



**Benha University
Faculty of Science
Department of Geology**



Economic Geology Diploma Program Specification



Diploma in Economic Geology

A. Basic Information

Program Title:	Diploma in Economic Geology
Program Type:	Single
Department:	Geology
Coordinator:	Prof. Basem Zoheir
Assistant Co-ordinator:	
Dates of program specifications approval:	14/11/2012

B. Professional Information

1. Program Aims

The program aims to:

- a) demonstrate methods and value of study Economic Geology, and exposure to some areas of research at the cutting edge of the Earth Sciences,
- b) gain a thorough understanding of the theoretical and practical applications of Economic Geology and Economic geology,
- c) develop written, oral and presentation skills appropriate for a science graduate at the post graduate level,
- d) promote capabilities and develop a wide range of independent and team skills.

2. Intended Learning Outcomes (ILO's)

2.1 Knowledge and Understanding

By the end of the program, graduates must be able to:

- a1. explain the general principles and techniques of Exploration Geology, including the structure, remote sensing, isotope and microchemical studies and their interrelationships,
- a2. describe the issues associated with exploitation of resources and the protection of the environment,
- a3. identify and interpret a range of geological materials in the laboratory and field; se-



- lect appropriate techniques to enable this; and explain geological relationships,
- a4. describe the importance of geological materials as resources, their exploitation and associated Economic impact,
 - a5 realize the value of Economic geological studies for the society welfare.

2.2 Intellectual Skills

By the end of the program, graduates must be able to:

- b1. review theories paradigms, concepts and principles; apply scientific principles to evaluate current geological paradigms; and evaluate Economic and societal aspects of the Earth's resources,
- b2. make sound and plausible interpretations of field and laboratory observations and analyse,.
- b3. apply gained knowledge and experience to perform specific tasks and solve scientific problems,
- b4. use different methods in Economic geology studies,
- b5. establish IT skills needed for the Economic geology studies.

2.3 Skills

2.3.1 Professional and Practical Skills

By the end of the program, graduates must be able to:

- c1. review available information and previous scientific publications,
- c2. analyze results, in order to effectively communicate data and ideas to a wide range of colleagues and experts,
- c3. conduct a range of field-based studies (e.g. geological mapping, sample collection and recording of field observations),.
- c4. explain the ore genesis and geotectonic setting of the different mineralization types,
- c5. acquaint with geological data and theories using appropriate methods.

2.3.2 General Skills

On successful completion of the program the graduate should be able to:

- d1. draw and describe geological features, specimens and thin and polished sections,
- d2. apply spreadsheets or other software to enter, manipulate and display numerical data.



- d3. work effectively within a team, and evaluate performance of self and of team,
- d4. recognize targets for personal, career and academic development,
- D5. converse efficiently with peers and cooperate in projects.

3- Academic standards of the program

The Academic Reference Standards (ARS) of this program compile with the Standard Criteria for Postgraduate Programs published by the National Authority of Quality Assurance and Accreditation of Education in (2009). Specific Academic Reference Standards for Diploma in Geology were approved by the Council of Faculty of Science, Benha University in --/--/2015 (**Appendices 1, 2, 3, 4, 5 and 6**).

4- Reference indices (Benchmarks)

Not applied

5- Curriculum structure and contents of program

a- Program duration: 1 year

b- Program structure:

Program structure	Credit hours
Elective courses	6
Compulsory courses	18
Total	24

d- Program Courses:

Compulsory courses: 18 hrs

Code No.	Course Title	No. of hours		
		Lectures	Practical	Credit hours
557 G	Geo-hydrology of Egypt	3	-	3
578 G	Radioactive minerals and ores	3	-	3
579 G	Economic mineral and ores	3	-	3
580 G	Prospection for natural resources	3	-	3



581 G	Oil and Gas Geology	3	-	3
582 G	Geology of Egypt	3	-	3

Elective courses: 6 hrs

Code No.	Course Title	No. of hours		
		Lectures	Practical	Credit hours
563G	Geotectonics	2	-	2
564 G	Rock petrography	2	-	2
565 G	Geophysical exploration	2	-	2
566 G	Geochemical exploration	2	-	2
567 G	Applied stratigraphy and paleontology	2	-	2
568 G	Cool geology	2	-	2

Diploma 24 credit hours

6- Contents of the Courses

See course specification (**Appendix 7, 8**)

7- Program admission requirements

1. يشترط لقياد الطالب لأي من دبلومات الدراسات العليا أن يكون حاصلًا على درجة البكالوريوس في العلوم من إحدى الجامعات أو درجة معادلة لها من معهد علمي معترف به من المجلس الأعلى للجامعات وفقاً لشروط القبول في كل دبلوم.
2. مدة الدراسة عام دراسي واحد .

