	Geo 100



Geology programs

Gph 352	Subsurface Geology	1	/-3	2	Gph 250	
Geo 365	Hydrogeology	2	/-3	3	Geo 100	
Geo 403	Engineering Geology	1	/-3	2	Geo 310	
Geo 405	Field Trip (2)	-	/-3	1	Geo 310	
Geo 415	Geology of Egypt	2	-/3	3	Geo 310	
Geo 430	Ore Microscopy and Ore Petrology	2	/-3	3	Geo 334	
Geo 435	Economic Geology	2	/-3	3	Geo 334	
Geo 460	Hydrogeochemistry	1	/-3	2	Geo 365	
Geo 466	Petroleum Geology	2	/-3	3	Geo 340	
Faculty Elective Courses: 28 Credit Hours						
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite	
Geo 234	Gemstones	1	-/2	2	Geo 105	Geology
Geo 235	Volcanology	1	/-3	2	Geo 105	



Benha University
Faculty of Science



Geology programs

Geo 236	Rock Forming Minerals of Hard Rocks	1	/-3	2	Geo 105
Geo 240	Geographic Information System	1	/-3	2	-
Gph 253	Marine Geophysical Exploration	1	-/3	2	-
Gph 255	Principles of Seismic Survey	1	/-3	2	Geo 100
Geo 300	Environmental Geology	1	/-3	2	-
Geo 302	Mining Geology	2	-/-	2	Geo 310
Geo 314	Vertberate Paleontology	1	/-3	2	Geo 310
Geo 317	Paleontology	1	/-3	2	Geo 216
Geo 319	Paleoecology	1	/-3	2	Geo 216
Geo 330	Analytical Techniques	1	/-3	2	Geo 333
Geo 332	Isotope Geochemistry	1	/-3	2	Geo 333
Geo 341	Rock Mechanics	1	/-3	2	Geo 225
Geo 411	Quaternary Geology	1	/-3	2	Geo 310

Geology programs

Geo 414	Magneto- and Chemostratigraphy	1	/-3	2	Geo 310	
Geo 425	Sequence Stratigraphy and Sedimentary Basins	1	/-3	2	Geo 320	
Geo 427	Marine Geology	1	/-3	2	Geo 320	
Geo 432	Geology of Mineral Exploration	1	/-3	2	Geo 335	
Geo 436	Geochemistry of Hard Rocks	1	/-3	2	Geo 335	
Geo 438	Ore Geochemistry	1	/-3	2	Geo 430	
Geo 440	Structural Analysis	1	/-3	2	Geo 340	
Geo 464	Petroleum Exploration	1	/-3	2	Geo 310	
Geo 468	Petroleum Geochemistry	1	/-3	2	Geo 310	
Gph 470	Well Logging	1	/-3	2	Gph 250	
Faculty Free Elective Courses: 6 Credit Hours						
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite	Geology
Zoo 205	Introduction to Invertebrates	1	/-2	2	-	



Geology programs

Chm 216	Organic Environmental Green Chemistry	1	/-2	2	-	
Zoo 227	Vertebrates	1	/-2	2	-	
Chm 236	Thermodynamics of Solutions	2	-/-	2	-	
Phy 238	Radiation Physics	1	/-2	2	-	
Phy 240	Principles of Modern Physics	1	-/3	2	-	
Faculty Graduation requirements: 6 Credit Hours						
Geo 306	Applied and Field Training	-	-/-	3	--	
Geo 406	Research and Essay	3	-/-	3	--	
Faculty Compulsory Courses: 60 Credit Hours						
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite	
Geo 205	Planner Survey	1	/-3	2	Geo 100	Geophysics
Geo 210	Paleontology	2	-/3	3	Geo 100	
Geo 230	Rock Forming Minerals	2	/-3	3	Geo 105	
Gph 250	Principals of Geophysics	2	/-3	3	Geo 100	
Gph 254	Seismic Survey	2	/-3	3	Gph 250	



