



Benha University **Faculty of Science**



Botany and microbiology programs



Benha University **Faculty of** **Science**



BSc. Botany and microbiology programs



Benha University
Faculty of Science



Botany and microbiology programs

University Requirements						
University Compulsory Courses: 4 Credit Hours						
First level						
Course Code	Course Title	Theoretical	T/ P	Credit Hours	Prerequisite	
Uni 100	Scientific Thinking	2	-/-	2	-	First Level
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	-	First Level
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	
Bot 100	General Botany (1)	1	2-/	2		First level Biologic



Benha University
Faculty of Science



Botany and microbiology programs

Chm 100	General Chemistry (1)	2	2-/	3		
Com 104	Introduction to Data Base	2	2/-	3		
Chm 105	General Chemistry (2)	2	-/2	3		
Zoo 101	General Zoology (1)	1	-/2	2		
Zoo 102	General Zoology (2)	2	-/2	3		
Bot 105	General Botany (2)	2	2/-	3		
Phy 103	General Physics	1	-/3	2		
Phy 104	Electricity, Magnetism and Modern Physics	1	2-Jan	2		
Mat 111	Calculus	2	2/-	3		
Ent 100	General Entomology	1	-/2	2		
Faculty Compulsory Courses: 60 Credit Hours						
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite	
Bot 221	Plant Morphology and Anatomy	2	-/3	3	Bot 105	Botany and Chemist



Benha University Faculty of Science



Botany and microbiology programs

Bot 232	Taxonomy of Flowering Plants	1	-/3	2	Bot 105
Bot 242	Plant Ecology and Its Applications	2	-/3	3	Bot 105
Bot 251	Plant Physiology (1)	2	-/3	3	Bot 105
Bot 302	Flora and Phytosociology and Field Trip	2	-/3	3	Bot 242
Bot 313	Fundamentals of Cytology and Genetics	1	-/3	2	Bot 105
Bot 351	Plant Hormones and Tissue Culture	2	-/3	3	Bot 251
Bot 354	Plant Metabolism and Enzymes	2	-/3	3	Bot 251
Bot 432	Archegoniate	1	-/3	2	Bot 221
Bot 441	Phytogeography	2	-/-	2	Bot 242
Bot 442	Medicinal Plants and PhytoChemistry	1	-/3	2	Bot 251
Mic 485	Principles of Plant pathology	1	-/2	2	Bot251
Chm 211	Aliphatic Organic Chemistry	2	-/3	3	Chm 105
Chm 212	Aromatic and Polynuclear Chemistry	2	-/-	2	Chm 105



Benha University Faculty of Science



Botany and microbiology programs

Chm 222	Chemistry of Representative Elements	2	-/3	3	Chm 100
Chm 232	Electrochemistry (1)	2	-/-	2	Chm 105
Chm 241	Analytical Chemistry (1)	2	-/3	3	Chm 100
Chm 268	Organic Environmental Green Chemistry (2)	2	-/3	3	Chm 105
Chm 316	Organic Spectroscopy (1)	2	-/3	3	Chm 212
Chm 323	Chemistry of Transition metals	2	-/-	2	Chm 222
Chm 343	Analytical Chemistry (2)	2	-/3	3	Chm 241
Chm 406	Nanochemistry and Biological Applications	2	3/-	3	Chm 222
Chm 486	Materials Science (1)	2	-/3	3	Chm 222
Faculty Elective Courses: 28 Credit Hours					
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite
Bot 255	Biofertilizer and Its Application	2	-/-	2	Bot 105
Bot 321	Advanced Plant Anatomy	1	-/2	2	Bot 221