Admission is achieved on the basis of:

- Completion of a B.Sc. degree or any equivalent Arabic or international certificate.

8- Regulations for progression and program completion:

1. شرط حصول الطالب على درجة الدبلوم اجتياز عدد ٢٤ ساعة دراسية معتمدة منها ١٨ ساعة معتمدة مقررات إجبارية و ٦ ساعات دراسية معتمدة مقررات اختيارية ويخصص لكل ساعة معتمدة خمسون درجة.



٢. تعقد امتحانات الدراسة الخاصة بالدبلومة في نهاية كل فصل دراسي في المواعيد التي يقرها مجلس الكلية بناء على اقتراح لجنة الدراسات العليا ويشترط لنجاح الطالب في المقررات الدراسية أن يكون حاصلًا في كل مقرر على تقدير C على الأقل، ويقدر نجاح الطالب على النحو المبين بالمادة (٨) من اللائحة.
٣. الطالب الذي يرسب في أي مقرر اجباري عليه إعادة دراسة ذلك المقرر والامتحان فيه وفي حالة رسوبه في مقرر اختياري فعليه دراسة ذلك المقرر أو اختيار مقرر آخر بديل له ويدخل تقدير المقرر في كلا حالتي الرسوب والنجاح في حساب المعدل الفصلي أو التراكمي.

- According to the bylaws of Benha Faculty of Science - the regulations for progression and program completion - the graduate must pass:
 - 12 elective credit hours.
 - ١8 compulsory credit hours.
- Student is considered absent, if he/she misses the final written exam with no acceptable excuse.

9- Methods and rules of evaluation of students in rolled in the program:

a- Courses evaluation:

Method of Assessment	Percent
Oral Exam	20%
Final Term Examination	80%
Total	100%

10- Methods of program evaluation:

Samples	Tool
1- Senior Students	Questionnaire
2- Alumni	Questionnaire



Benha University
Faculty of Science
Department of Geology



Head of the Department: Prof. Mohamed A. El-Fakharany
Program coordinator: Prof. Basem Zoheir
Date: 2015/2016



**Benha University
Faculty of Science
Department of Geology**



Environmental Geology Di- ploma Program Specification



Diploma in Environmental Geology

A. Basic Information

Program Title:	Diploma in Environmental Geology
Program Type:	Single
Department:	Geology
Coordinator:	Prof. Basem Zoheir
Assistant Co-ordinator:	
Dates of program specifications approval:	14/11/2012

B. Professional Information

1. Program Aims

The program aims to:

- a) provide a breadth of knowledge of Applied and Environmental Geology, and exposure to some areas of research at the cutting edge of the Earth Sciences,
- b) promote a thorough understanding of the theoretical and practical applications of Applied and Environmental Geology in the study of the Earth, and environmental and societal issues;
- c) encourage the development of ICT and written, oral and presentation skills appropriate for a science graduate at the post graduate level;
- d) develop a wide range of independent and team skills.

2. Intended Learning Outcomes (ILO's)

2.1 Knowledge and Understanding

By the end of the program, graduates must be able to:

- a1. explain the general principles and techniques of Geology, including the structure, composition and evolution of the Earth and its interrelationships with the hydrosphere, cryosphere, biosphere, and atmosphere and the perturbations of these systems by extraterrestrial influences,
- a2. describe the issues associated with exploitation of resources and the protection of



- the environment,
- a3. identify and interpret a range of geological materials in the laboratory and field; select appropriate techniques to enable this; and explain geological relationships,
 - a4. describe the importance of geological materials as resources, their exploitation and associated environmental impact,
 - a5. recognize the value of environmental geological studies for the society welfare.

