Petroleum and hydrogeology Ph.D. Program Specification

Ph.D. in petroleum and hydrogeology

A. Basic Information

Program Title: Ph.D. petroleum and hydrogeology
Program Type: Single
Department: Geology
Coordinator: Prof. Mohamed ElFakharany
Assistant Co-ordinator:
Dates of program specifications approval: 14/11/2012

B. Professional Information

1. Program Aims
By the end of the program, graduates must be able to:

a)   familiarize with the various topics related to the stat-of-the-art research in petroleum and hydro-geology.
b)   implement field and laboratory procedures related to the research petroleum and hydrogeology.
c)   obtain innovative ideas and effectively communicate through written, oral and graphical means,
d)   innovate ideas of research projects and communicate with national and international experts

2. Intended Learning Outcomes (ILO's)

2.1 Knowledge and Understanding
By the end of the program, graduates must be able to:

a1.   dominstrate the essential theoretical bases, procedures and techniques used for petroleum and hydrogeology.
a2.   review a robust background about the various auxiliary geosciences disciplines necessary to carry out petroleum and hydrogeology.
a3.   state the origin and characteristics of petroleum and water.
a4.   identify the contained compounds and their economic and domestic uses.
a5.   recognize the different types of geochemical, petrophysical, and geophysical methods used in petroleum and hydrogeology research.

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

b1. conduct original research in water and petroleum geology based on field and laboratory observations and analyses, as well as published scientific work.
b2. make sound and plausible interpretations of field and laboratory observations and analyses.
b3. Apply gained knowledge and experience to perform specific tasks and solve scientific problems.
b4. formulate logical hypotheses to explain research outcomes with the ability to work toward proving them.
b5. think of proposed ideas and published work in terms of their scientific validity and integrity.

2.3 Skills

2.3.1 Professional and Practical Skills
By the end of the program, graduates must be able to:

c1. comile, read, and examine previous scientific contributions,
c2. interpret the various forms of geologic data (maps, logs, satellite images, etc.),
c3. identify the different types of hydrocarbons and water resources.
c4. familiarize with the various laboratory equipments and methodologies pertained to water and petroleum geology
c5. run specialized computer software to present and manipulate research data.

2.3.2 General Skills

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

d1. use information and communication technology means in research approaches,
d2. think independently, set tasks and solve problems on scientific basis,
d3. integrate with a group; manage time, and positively collaborate and communicate with others,
d4. acquire self- and long life- learning strategies.
d5. communicate smoothly and efficiently with peers and experts.

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 Ph.D. in Goology 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- Curricullum structure and contents of program
   a- Program duration: 3-5 years
   b- Program structure:
- 12 elective credit hours.
- 48 credit hours for the preparation of final thesis.

Program structure	Credit hours
Elective courses	**12**
Research and preparing the Ph.D. thesis	**48**
Total	**60**

  d- Program Courses:

    Elective courses:

Code No.	Course Title	No. of hours		
		Lectures	Practical	Credit hours
701-G	Advanced petroleum Geology(II)	3	-	3
702-G	Petroleum Geology of Egypt (I)	3	-	3
703-G	Petroleum Geology of Egypt (II)	3	-	3
704-G	Petroleum Geology of Arabian Basins (I)	3	-	3
705-G	Petroleum Geology of Arabian Basins (II)	3	-	3
706-G	Sequence stratigraphy	3	-	3
707-G	Advanced Hydrogeology (II)	3	-	3
708-G	Hydrogeology of Egypt(II)	3	-	3
709-G	Surface and groundwater Pollution	3	-	3
710-G	Advanced drainage pattern analysis	3	-	3
711-G	Management , modeling and treatment of groundwater reservoir	3	-	3
712-G	Advanced Hydrogeochemistry (II)	3	-	3

Ph.D. Thesis   48 credit hours

6- Contents of the Courses

    See course specification (**Appendix 4**)

7- Program admission requirements

١. يشترط لقيد الطالب لنيل درجة دكتوراه الفلسفة في العلوم أن يكون حاصلا على درجة ماجستير في العلوم في نفس التخصص من كلية العلوم جامعة بنها أو أى درجة معادلة لها من معهد علمي أخر معترف به من المجلس الأعلى للجامعات.

٢. المدة اللازمة للحصول على درجة دكتوراه الفلسفة في العلوم ثلاث سنوات على الأقل منذ موافقة الجامعة علي التسجيل، وبحد أقصي خمس سنوات (المدة الأساسية) ويمكن مد التسجيل لمدة استثنائية لا تزيد عن ثلاث سنوات بناءا على التقارير العلمية المقدمة من لجنة الأشرف وموافقة مجلس القسم العلمي المختص ولجنة الدراسات العليا والبحوث ومجلس الكلية ومجلس الدراسات العليا والبحوث بالجامعة.

٣. يشترط لتسجيل الطالب لدرجة دكتوراه الفلسفة في العلوم اجتياز امتحان اتقان اللغة الانجليزية او ما يعادلها بمستوى يحدده مجلس الجامعة وكذلك استيفاء أى شروط أضافية تراها الكلية والجامعة لازمة للقيد والتسجيل للدرجة.

Admission is achieved on the basis of:
- Completion of a M.Sc. degree or any equivalent Arabic or international certificate.
- Passing the TOFEL test with the score determined by the University Council.
- Meeting any additional conditions the college and university deems necessary to register for the Ph.D. degree.

8- Regulations for progression and program completion:

١. أن ينجز الطالب عدد ١٢ ساعة دراسية معتمدة من المقررات الدراسية لمرحلة ما بعد الماجستيرمتزامنة مع التسجيل للرسالة العلمية (تحسب ٤٨ ساعة معتمدة) ويخصص لكل ساعة معتمدة خمسون درجة.

٢. يقوم الطالب باجراء مناقشة علنية لخطة البحث (سيمينار) على أن يوافق عليها مجلس القسم تمهيدا لتسجيله للدرجة.