Benha University
Faculty of Science



Botany and microbiology programs

Bot 342	Plant Natural Essential Oils	2	-/-	2	Bot 105	
Bot 411	Principles of Molecular Biology	2	-/-	2	Bot100	
Bot 412	Genetic Engineering	2	-/-	2	Bot 105	
Bot 421	Plant Fossils	1	-/2	2	Bot 232	
Bot 431	Advanced Taxonomy of Flowering Plants	1	-/2	2	Bot 232	
Bot 444	Economic Botany	1	-/3	2	Bot 242	
Bot 451	Secondary Plant Metabolism	2	-/-	2	Bot 354	
Mic 265	Introduction to Mycology	1	-/2	2	Bot 100	Botany and Chemistry
Mic 375	Introduction to Bacteriology	1	-/2	2	Bot 100	
Mic 386	Introduction to Virology	1	-/2	2	Bot 100	
Mic 471	Introduction to Phycology	1	-/2	2	Bot 100	
Mic 476	Biotechnology of Algae	1	-/2	2	Bot 105	
Mic 482	Molecular Plant-microbe Interaction	2	-/-	2	Bot 105	



Benha University
Faculty of Science



Botany and microbiology programs

Mic 499	Principles of Medical Microbiology	1	-/2	2	Mic 375
Chm 213	Petroleum and Petrochemicals	2	-/-	2	Chm 105
Chm 217	Industrial Chemistry and Economic Studies	2	-/-	2	Chm 105
Chm 242	Chemistry of Water Treatment (1)	2	-/-	2	Chm 241
Chm 244	Environmental Analytical Chemistry (1)	2	-/-	2	Chm 241
Chm 311	Chemistry of Pesticides and Toxins	2	-/3	3	Chm 211
Chm 324	Coordination Chemistry	2	-/-	2	Chm 323
Chm 331	Applied Electrochemistry	2	-/3	3	Chm 105
Chm 332	Surface Chemistry	2	-/-	2	Chm 222
Chm 400	Nano- Chemistry and Applications	2	-/-	2	Chm 222
Chm 425	Metallurgy and Ores	2	-/3	3	Chm 324
Chm 435	Laser Chemistry (1)	3	-/-	3	Chm 332
Chm 439	Basis of Quantum and Statistical Dynamics Chemistry	2	-/-	2	Chm 222



Botany and microbiology programs

Faculty Free Elective Courses: 6 Credit Hours						
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite	Botany and Chemistry
Com 427	Introduction to Bioinformatics	1	2/-	2	Com 222	
Bph 240	Fundamental of Biophysics	1	-/2	2	-	
Geo 339	Minerals and Rocks	1	-/2	2	-	
Ent 411	Insect Pest Resistance	1	-/2	2	-	
Phy 431	Radiological Physics	1	-/2	2	-	
Zoo 499	Genomics and Biosafety	1	-/2	2	-	
Faculty Graduation requirements: 6 Credit Hours						
Bot 350	Applied and Field Training	-	-/-	3	--	
Bot 402	Research and Essay	3	-/-	3	--	
Faculty Compulsory Courses: 60 Credit Hours						
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite	Microbiology and Chemistry
Bot 253	Plant Physiology (2)	2	-/-	2	Bot 105	
Mic 262	Mycology	2	-/3	3	Bot 100	



Benha University
Faculty of Science



Botany and microbiology programs

Mic 271	Bacteriology	2	-/3	3	Bot 100
Mic 275	Phycology	2	-/3	3	Bot 100
Mic 282	Molecular Biology	1	-/3	2	Bot 100
Mic 381	Virology	2	-/3	3	Mic 271
Mic 382	Microbial Immunology	2	-/3	3	Mic 271
Mic 391	Physiology of Microorganisms	2	-/3	3	Mic271
Mic 481	Plant Pathology	1	-/3	2	Mic 271
Mic 491	Industrial Microbiology	2	-/3	3	Mic 391
Mic 492	Medical Microbiology	2	-/3	3	Mic 271
Chm 212	Aromatic and Polynuclear Chemistry	2	-/-	2	Chm 105
Chm 213	Petroleum and Petrochemicals	2	-/-	2	Chm 105
Chm 222	Chemistry of Representative Elements	2	-/3	3	Chm 100
Chm 241	Analytical Chemistry (1)	2	-/3	3	Chm 100
Chm 314	Chemistry of Carbohydrates, Lipids, Amino Acids and Natural Products (1)	2	-/3	3	Chm 211
Chm 328	Transition Elements and Complexes	2	-/3	3	Chm 222
Chm 343	Analytical Chemistry (2)	2	-/3	3	Chm 241