2.2 Intellectual Skills

By the end of the program, graduates must be able to:

- b1. identify theories paradigms, concepts and principles; apply scientific principles to evaluate current geological paradigms; and evaluate environmental and societal aspects of the Earth's resources,
- b2. make sound and plausible interpretations of field and laboratory observations and analyse,
- b3. apply gained knowledge and experience to perform specific tasks and solve scientific problems,
- b4. use different methods in environmental geology studies,
- b5. Demonstrate IT skills needed for the environmental geology studies.

2.3 Skills

2.3.1 Professional and Practical Skills

By the end of the program, graduates must be able to:

- c1. complete, read, and examine previous scientific contributions,
- c2. synthesise and interpret results, in order to effectively communicate (*via* written, oral, graphical means) data and ideas to a range of colleagues,
- c3. conduct a range of field-based studies (e.g. geological mapping, sample collection and recording of field observations),
- c4. explain the geological structure and history of an area,
- c5. present geological data and theories using appropriate methods.

2.3.2 General Skills

On successful completion of the program the graduate should be able to:

- d1. draw and describe geological features, specimens and thin section,
- d2. use spreadsheets or other software to enter, manipulate and display numerical da-



ta.

- d3. organize and work effectively within a team, and evaluate performance of self and of team,
- d4. identify targets for personal, career and academic development,
- D5. communicate efficiently with peers and cooperate in projects.

3- Academic standards of the program

The Academic Reference Standards (ARS) of this program compile with the Standard Criteria for Postgraduate Programs published by the National Authority of Quality Assurance and Accreditation of Education in (2009). Specific Academic Reference Standards for Diploma in Geology were approved by the Council of Faculty of Science, Benha University in --/--/2015 (**Appendices 1, 2, 3, 4, 5 and 6**).

4- Reference indices (Benchmarks)

Not applied

5- Curriculum structure and contents of program

a- Program duration: 1 year

b- Program structure:

Program structure	Credit hours
Elective courses	6
Compulsory courses	18
Total	24

d- Program Courses:

Compulsory courses: 18 hrs

Code No.	Course Title	No. of hours		
		Lec- tures	Practical	Credit hours
545-G	Environmental Geophysics	2	-	2



546-G	Natural Resorces	3	-	3
547-G	GIS applications in Environmental geology	2	-	2
548-G	Geochemistry of Underground water	3	-	3
549-G	Water Pollution	3	-	3
550-G	Natural and Environmental Hazards	2	-	2
551-G	Isotope Geology	3	-	3

Elective courses: 6 hrs

Code No.	Course Title	No. of hours		
		Lec- tures	Practical	Credit hours
552-G	Waste management	3	-	3
553-G	Lab techniques in enviro-geology	3	-	3
554-G	Medical Geology	3	-	3
555-G	Land use planning	3	-	3
556-G	Environmental Impact analysis	3	-	3

Diploma 24 credit hours

6- Contents of the Courses

See course specification (**Appendix 7, 8**)

7- Program admission requirements

1. يشترط لقيد الطالب لأي من دبلومات الدراسات العليا أن يكون حاصلاً على درجة البكالوريوس في العلوم من إحدى الجامعات أو درجة معادلة لها من معهد علمي معترف به من المجلس الأعلى للجامعات وفقاً لشروط القبول في كل دبلوم.
2. مدة الدراسة عام دراسي واحد .

Admission is achieved on the basis of:

- Completion of a B.Sc. degree or any equivalent Arabic or international certificate.

8- Regulations for progression and program completion:



١. شرط حصول الطالب على درجة الدبلوم اجتياز عدد ٢٤ ساعة دراسية معتمدة منها ١٨ ساعة معتمدة مقررات إجبارية و ٦ ساعات دراسية معتمدة مقررات اختيارية ويخصص لكل ساعة معتمدة خمسون درجة.
٢. تعقد امتحانات الدراسة الخاصة بالدبلومة في نهاية كل فصل دراسي في المواعيد التي يقرها مجلس الكلية بناء علي اقتراح لجنة الدراسات العليا ويشترط لنجاح الطالب في المقررات الدراسية أن يكون حاصلًا في كل مقرر على تقدير C على الأقل، ويقدر نجاح الطالب على النحو المبين بالمادة (٨) من اللائحة.
٣. الطالب الذي يرسب في أي مقرر اجباري عليه اعادة دراسة ذلك المقرر والامتحان فيه وفي حالة رسوبه في مقرر اختياري فعليه دراسة ذلك المقرر أو اختيار مقرر آخر بديل له ويدخل تقدير المقرر في كلا حالتي الرسوب والنجاح في حساب المعدل الفصلي أو التراكمي.