٣. تعقد امتحانات الدراسة الخاصة بالدكتوراه في نهاية كل فصل دراسي في المواعيد التي يقرها مجلس الكلية بناءً علي اقتراح مجالس الأقسام.

٤. يقوم الطالب باجراء بحث ذا قيمة علمية تمثل إضافة علمية جديدة قائمة علي البحث المبتكر في موضوع يقره مجلس القسم ولجنة الدراسات العليا و مجلس الكلية ومجلس الدراسات العليا بالجامعة على أن يقدم الطالب نتائج بحثه في رسالة تقبلها لجنة الحكم، و يقوم الطالب بعمل سيمينار قبل التقدم بالرسالة بثلاثة اشهر علي الأقل.

٥. يمنح الطالب درجة دكتوراه الفلسفة في العلوم ويذكر في الشهادة التخصص العام والدقيق وعنوان الرسالة.

٦. يرجع للائحة التنفيذية لقانون تنظيم الجامعات فيما لم يرد به نص في هذه اللائحة.

- According to the bylaws of Benha Faculty of Science - the regulations for progression and program completion - the graduate must pass:
  - 12 elective credit hours.
  - 48 credit hours for preparing the Ph.D. Thesis.
- Get 3 computer courses.
- Give 2 seminars approved by Department Council.
- 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%

b- Doctorate Thesis evaluation:

- The senior supervisor reports.
- Individual Reports of the Judging Committee (Three specialist professors including the senior supervisor).
- The Public Discussion
- The Common Report of the Judging Committee.
- Department, Faculty and University Boards.

- Assessment and Recommendations:
-The Judge Committee has to recommend one of the following:
- Accepting the thesis as it is.
- Accepting the thesis and recommends awarding after correction performing.
- Delaying awarding for maximum three months to perform corrections.
- Re-displaying the thesis to the judging committee within limited period.
- Rejecting the thesis at all.

10- Methods of program evaluation:

Samples	Tool

1- Senior Students	Questionnaire
2- Alumni	Questionnaire
3- External Evaluators	Reports
4- Stakeholders	Questionnaire, workshops, seminars, conferences

Head of the Department: Prof. Mohamed A. El-Fakharany
  Program coordinator: Assi.Prof. Wafaa elshahat

Date: 2015/2016

Structural Geology and Geotectonics
Ph.D. Program Specification

Ph.D. in Structural Geology and Geotectonics

A. Basic Information

Program Title: Ph.D. in Structural Geology and Geotectonics
Program Type: Single
Department: Geology
Coordinator: Prof. Zakaria Hamimi
Assistant Co-ordinator:
Dates of program specifications approval: 14/11/2012

B. Professional Information

1. Program Aims
By the end of the program, graduates must be able to:

a)   recognize the various topics related to the stat-of-the-art research in Structural Geology and Geotectonics,
b)   undertake the different field and laboratory procedures related to the research in Structural Geology and Geotectonics, .
c)   synthesize innovative ideas and effectively communicate through written, oral and graphical means,
d)   Innovate ideas of research projects and communicate with national and international experts.

2. Intended Learning Outcomes (ILO's)

2.1 Knowledge and Understanding
By the end of the program, graduates must be able to:

a.1   dominstrate the essential theoretical bases, procedures and techniques used to identify Structural Geology and Geotectonics
a.2   review a robust background about the various auxiliary geosciences disciplines necessary to carry out Structural Geology and Geotectonics research.
a.3   state the origin and characteristics of Structural Geology and Geotectonics .
a.4   identify the different types of structures and geotectonic theories and their use in paleoenvironmental and paleoclimatic interpretations..
a.5   recognize the different types of geochemical, petrophysical, and geophysical methods used in Structural Geology and Geotectonics Structural Geology and Geotectonics research.

2

2.2 Intellectual Skills

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

b.1   conduct original research in Structural Geology and Geotectonics based on field and laboratory observations and analyses, as well as published scientific work.

b.2   make sound and plausible interpretations of field and laboratory observations and analyses.

b.3   Apply gained knowledge and experience to perform specific tasks and solve scientific problems.

b.4   formulate logical hypotheses to explain research outcomes with the ability to work toward proving them.

b.5   think of proposed ideas and published work in terms of their scientific validity and integrity.

2.3 Skills

2.3.1 Professional and Practical Skills

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

c.1   comile, read, and examine previous scientific contributions,

c.2   interpret the various forms of geologic data (maps, logs, satellite images, etc.),

c.3   identify the different mechanisms of Structures and Geotectonics .

c.4   familiarize with the various laboratory equipments and methodologies pertained to Structural Geology and Geotectonics **.**

c.5   run specialized computer software to present and manipulate research data.

2.3.2 General Skills

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

d1.   use information and communication technology means in research approaches,

d2.   think independently, set tasks and solve problems on scientific basis,

d3.   integrate with a group; manage time, and positively collaborate and communicate with others,

d4.   acquire self- and long life- learning strategies.

d5.   communicate smoothly and efficiently with peers and experts.

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 Ph.D. in Goology 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- Curricullum structure and contents of program

a- Program duration: 3-5 years

b- Program structure:

- 12 elective credit hours.
- 48 credit hours for the preparation of final thesis.

Program structure	Credit hours
Elective courses	**12**
Research and preparing the Ph.D. thesis	**48**
Total	**60**

d- Program Courses:

Elective courses:

Code No.	Course Title	No. of hours		
		Lectures	Practical	Credit hours
728-G	Advanced structural geology	3	-	3
729-G	Advanced Geotectonics	3	-	3
730-G	Remote sensing	3	-	3
731-G	Advanced GIS	3	-	3
732-G	Analysis of sedimentary basins	3	-	3
733-G	Geomorphology	3	-	3
734-G	Microstructures of the metamorphic rocks	3	-	3

Ph.D. Thesis   48 credit hours

6- Contents of the Courses

See course specification (**Appendix 7**)

7- Program admission requirements

١. يشترط لقيد الطالب لنيل درجة دكتوراه الفلسفة في العلوم أن يكون حاصلا على درجة ماجستير في العلوم في نفس التخصص من كلية العلوم جامعة بنها أو أى درجة معادلة لها من معهد علمي أخر معترف به من المجلس الأعلى للجامعات.