Benha University
Faculty of Science



Geology programs

Gph 256	Electric and Electromagnetic Survey	2	/-3	3	Gph 250
Gph 258	Gravity and Magnetic Survey	1	/-3	2	Gph 250
Gph 305	Field Trip (1)	-	/-3	1	Geo 105
Geo 310	Stratigraphy	2	/-3	3	Geo 210
Geo 321	Sedimentary Petrology and Sedimentation	2	/-3	3	Geo 105
Geo 336	Igneous and Metamorphic Petrology	2	/-3	3	Geo 105
Geo 340	Structural Geology and Geotectonics	2	/-3	3	Geo 100
Gph 350	Seismology (Earthquakes)	1	/-3	2	Gph 250
Gph 351	Seismic Processing and Interpretation	2	/-3	3	Gph 254
Gph 352	Subsurface Geology	1	/-3	2	Gph 250
Gph 355	Processing and Interpretation of Potential Field Data	2	/-3	3	Gph 258
Gph 356	Geoelectric and Electromagnetic Processing and Interpretation	1	/-3	2	Gph 256
Geo 365	Hydrogeology	2	/-3	3	Geo 100
Gph 405	Field Trip (2)	-	/-3	1	Geo 310
Geo 415	Geology of Egypt	2	/-3	3	Geo 310
Gph 453	Geothermal and Radiation Methods	1	/-3	2	Gph 250



Geology programs

Gph 454	Petrophysics	1	/-3	2	Gph 457	
Gph 457	Well Logging and Formations Evaluation	1	/-3	2	Gph 250	
Geo 463	Principals of Petroleum Geology	2	/-3	3	Geo 100	
Faculty Elective Courses: 28 Credit Hours						
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite	
Geo 203	Geomorphology	1	/-3	2	Geo 100	Geophysics
Geo 232	Crystallography	1	/-3	2	Geo 105	
Geo 234	Gemstones	1	/-3	2	Geo 105	
Geo 235	Volcanology	1	/-3	2	Geo 105	
Geo 237	Optical Mineralogy	1	/-3	2	Geo 105	
Geo 240	Geographic Information System	1	/-3	2	Geo 105	
Gph 252	Introduction to Paython and Matlab	1	/-3	2	-	
Geo 319	Paleoecology	1	/-3	2	Geo 212	
Geo 330	Analytical Techniques	1	/-3	2	Geo 230	
Geo 331	Radioisotopes	1	/-3	2	Geo 230	
Geo 337	Basement Rocks of Egypt	1	/-3	2	Geo 230	



Geology programs

Geo 433	Economic Geology of Egypt	1	/-3	2	Geo 336		
Geo 436	Geochemistry of Hard Rocks	1	/-3	2	Geo 336		
Gph 450	Seismic Stratigraphy	2	/-3	3	Gph 254		
Gph 451	Geophysics of Mineral Exploration	2	/-3	3	Gph 250		
Gph 452	Marine Geophysics	2	-/-	2	Gph 250		
Gph 455	Engineering Drilling	2	/-3	3	Gph 250		
Gph 456	Environmental Geophysics	2	/-3	3	Gph 250		
Gph 458	Geophysical Data Integration	2	/-3	3	Gph 250		
Gph 459	Engineering Geophysics	2	/-3	3	Gph 250		
Geo 460	Hydrogeochemistry	1	/-3	2	Geo 365		
Geo 461	Petroleum of Egypt	2	/-3	3	Geo 340		
Geo 465	Physical Properties of Reservoir Rocks	2	/-3	3	Geo 340		
Gph 469	Paleomagnetism	2	/-3	3	Gph 250		
Faculty Free Elective Courses: 6 Credit Hours							
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite		Geophysics
Chm 213	Petroleum and Petrochemicals	2	/--	2	-		

Geology programs

Phy 229	Principals of Wave and Vibrations	1	/-2	2	-	
Chm 236	Thermodynamics of Solutions	2	-/-	2	-	
Phy 239	Electromagnetism	1	/-2	2	-	
Bot 275	Introduction to Bacteria	1	/-2	2	-	
Phy 245	Introduction to Physical Optics	1	-/3	2	-	
Faculty Graduation requirements: 6 Credit Hours						
Geo 306	Applied and Field Training	-	-/-	3	--	
Geo 406	Research and Essay	3	-/-	3	--	
Faculty Compulsory Courses: 60 Credit Hours						
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite	
Geo 213	Macro and Micro Fossils	2	-/3	3	Geo 100	Geology and Chemistry
Geo 237	Optical Mineralogy	1	-/3	2	Geo 105	
Geo 238	Principals of Petrology	2	-/3	3	Geo 105	
Geo 305	Field Trip (1)	-	-/3	1	Geo 105	
Geo 310	Stratigraphy	2	-/3	3	Geo 213	