- According to the bylaws of Benha Faculty of Science - the regulations for progression and program completion - the graduate must pass:
 - 12 elective credit hours.
 - ١8 compulsory credit hours.
- Student is considered absent, if he/she misses the final written exam with no acceptable excuse.

9- Methods and rules of evaluation of students in rolled in the program:

a- Courses evaluation:

Method of Assessment	Percent
Oral Exam	20%
Final Term Examination	80%
Total	100%

10- Methods of program evaluation:

Samples	Tool
1- Senior Students	Questionnaire



Benha University
Faculty of Science
Department of Geology



2- Alumni	Questionnaire
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Head of the Department: Prof. Mohamed A. El-Fakharany

Program coordinator: Prof. Basem Zoheir

Date: 2015/2016



**Benha University
Faculty of Science
Department of Geology**



Ore Geology Diploma Program Specification



Diploma in Ore Geology

A. Basic Information

Program Title:	Diploma in Ore Geology
Program Type:	Single
Department:	Geology
Coordinator:	Prof. Basem Zoheir
Assistant Co-ordinator:	
Dates of program specifications approval:	14/11/2012

B. Professional Information

1. Program Aims

The program aims to:

- a) demonstrate methods and value of study Ore Geology, and exposure to some areas of research at the cutting edge of the Earth Sciences,
- b) promote a thorough understanding of the theoretical and practical applications of Ore Geology and Ore genesis,
- c) train graduates on written, oral and presentation skills appropriate for a science graduate at the post graduate level;
- d) explore capabilities and develop a wide range of independent and team skills.

2. Intended Learning Outcomes (ILO's)

2.1 Knowledge and Understanding

By the end of the program, graduates must be able to:

- a1. explain the general principles and techniques of Geology, including the structure, composition and evolution of the Earth and its interrelationships with the hydrosphere, cryosphere, biosphere, and atmosphere and the perturbations of these systems by extraterrestrial influences,
- a2. describe the issues associated with exploitation of resources and the protection of the environment,



- a3. identify and interpret a range of geological materials in the laboratory and field; select appropriate techniques to enable this; and explain geological relationships,
- a4. describe the importance of geological materials as resources, their exploitation and associated Ore impact,
- a5. recognize the value of Ore geological studies for the society welfare.

2.2 Intellectual Skills

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d- Program Courses:

Compulsory courses: 18 hrs

Code No.	Course Title	No. of hours		
		Lectures	Practical	Credit hours
529 G	Geology of ore deposits	2	-	2
530 G	Industrial minerals	2	-	2



531 G	Ore minerals	2	-	2
532 G	Mine and quarry geology	2	-	2
533 G	Structural controls of ore deposits	2	-	2
534 G	Methods in mineral exploration	2	-	2
535 G	Ore deposits in Egypt	2	-	2
536 G	Geochemical exploration methods	2	-	2
537 G	Ore dressing and beneficiation	2	-	2

Elective courses: 6 hrs

Code No.	Course Title	No. of hours		
		Lec- tures	Practical	Credit hours
538 G	Principals of the mineral deposits	2	-	2
539 G	Laboratory techniques in Geology	2	-	2
540 G	Environmental impact of mining processes	2	-	2
541 G	Advanced igneous and metamorphic rocks	2	-	2
542 G	Introduction in mineral economics	2	-	2
543 G	Applications of remote sensing and GIS in ore deposits	2	-	2
544 G	Role of underground water in ore deposits	2	-	2

Diploma 24 credit hours

6- Contents of the Courses

See course specification (**Appendix 7, 8**)

7- Program admission requirements

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a- Courses evaluation:

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Total	100%

10- Methods of program evaluation:



Samples	Tool
1- Senior Students	Questionnaire
2- Alumni	Questionnaire

Head of the Department: Prof. Mohamed A. El-Fakharany

Program coordinator: Prof. Basem Zoheir

Date: 2015/2016