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8- Regulations for progression and program completion:

١. أن ينجز الطالب عدد ١٢ ساعة دراسية معتمدة من المقررات الدراسية لمرحلة ما بعد الماجستير متزامنة مع التسجيل للرسالة العلمية (تحسب ٤٨ ساعة معتمدة) ويخصص لكل ساعة معتمدة خمسون درجة.

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٤. يقوم الطالب باجراء بحث ذا قيمة علمية تمثل إضافة علمية جديدة قائمة علي البحث المبتكر في موضوع يقره مجلس القسم ولجنة الدراسات العليا و مجلس الكلية ومجلس الدراسات العليا بالجامعة على أن يقدم الطالب نتائج بحثه في رسالة تقبلها لجنة الحكم، و يقوم الطالب بعمل سيمينار قبل التقدم بالرسالة بثلاثة اشهر علي الأقل.

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a- Courses evaluation:

Method of Assessment	Percent
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Total	100%

b- Doctorate Thesis evaluation:

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- The Public Discussion
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- Assessment and Recommendations:
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10- Methods of program evaluation:

Samples	Tool
1- Senior Students	Questionnaire

2- Alumni	Questionnaire
3- External Evaluators	Reports
4- Stakeholders	Questionnaire, workshops, seminars, conferences

Head of the Department: Prof. Mohamed A. El-Fakharany
   Program coordinator: Prof. Zakaria Hamimi

Date: 2015/2016

Benha University
Faculty of Science
Department of Geology

Applied Geophysics
Ph.D. Program Specification

Ph.D. Minerals, rocks and ore deposits

A. Basic Information

Program Title: Ph.D. Applied Geophysics
Program Type: Single
Department: Geology
Coordinator: Assi.Prof. Wafaa elshahat
Assistant Co-ordinator:
Dates of program specifications approval: 14/11/2012

B. Professional Information

1. Program Aims
By the end of the program, graduates must be able to:

a)   compile full awareness of the various topics related to the stat-of-the-art research in Applied Geophysics.
b)   manage and undertake the different field and laboratory procedures related to the research in Applied Geophysics.
c)   boost their ability to synthesize innovative ideas and effectively communicate through written, oral and graphical means.
d)   update knowledge in research and appolication subjects of Geophysics,

2. Intended Learning Outcomes (ILO's)

2.1 Knowledge and Understanding
By the end of the program, graduates must be able to:

a1   demonstrate the essential theoretical bases, procedures and techniques used for Applied Geophysics**.**
a2   state the applications of Applied Geophysics in economy and environment .
a3   identify the different geological, geophysical and geochemical techniques used in exploration for Applied Geophysics,
a4   recognize the well-planned and organized methods of collecting, tabulating, representing and indexing the geophysical data and results.
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2.2 Intellectual Skills

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

b1   conduct original research in Applied Geophysics based on field and laboratory observations and analyses, as well as published scientific work.

b2   make sound and plausible interpretations of field and laboratory observations and analyses.

b3   apply gained knowledge and experience to perform specific tasks and solve scientific problems.

b4   formulate logical hypotheses to explain research outcomes with the ability to work toward proving them.

2.3 Skills

2.3.1 Professional and Practical Skills

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

c1   comile, read, and examine previous scientific contributions,

c2   interpret the various forms of geologic data (maps, logs, satellite images, etc.),

c3   familiarize with the various laboratory equipments and methodologies pertained to Applied Geophysics.

c4   run specialized computer software to present and manipulate research data.

2.3.2 General Skills

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

d.1   use information and communication technology means in research approaches,

d.2   think independently, set tasks and solve problems on scientific basis,

d.3   integrate with a group; manage time, and positively collaborate and communicate with others,

d.4   acquire self- and long life- learning strategies.

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 Ph.D. in Goology 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- Curricullum structure and contents of program
   a- Program duration: 3-5 years
   b- Program structure:
   ▪ 12 elective credit hours.
   ▪ 48 credit hours for the preparation of final thesis.

Program structure	Credit hours
Elective courses	12
Research and preparing the Ph.D. thesis	48
Total	60

d- Program Courses:

Elective courses:

Code No.	Course Title	No. of hours		
		Lec-tures	Practical	Credit hours
772-G	Advanced Gravity methods	3	-	3
773-G	Advanced Magnetic methods	3	-	3
774-G	Advanced Electric methods	3	-	3
775-G	Advanced Electromagnetic methods	3	-	3
776-G	Advanced Seismic refraction methods	3	-	3
777-G	Advanced Seismic reflection methods	3	-	3
778-G	Advanced Well logging	3	-	3
779-G	Advanced Radiometric methods	3	-	3
780-G	Advanced Seismology	3	-	3
781-G	Complete Exploration	3	-	3

782-G	Marine Geophysics	3	-	3
783-G	Environmental Geophysics	3	-	3
729-G	Advanced Geotectonic	3	-	3

Ph.D. Thesis   48 credit hours

6- Contents of the Courses

See course specification (**Appendix 4**)

7- Program admission requirements

١. يشترط لقيد الطالب لنيل درجة دكتوراه الفلسفة في العلوم أن يكون حاصلا على درجة ماجستير في العلوم في نفس التخصص من كلية العلوم جامعة بنها أو أى درجة معادلة لها من معهد علمي أخر معترف به من المجلس الأعلى للجامعات.