Benha University
Faculty of Science



Botany and microbiology programs

Chm 406	Nanochemistry and Biological Applications	2	3/-	3	Chm 222	
Chm 431	Principle of Surface Chemistry	2	-/-	2	Chm 328	
Chm 465	Principles of Heterocyclic Chemistry and Applications	2	-/3	3	Chm 212	
Chm 486	Material Science (1)	2	-/3	3	Chm 222	
Faculty Elective Courses: 28 Credit Hours						
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite	
Bot 213	Principles of Cytology and Genetics	1	-/3	2	Bot 105	Microbiology and Chemistry
Mic 272	Actinomycetes	1	-/3	2	Bot 100	
Mic 291	Microbiological Laboratory Techniques	1	-/3	2	Bot 100	
Mic 292	Yeasts	1	-/3	2	Bot 100	
Mic 392	Microbial Toxins	1	-/3	2	Bot 100	
Mic 394	Microbial Enzymes	1	-/3	2	Bot 100	
Mic 395	Soil Microbiology	1	-/3	2	Bot 100	
Mic 397	Microbial Genetics	2	-/-	2	Mic 282	
Mic 482	Molecular Plant–microbe Interaction	2	-/-	2	Bot 105	
Mic 484	Genetic Engineering	2	-/-	2	Mic 382	



Benha University
Faculty of Science



Botany and microbiology programs

Mic 495	Antibiotics	1	-/3	2	Bot 100
Mic 496	Water and Food Microbiology	1	-/3	2	Bot 100
Mic 497	Bio-fertilizers	1	-/3	2	Mic 271
Mic 498	Microbial Biotechnology	1	-/3	2	Bot 100
Chm 213	Petroleum and Petrochemicals	2	-/-	2	Chm 105
Chm 221	Industrial Inorganic Chemistry (1)	2	-/-	2	Chm 100
Chm 234	Photo and Keinetic Chemistry	2	-/3	3	Chm 105
Chm 246	Chemistry of Water Treatment (2)	2	-/3	3	Chm 100
Chm 310	Advanced Organic Chemistry	2	-/-	2	Chm 212
Chm 311	Chemistry of Pesticides and Toxins	2	-/3	3	Chm 211
Chm 331	Applied Electrochemistry	2	-/3	3	Chm 105
Chm 332	Surface Chemistry	2	-/-	2	Chm 222
Chm 400	Nano-Chemistry and Applications	2	-/-	2	Chm 222
Chm 424	Chemistry of Lanthanides and Actinides (2)	2	-/-	2	Chm 222
Chm 439	Basis of Quantum and Statistical Dynamics Chemistry	2	-/-	2	Chm 222
Chm 466	Principles of Organic Spectroscopy	2	-/-	2	Chm 465



Benha University
Faculty of Science



Botany and microbiology programs

Faculty Free Elective Courses: 6 Credit Hours					
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite
Bph 240	Fundamental of Biophysics	1	-/2	2	-
Zoo 297	Principles of Parasitology	1	-/3	2	-
Geo 361	Water Geochemistry	1	3/-	2	-
Geo 363	Hydrology	1	-/3	2	-
Ent 412	Insect Borne Disease	1	-/3	2	-
Com 427	Introduction to Bioinformatics	1	2/-	2	Com 222
Faculty Graduation requirements: 6 Credit Hours					
Mic 302	Applied and Field Training	-	-/-	3	-
Mic 402	Research and Essay	3	-/-	3	-

Microbiology and Chemistry