Geology programs

Geo 321	Sedimentary Petrology and Sedimentation	2	-/3	3	Geo 105
Geo 340	Structural Geology and Geotectonics	2	-/3	3	Geo 100
Geo 365	Hydrogeology	2	-/3	3	Geo100
Geo 405	Field Trip (2)	-	-/3	1	Geo 310
Geo 419	Geology of Egypt and Basement Rocks	2	-/3	3	Geo 310
Geo 437	Geochemistry and Ore Geology	2	-/3	3	Geo 237
Geo 468	Petroleum Geochemistry	1	-/3	2	Geo 321
Chm 212	Aromatic and Poly Nuclear Chemistry	2	-/-	2	Chm 105
Chm 213	Petroleum and Petrochemicals	2	-/-	2	Chm 105
Chm 222	Chemistry of Representative Elements	2	-/3	3	Chm 105
Chm 241	Analytical Chemistry (1)	2	-/3	3	Chm 105
Chm 244	Environmental Analytical Chemistry (1)	2	-/-	2	Chm 241
Chm 310	Advanced Organic Chemistry	2	-/-	2	Chm 212



Geology programs

Chm 324	Co-ordination Chemistry	2	-/-	2	Chm 222	
Chm 332	Surface Chemistry	2	-/-	2	Chm 222	
Chm 343	Analytical Chemistry (2)	2	-/3	3	Chm 241	
Chm 404	Organometallic Chemistry	2	-/-	2	Chm 324	
Chm 421	Nuclear and Radiation Chemistry	2	-/-	2	Chm 324	
Chm 424	Chemistry of Lanthanides and Actinides (1)	2	-/-	2	Chm 222	
Chm 441	Instrumental Analysis (1)	2	-/3	3	Chm 105	
Faculty Elective Courses: 28 Credit Hours						
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite	
Geo 232	Crystallography	1	/-3	2	Geo 105	Geology and Chemistry
Geo 235	Volcanology	1	/-3	2	Geo 105	
Geo 236	Rock Forming Minerals of Hard Rocks	1	/-3	2	Geo 105	
Gph 255	Principles of Seismic Survey	1	/-3	2	Geo 100	



Geology programs

Geo 313	Planar Survey and Chemostratigraphy	2	/-3	3	Geo 100
Geo 315	Geomorphology and Paleocology	2	/-3	3	Geo 213
Geo 333	Igneous Petrology	2	/-3	3	Geo 237
Geo 338	Metamorphic Petrology	1	/-3	2	Geo 237
Geo 342	Remote Sensing	1	/-3	2	Geo 340
Geo 344	Engineering Geology and Mining	1	/-3	2	Geo 340
Gph 352	Subsurface Geology	1	/-3	2	Geo 100
Geo 430	Ore Microscopy and Ore Petrology	2	/-3	3	Geo 334
Geo 435	Economic Geology	2	/-3	3	Geo 237
Geo 460	Hydrogeochemistry	1	/-3	2	Geo 365
Geo 462	Hydrogeology of Egypt	1	/-3	2	Geo 365
Chm 221	Industrial Inorganic Chemistry (1)	2	-/-	2	Chm 100
Chm 231	Chemical Thermodynamics	2	-/-	2	Chm 105



Geology programs

Chm 232	Electrochemistry (1)	2	-/-	2	Chm 105		
Chm 242	Chemistry of Water Treatment (1)	2	-/-	2	Chm 241		
Chm 321	Industrial Inorganic Chemistry (2)	2	-/3	3	Chm 222		
Chm 322	Characterization of Inorganic Compounds	2	/-3	3	Chm 222		
Chm 326	Chemistry of Inorganic Pigments	2	-/3	3	Chm 222		
Chm 331	Applied Electrochemistry	2	/-3	3	Chm 105		
Chm 400	Nanochemistry and Applications	2	-/-	2	Chm222		
Chm 434	Chemistry of Catalysis Technology	2	-/-	2	Chm 343		
Chm 439	Basis of Quantum and Statistical Dynamics Chemistry	2	-/-	2	Chm 222		
Chm 442	Analytical Chemistry (3) (Selected Topics)	1	-/2	2	Chm 343		
Faculty Free Elective Courses: 6 Credit Hours							
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite		Geology
Com 223	Logic Design (1)	1	2/-	2	-		



Benha University
Faculty of Science



Geology programs

Phy 229	Principals of Wave and Vibrations	1	-/2	2	-
Phy 234	Radiation Physics and Its Applications	2	-/-	2	-
Ent 235	Beneficial Insects	2	-/-	2	-
Phy 239	Electromagnetism	1	-/2	2	-
Ent 280	General insect Taxonomy and Ecology	2	-/-	2	-
Faculty Graduation requirements: 6 Credit Hours					
Geo 306	Applied and Field Training	-	-/-	3	--
Geo 406	Research and Essay	3	-/-	3	--
-					