٢. المدة اللازمة للحصول على درجة دكتوراه الفلسفة في العلوم ثلاث سنوات على الأقل منذ موافقة الجامعة علي التسجيل، وبحد أقصي خمس سنوات (المدة الأساسية) ويمكن مد التسجيل لمدة استثنائية لا تزيد عن ثلاث سنوات بناءا على التقارير العلمية المقدمة من لجنة الأشرف وموافقة مجلس القسم العلمي المختص ولجنة الدراسات العليا والبحوث ومجلس الكلية ومجلس الدراسات العليا والبحوث بالجامعة.

٣. يشترط لتسجيل الطالب لدرجة دكتوراه الفلسفة في العلوم اجتياز امتحان اتقان اللغة الانجليزية او ما يعادلها بمستوى يحدده مجلس الجامعة وكذلك استيفاء أى شروط أضافية تراها الكلية والجامعة لازمة للقيد والتسجيل للدرجة.

Admission is achieved on the basis of:
- Completion of a M.Sc. degree or any equivalent Arabic or international certificate.
- Passing the TOFEL test with the score determined by the University Council.
- Meeting any additional conditions the college and university deems necessary to register for the Ph.D. degree.

8- Regulations for progression and program completion:

١. أن ينجز الطالب عدد 12 ساعة دراسية معتمدة من المقررات الدراسية لمرحلة ما بعد الماجستيرمتزامنة مع التسجيل للرسالة العلمية (تحسب 48 ساعة معتمدة) ويخصص لكل ساعة معتمدة خمسون درجة.

٢. يقوم الطالب باجراء مناقشة علنية لخطة البحث (سيمينار) على أن يوافق عليها مجلس القسم تمهيدا لتسجيله للدرجة.

٣. تعقد امتحانات الدراسة الخاصة بالدكتوراه في نهاية كل فصل دراسي في المواعيد التي يقرها مجلس الكلية بناءً علي اقتراح مجالس الأقسام.

٤. يقوم الطالب باجراء بحث ذا قيمة علمية تمثل إضافة علمية جديدة قائمة علي البحث المبتكر في موضوع يقره مجلس القسم ولجنة الدراسات العليا و مجلس الكلية ومجلس الدراسات العليا بالجامعة على أن يقدم الطالب نتائج بحثه في رسالة تقبلها لجنة الحكم، و يقوم الطالب بعمل سيمينار قبل التقدم بالرسالة بثلاثة اشهر علي الأقل.

٥. يمنح الطالب درجة دكتوراه الفلسفة في العلوم ويذكر في الشهادة التخصص العام والدقيق وعنوان الرسالة.

٦. يرجع للائحة التنفيذية لقانون تنظيم الجامعات فيما لم يرد به نص في هذه اللائحة.

- According to the bylaws of Benha Faculty of Science - the regulations for progression and program completion - the graduate must pass:
    - 12 elective credit hours.
    - 48 credit hours for preparing the Ph.D. Thesis.
- Get 3 computer courses.
- Give 2 seminars approved by Department Council.
- 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%

b- Doctorate Thesis evaluation:
- The senior supervisor reports.
- Individual Reports of the Judging Committee (Three specialist professors including

the senior supervisor).
- The Public Discussion
- The Common Report of the Judging Committee.
- Department, Faculty and University Boards.

- Assessment and Recommendations:
-The Judge Committee has to recommend one of the following:
- Accepting the thesis as it is.
- Accepting the thesis and recommends awarding after correction performing.
- Delaying awarding for maximum three months to perform corrections.
- Re-displaying the thesis to the judging committee within limited period.
- Rejecting the thesis at all.

10- Methods of program evaluation:

Samples	Tool
1- Senior Students	Questionnaire
2- Alumni	Questionnaire
3- External Evaluators	Reports
4- Stakeholders	Questionnaire, workshops, seminars, conferences

Head of the Department: Prof. Mohamed A. El-Fakharany
   Program coordinator: Assi.Prof. Wafaa elshahat

Date: 2015/2016

Benha University
Faculty of Science
Department of Geology

Minerals, Rocks and Ore deposits
Ph.D. Program Specification

Ph.D. in Minerals, Rocks, and Ore deposits

A. Basic Information

Program Title: Ph.D. in Minerals, Rocks, and Ore deposits
Program Type: Single
Department: Geology
Coordinator: Prof. Basem A Zoheir
Assistant Co-ordinator:
Dates of program specifications approval: 14/11/2012

B. Professional Information

1. Program Aims
By the end of the Ph.D. in Minerals, Rocks, and Ore deposits program, graduates must be able to:

a)   compile full awareness of the various topics related to the stat-of-the-art research in Mineralogy, Petrology and Ore deposits,

b)   manage and undertake the different field and laboratory procedures related to the research in Mineralogy, Petrology and Ore deposits,

c)   boost their ability to synthesize innovative ideas and effectively communicate through written, oral and graphical means.

d)   work independently and with a group in research and industry related to Mineralogy, Petrology and Ore deposits and relevant subjects.

2. Intended Learning Outcomes (ILO's)

2.1 Knowledge and Understanding
By the end of the Ph.D. in Minerals, Rocks, and Ore deposits program, graduates must be able to:

a1.   domenstrate the essential theoretical bases, procedures and techniques used for Mineralogy, Petrology and Ore deposits field studies and related laboratory analyses,

a2.   review a robust background about the various auxiliary geosciences disciplines necessary to carry out Mineralogy, Petrology and Ore deposits research,

a3.   state the origin and characteristics of the main rock types, rock structures, sedimentary basin analysis, and crystallization systems,

a4.   identify the mineral composition of the igneous and metamorphic rocks and their use in formation conditions and genetic interpretations,

a5.   recognize the different types of geochemical, petrological, and mineralogical methods used in

2

Mineralogy, Petrology and Ore deposits studies.

2.2 Intellectual Skills

By the end of the Ph.D. in Minerals, Rocks, and Ore deposits program, graduates must be able to:

b1. conduct original research in Mineralogy, Petrology and Ore deposits based on field and laboratory observations and analyses, as well as published scientific work,
b2. make sound and plausible interpretations of field and laboratory observations and analyses,
b3. apply gained knowledge and experience to perform specific tasks and solve scientific problem,
b4. formulate logical hypotheses to explain research outcomes with the ability to work toward proving them,
b5. think of proposed ideas and published work in terms of their scientific validity and integrity.

2.3 Skills

2.3.1 Professional and Practical Skills

On successful completion of the program the graduate should be able to:
c1. comile, read, and examine previous scientific contributions,
c2. interpret the various forms of geologic data (maps, logs, satellite images, etc.),
c3. identify the different mineral groups and their economic significance,
c4. familiarize with the various laboratory equipments and methodologies pertained to Mineralogy, Petrology and Ore deposits research,
c5. run specialized computer software to present and manipulate research data.

2.3.2 General Skills

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

d1. use information and communication technology means in research approaches,
d2. think independently, set tasks and solve problems on scientific basis,
d3. integrate with a group; manage time, and positively collaborate and communicate with others,
d4. acquire self- and long life- learning strategies,
d5. adhere to the general ethics and copyright in research and industrial applications.

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 Ac-

creditation of Education in (2009). Specific Academic Reference Standards for Ph.D. in Goology 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- Curricullum structure and contents of program
a- Program duration: 3-5 years
b- Program structure:
- 12 elective credit hours.
- 48 credit hours for the preparation of final thesis.

Program structure	Credit hours
Elective courses	12
Research and preparing the Ph.D. thesis	48
Total	60

d- Program Courses:

Elective courses:

Code No.	Course Title	No. of hours		
		Lectures	Practical	Credit hours
713G	Advanced igneous and metamorphic petrology	2	-	2
714 G	Advanced Mineralogy	2	-	2
715 G	Advanced sedimentary petrology	2	-	2
716 G	Advanced clay mineralogy	2	-	2
717 G	Stable and isotope geochemistry	2	-	2
718 G	Remote sensing and GIS and ore deposits	2	-	2
719 G	Advanced Geochemistry	2	-	2
720 G	Mineral economics	2	-	2
721 G	Advanced ore geology	2	-	2
722 G	Exploration methods for ore deposits	2	-	2
723 G	Selective topics	2	-	2
724 G	Analytical techniques in Geosciences	2	-	2
725 G	Mine Geology	2	-	2
726 G	Minerals and rocks used in industry	2	-	2

727 G	Ore microscopy	2	-	2

Ph.D. Thesis   48 credit hours

6- Contents of the Courses

See course specification (**Appendix 6, 7**)

7- Program admission requirements

١. يشترط لقيد الطالب لنيل درجة دكتوراه الفلسفة في العلوم أن يكون حاصلا على درجة ماجستير في العلوم في نفس التخصص من كلية العلوم جامعة بنها أو أى درجة معادلة لها من معهد علمي أخر معترف به من المجلس الأعلى للجامعات.

٢. المدة اللازمة للحصول على درجة دكتوراه الفلسفة في العلوم ثلاث سنوات على الأقل منذ موافقة الجامعة علي التسجيل، وبحد أقصي خمس سنوات (المدة الأساسية) ويمكن مد التسجيل لمدة استثنائية لا تزيد عن ثلاث سنوات بناءا على التقارير العلمية المقدمة من لجنة الأشرف وموافقة مجلس القسم العلمي المختص ولجنة الدراسات العليا والبحوث ومجلس الكلية ومجلس الدراسات العليا والبحوث بالجامعة.

٣. يشترط لتسجيل الطالب لدرجة دكتوراه الفلسفة في العلوم اجتياز امتحان اتقان اللغة الانجليزية او ما يعادلها بمستوى يحدده مجلس الجامعة وكذلك استيفاء أى شروط أضافية تراها الكلية والجامعة لازمة للقيد والتسجيل للدرجة.

Admission is achieved on the basis of:
- Completion of a M.Sc. degree or any equivalent Arabic or international certificate.
- Passing the TOFEL test with the score determined by the University Council.
- Meeting any additional conditions the college and university deems necessary to register for the Ph.D. degree.

8- Regulations for progression and program completion:

١. أن ينجز الطالب عدد ١٢ ساعة دراسية معتمدة من المقررات الدراسية لمرحلة ما بعد الماجستيرمتزامنة مع التسجيل للرسالة العلمية (تحسب ٤٨ ساعة معتمدة) ويخصص لكل ساعة معتمدة خمسون درجة.

٢. يقوم الطالب باجراء مناقشة علنية لخطة البحث (سيمينار) على أن يوافق عليها مجلس القسم تمهيدا لتسجيله للدرجة.

٣. تعقد امتحانات الدراسة الخاصة بالدكتوراه في نهاية كل فصل دراسي في المواعيد التي يقرها مجلس الكلية بناءً علي اقتراح مجالس الأقسام.

٤. يقوم الطالب باجراء بحث ذا قيمة علمية تمثل إضافة علمية جديدة قائمة علي البحث المبتكر في موضوع يقره مجلس القسم ولجنة الدراسات العليا و مجلس الكلية ومجلس الدراسات العليا بالجامعة على أن يقدم الطالب نتائج بحثه في رسالة تقبلها لجنة الحكم، و يقوم الطالب بعمل سيمينار قبل التقدم بالرسالة بثلاثة اشهر علي الأقل.

٥. يمنح الطالب درجة دكتوراه الفلسفة في العلوم ويذكر في الشهادة التخصص العام والدقيق وعنوان الرسالة.

٦. يرجع للائحة التنفيذية لقانون تنظيم الجامعات فيما لم يرد به نص في هذه اللائحة.

- According to the bylaws of Benha Faculty of Science - the regulations for progression and program completion - the graduate must pass:
  - 12 elective credit hours.
  - 48 credit hours for preparing the Ph.D. Thesis.
- Get 3 computer courses.
- Give 2 seminars approved by Department Council.
- 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%

b- Doctorate Thesis evaluation:

- The senior supervisor reports.
- Individual Reports of the Judging Committee (Three specialist professors including the senior supervisor).
- The Public Discussion
- The Common Report of the Judging Committee.
- Department, Faculty and University Boards.

- Assessment and Recommendations:

-The Judge Committee has to recommend one of the following:

- Accepting the thesis as it is.

- Accepting the thesis and recommends awarding after correction performing.
- Delaying awarding for maximum three months to perform corrections.
- Re-displaying the thesis to the judging committee within limited period.
- Rejecting the thesis at all.

10- Methods of program evaluation:

Samples	Tool
1- Senior Students	Questionnaire
2- Alumni	Questionnaire
3- External Evaluators	Reports
4- Stakeholders	Questionnaire, workshops, seminars, conferences

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

Date: 2015/2016

Sedimentary Petrology and Sedimentation Ph.D. Program Specification

Ph.D. in Sedimentary Petrology and Sedimentation

A. Basic Information

Program Title: Ph.D. in Sedimentary Petrology and Sedimentation
Program Type: Single
Department: Geology
Coordinator: Prof. Sayed Mahfouz
Assistant Co-ordinator:
Dates of program specifications approval: 14/11/2012

B. Professional Information

1. Program Aims
By the end of the program, graduates must be able to:

a)   recognize the various topics related to the stat-of-the-art research in sedimentation and sedimentary Rocks
b)   use the different field and laboratory procedures related to the research in sedimentation and sedimentary Rocks.
c)   communicate through written, oral and graphical means.
d)   train graduates on novel projects and team work spirit.

2. Intended Learning Outcomes (ILO's)

2.1 Knowledge and Understanding
By the end of the program, graduates must be able to:

a1   dominstrate the essential theoretical bases, procedures and techniques used toidentify sedimentation and sedimentary Rocks
a2   review a robust background about the various auxiliary geosciences disciplines necessary to carry out sedimentation and sedimentary Rocks research.
a3   state the origin and characteristics of sedimentation and sedimentary Rocks.
a4   identify the contained minerals, fossils and organic matter in the sedimentary rocks and their use in paleoenvironmental and paleoclimatic interpretations..
a5   recognize the different types of geochemical, petrophysical, and geophysical methods used in sedimentation and sedimentary Rocks research.

2.2 Intellectual Skills

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

b1   conduct original research in sedimentation and sedimentary Rocks based on field and laboratory observations and analyses, as well as published scientific work.
b2   make sound and plausible interpretations of field and laboratory observations and analyses.
b3   Apply gained knowledge and experience to perform specific tasks and solve scientific problems.
b4   formulate logical hypotheses to explain research outcomes with the ability to work toward proving them.
b5   think of proposed ideas and published work in terms of their scientific validity and integrity.

2.3 Skills

2.3.1 Professional and Practical Skills
By the end of the program, graduates must be able to:

c1   comile, read, and examine previous scientific contributions,
c2   interpret the various forms of geologic data (maps, logs, satellite images, etc.),
c3   identify the different types sedimentation process and sedimentary Rocks.
c4   familiarize with the various laboratory equipments and methodologies pertained to sedimentation and sedimentary Rocks**.**
c5   run specialized computer software to present and manipulate research data.

2.3.2 General Skills

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

d1   use information and communication technology means in research approaches,
d2   think independently, set tasks and solve problems on scientific basis,
d3   integrate with a group; manage time, and positively collaborate and communicate with others,
d4   acquire self- and long life- learning strategies.
d5.   adhere to the general ethics and respect copyrights.

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 Ph.D. in Goology 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- Curricullum structure and contents of program
a- Program duration: 3-5 years
b- Program structure:
- 12 elective credit hours.
- 48 credit hours for the preparation of final thesis.

Program structure	Credit hours
Elective courses	**12**
Research and preparing the Ph.D. thesis	**48**
Total	**60**

d- Program Courses:

Elective courses:

Code No.	Course Title	No. of hours		
		Lectures	Practical	Credit hours
755-G	Sandstone and conglomerate (II)	3	-	3
756-G	Shale and claystones (II)	3	-	3
757-G	Carbonate and evaporate rocks (II)	3	-	3
758-G	Silicte and phosphate rocks (II)	3	-	3
759-G	Diagenetic processes (II)	3	-	3
760-G	Advanced paleoenvironments (II)	3	-	3
761-G	Geomorphology and Karst formation (II)	3	-	3
762-G	Basin Analysis	3	-	3
763-G	Geochemistry of sedimentary rocks	3	-	3
748-G	Advanced Stratigraphy (II)	3	-	3
764-G	Special course	3	-	3

Ph.D. Thesis   48 credit hours

6- Contents of the Courses

See course specification (**Appendix 7**)

7- Program admission requirements

١. يشترط لقيد الطالب لنيل درجة دكتوراه الفلسفة في العلوم أن يكون حاصلا على درجة ماجستير في العلوم في نفس التخصص من كلية العلوم جامعة بنها أو أى درجة معادلة لها من معهد علمي أخر معترف به من المجلس الأعلى للجامعات.

٢. المدة اللازمة للحصول على درجة دكتوراه الفلسفة في العلوم ثلاث سنوات على الأقل منذ موافقة الجامعة علي التسجيل، وبحد أقصي خمس سنوات (المدة الأساسية) ويمكن مد التسجيل لمدة استثنائية لا تزيد عن ثلاث سنوات بناءا على التقارير العلمية المقدمة من لجنة الأشرف وموافقة مجلس القسم العلمي المختص ولجنة الدراسات العليا والبحوث ومجلس الكلية ومجلس الدراسات العليا والبحوث بالجامعة.

٣. يشترط لتسجيل الطالب لدرجة دكتوراه الفلسفة في العلوم اجتياز امتحان اتقان اللغة الانجليزية او ما يعادلها بمستوى يحدده مجلس الجامعة وكذلك استيفاء أى شروط أضافية تراها الكلية والجامعة لازمة للقيد والتسجيل للدرجة.

Admission is achieved on the basis of:
- Completion of a M.Sc. degree or any equivalent Arabic or international certificate.
- Passing the TOFEL test with the score determined by the University Council.
- Meeting any additional conditions the college and university deems necessary to register for the Ph.D. degree.

8- Regulations for progression and program completion:

١. أن ينجز الطالب عدد ١٢ ساعة دراسية معتمدة من المقررات الدراسية لمرحلة ما بعد الماجستيرمتزامنة مع التسجيل للرسالة العلمية (تحسب ٤٨ ساعة معتمدة) ويخصص لكل ساعة معتمدة خمسون درجة.

٢. يقوم الطالب باجراء مناقشة علنية لخطة البحث (سيمينار) على أن يوافق عليها مجلس القسم تمهيدا لتسجيله للدرجة.

٣. تعقد امتحانات الدراسة الخاصة بالدكتوراه في نهاية كل فصل دراسي في المواعيد التي يقرها مجلس الكلية بناءً علي اقتراح مجالس الأقسام.

٤. يقوم الطالب باجراء بحث ذا قيمة علمية تمثل إضافة علمية جديدة قائمة علي البحث المبتكر في موضوع يقره مجلس القسم ولجنة الدراسات العليا و مجلس الكلية ومجلس الدراسات العليا بالجامعة على أن يقدم الطالب نتائج بحثه في رسالة تقبلها لجنة الحكم، و يقوم الطالب بعمل سيمينار قبل التقدم بالرسالة بثلاثة اشهر علي الأقل.

٥. يمنح الطالب درجة دكتوراه الفلسفة في العلوم ويذكر في الشهادة التخصص العام والدقيق وعنوان الرسالة.

٦. يرجع للائحة التنفيذية لقانون تنظيم الجامعات فيما لم يرد به نص في هذه اللائحة.

▪ According to the bylaws of Benha Faculty of Science - the regulations for progression and program completion - the graduate must pass:
  - 12 elective credit hours.
  - 48 credit hours for preparing the Ph.D. Thesis.
▪ Get 3 computer courses.
▪ Give 2 seminars approved by Department Council.
▪ 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%

b- Doctorate Thesis evaluation:

- The senior supervisor reports.
- Individual Reports of the Judging Committee (Three specialist professors including the senior supervisor).
- The Public Discussion
- The Common Report of the Judging Committee.
- Department, Faculty and University Boards.

● Assessment and Recommendations:
-The Judge Committee has to recommend one of the following:
- Accepting the thesis as it is.
- Accepting the thesis and recommends awarding after correction performing.
- Delaying awarding for maximum three months to perform corrections.
- Re-displaying the thesis to the judging committee within limited period.
- Rejecting the thesis at all.

10- Methods of program evaluation:

Samples	Tool

1- Senior Students	Questionnaire
2- Alumni	Questionnaire
3- External Evaluators	Reports
4- Stakeholders	Questionnaire, workshops, seminars, conferences

Head of the Department: Prof. Mohamed A. El-Fakharany
   Program coordinator: Prof. Sayed Mahfouz

Date: 2015/2016

Stratigraphy and Paleontology Ph.D. Program Specification

Ph.D. in Stratigraphy and Paleontology

A. Basic Information

Program Title: Ph.D. in Stratigraphy and Paleontology
Program Type: Single
Department: Geology
Coordinator: Prof. Basem A Zoheir
Assistant Co-ordinator:
Dates of program specifications approval: 14/11/2012

B. Professional Information

1. Program Aims
By the end of the Ph.D. in Stratigraphy and Paleontology program, graduates must be able to:

a)   compile full awareness of the various topics related to the stat-of-the-art research in stratigraphy and paleontology,

b)   manage and undertake the different field and laboratory procedures related to the research in stratigraphy and paleontology,

c)   boost their ability to synthesize innovative ideas and effectively communicate through written, oral and graphical means.

d)   work independently and with a group in research and industry related to stratigraphy and paleontology and relevant subjects.

2. Intended Learning Outcomes (ILO's)

2.1 Knowledge and Understanding
By the end of the Ph.D. in Stratigraphy and Paleontology program, graduates must be able to:

a1.   domenstrate the essential theoretical bases, procedures and techniques used for stratigraphy and paleontology field studies and related laboratory analyses,

a2.   review a robust background about the various auxiliary geosciences disciplines necessary to carry out stratigraphic and paleontologic research,

a3.   state the origin and characteristics of the main sedimentary rock types, sedimentary structures, sedimentary basin analysis, and depositional systems,

a4.   identify the contained fossils and organic matter in the sedimentary rocks and their use in paleoenvironmental and paleoclimatic interpretations,

a5.   recognize the different types of geochemical, petrophysical, and geophysical methods used in

2

stratigraphic and paleontologic research.

2.2 Intellectual Skills

By the end of the Ph.D. in Stratigraphy and Paleontology program, graduates must be able to:

b1.   conduct original research in stratigraphy and paleontology based on field and laboratory observations and analyses, as well as published scientific work,

b2.   make sound and plausible interpretations of field and laboratory observations and analyses,

b3.   Apply gained knowledge and experience to perform specific tasks and solve scientific problem,

b4.   formulate logical hypotheses to explain research outcomes with the ability to work toward proving them,

b5.   think of proposed ideas and published work in terms of their scientific validity and integrity.

2.3 Skills

2.3.1 Professional and Practical Skills

By the end of the Ph.D. in Stratigraphy and Paleontology program, graduates must be able to:
c1.   comile, read, and examine previous scientific contributions,
c2.   interpret the various forms of geologic data (maps, logs, satellite images, etc.),
c3.   identify the different fossil groups and their stratigraphic and paleontologic significance,
c4.   familiarize with the various laboratory equipments and methodologies pertained to stratigraphic and paleontologic research,
c5.   run specialized computer software to present and manipulate research data.

2.3.2 General Skills

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

d1.   use information and communication technology means in research approaches,
d2.   think independently, set tasks and solve problems on scientific basis,
d3.   integrate with a group; manage time, and positively collaborate and communicate with others,
d4.   acquire self- and long life- learning strategies,
d5.   adhere to the general ethics and copyright in research and industrial applications.

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 Ac-

cretation of Education in (2009). Specific Academic Reference Standards for Ph.D. in Goology 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- Curricullum structure and contents of program
  a- Program duration: 3-5 years
  b- Program structure:
- 12 elective credit hours.
- 48 credit hours for the preparation of final thesis.

Program structure	Credit hours
Elective courses	12
Research and preparing the Ph.D. thesis	48
Total	60

d- Program Courses:

Elective courses:

Code No.	Course Title	No. of hours		
		Lectures	Practical	Credit hours
745-G	Micropaleontology (II)	3	-	3
746-G	Paleoecology (II)	3	-	3
747-G	Macropaleontology (II)	3	-	3
748-G	Advanced Stratigraphy (II)	3	-	3
749-G	Applications of Biostratigraphy (II)	3	-	3
715-G	Advanced Sedimentary Petrology	3	-	3
750-G	Palynofacies and Paleoenvironmental Deductions (II)	3	-	3
751-G	Evolution and Extinction (II)	3	-	3
752-G	Marine Geology (II)	3	-	3
753-G	Vertebrate Paleontology (II)	3	-	3
754-G	Selective Topics (II)	3	-	3

Ph.D. Thesis   48 credit hours

6- Contents of the Courses

See course specification (**Appendix 6, 7**)

7- Program admission requirements

١. يشترط لقيد الطالب لنيل درجة دكتوراه الفلسفة في العلوم أن يكون حاصلا على درجة ماجستير في العلوم في نفس التخصص من كلية العلوم جامعة بنها أو أى درجة معادلة لها من معهد علمي أخر معترف به من المجلس الأعلى للجامعات.

٢. المدة اللازمة للحصول على درجة دكتوراه الفلسفة في العلوم ثلاث سنوات على الأقل منذ موافقة الجامعة علي التسجيل، وبحد أقصي خمس سنوات (المدة الأساسية) ويمكن مد التسجيل لمدة استثنائية لا تزيد عن ثلاث سنوات بناءا على التقارير العلمية المقدمة من لجنة الأشرف وموافقة مجلس القسم العلمي المختص ولجنة الدراسات العليا والبحوث ومجلس الكلية ومجلس الدراسات العليا والبحوث بالجامعة.

٣. يشترط لتسجيل الطالب لدرجة دكتوراه الفلسفة في العلوم اجتياز امتحان اتقان اللغة الانجليزية او ما يعادلها بمستوى يحدده مجلس الجامعة وكذلك استيفاء أى شروط أضافية تراها الكلية والجامعة لازمة للقيد والتسجيل للدرجة.

Admission is achieved on the basis of:
  ▪ Completion of a M.Sc. degree or any equivalent Arabic or international certificate.
  ▪ Passing the TOFEL test with the score determined by the University Council.
  ▪ Meeting any additional conditions the college and university deems necessary to register for the Ph.D. degree.

8- Regulations for progression and program completion:

١. أن ينجز الطالب عدد ١٢ ساعة دراسية معتمدة من المقررات الدراسية لمرحلة ما بعد الماجستير متزامنة مع التسجيل للرسالة العلمية (تحسب ٤٨ ساعة معتمدة) ويخصص لكل ساعة معتمدة خمسون درجة.

٢. يقوم الطالب باجراء مناقشة علنية لخطة البحث (سيمينار) على أن يوافق عليها مجلس القسم تمهيدا لتسجيله للدرجة.

٣. تعقد امتحانات الدراسة الخاصة بالدكتوراه في نهاية كل فصل دراسي في المواعيد التي يقرها مجلس الكلية بناءً علي اقتراح مجالس الأقسام.

٤. يقوم الطالب باجراء بحث ذا قيمة علمية تمثل إضافة علمية جديدة قائمة علي البحث المبتكر في موضوع يقره مجلس القسم ولجنة الدراسات العليا و مجلس الكلية ومجلس الدراسات

العليا بالجامعة على أن يقدم الطالب نتائج بحثه في رسالة تقبلها لجنة الحكم، و يقوم الطالب بعمل سيمينار قبل التقدم بالرسالة بثلاثة اشهر علي الأقل.

٥. يمنح الطالب درجة دكتوراه الفلسفة في العلوم ويذكر في الشهادة التخصص العام والدقيق وعنوان الرسالة.

٦. يرجع للائحة التنفيذية لقانون تنظيم الجامعات فيما لم يرد به نص في هذه اللائحة.

- According to the bylaws of Benha Faculty of Science - the regulations for progression and program completion - the graduate must pass:
    - 12 elective credit hours.
    - 48 credit hours for preparing the Ph.D. Thesis.
- Get 3 computer courses.
- Give 2 seminars approved by Department Council.
- 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%

b- Doctorate Thesis evaluation:

- The senior supervisor reports.
- Individual Reports of the Judging Committee (Three specialist professors including the senior supervisor).
- The Public Discussion
- The Common Report of the Judging Committee.
- Department, Faculty and University Boards.

- Assessment and Recommendations:
-The Judge Committee has to recommend one of the following:
- Accepting the thesis as it is.
- Accepting the thesis and recommends awarding after correction performing.
- Delaying awarding for maximum three months to perform corrections.

- Re-displaying the thesis to the judging committee within limited period.
- Rejecting the thesis at all.

10- Methods of program evaluation:

Samples	Tool
1- Senior Students	Questionnaire
2- Alumni	Questionnaire
3- External Evaluators	Reports
4- Stakeholders	Questionnaire, workshops, seminars, conferences

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

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