Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation

Academic Program Specification Form For The Academic

University: Al-Nahrain University
College : College of Medicine
Department : Department of Physiology
Date Of Form Completion : 12/9/2021

Dean's Name
Date : / /
Signature

Dean's Assistant For Scientific Affairs
Date : / /
Signature

Head of Department
Date : / /
Signature

Quality Assurance And University Performance Manager
Date : / /
Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	Al-Nahrain University/ College of Medicine
2. University Department/Centre	Department of Physiology
3. Programme Title	Physiology
4. Title of Final Award	M.B.ch.B.
5. Modes of Attendance offered	Courses
6. Accreditation	Ministry of Higher Education &Scientific Research
7. Other external influences	practical physics
8. Date of production/revision of this specification	22/6/2021
9. Aims of the Programme:	
Division of Medical Physics aims to try to link the laws of physics and its applications in various fields of medical diagnostic and therapeutic, including: -	
1- to explain the laws of physics and its application in the medical field	
2- deepen scientific logic for students	
3- in the advancement of the reality of scientific research	

4- application of basic scientific study acquired by the student to conduct scientific research and medical studies.

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Knowledge and Understanding

A1. Introduce students to the physics of the human body
A2. form a solid foundation in understanding the principles and techniques of diagnostic and therapeutic devices with physical principles.
A3. Develop mental abilities by different academic learning tools
A4. Learn the methods of scientific discussion
A5. Acquisition of laboratory skills

B. Subject-specific skills

B1. How to use measuring instruments and physical materials in laboratories
B2. How to use radioactive materials and laser devices

Teaching and Learning Methods

Lectures, computers, plasma screens, scientific instruments, clinical tours, small teaching groups, visual and auditory aids instruments and discussions.

-The theoretical side includes theoretical lectures on the applications of physical laws in the medical field.
- The practical side includes practical experiences related to the medical specialty

Assessment methods

1- Written exams
2- Continuous assessment
3- Small teaching groups
4- Practical exams

C. **Thinking Skills**
C1. Moral and professional discipline.
C2. Good behavior of the students among them.
C3. Development the help spirit
C4. Removal of the class differences

Teaching and Learning Methods

Small teaching groups, discussions and seminars

Assessment methods

1- Scheduled assessment
2- Students follow up

D. **General and Transferable Skills (other skills relevant to employability and personal development)**

D1. The student should cooperate with his colleges and teachers in atmosphere friendliness and understanding
D2. One team work
D3. Reaction with them in the scientific journeys
D4.

Teaching and Learning Methods

Small teaching groups, discussions and seminars

Assessment Methods

3- Scheduled assessment
4- Students follow up

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
1st stage	**PHSPhs-1**	**Medical physics**	3	Bachelor Degree Requires (x) credits
1st stage	**PHSPhs-2**	**Medical physics**	3	

13. Personal Development Planning
Learn ideas, methods, tools and techniques that would enable the students to use them directly to fitful accomplishment of the work in the best way.
14. Admission criteria .
Central admission
15. Key sources of information about the programme
1-Medical physics by John Cameron 2- physics for biology and pre medical students by Burns and McDonald 3-Practical physics by Armitage

Curriculum Skills Map																		
please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed																		
				Programme Learning Outcomes														
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
1st	PHSPhs-1	Medical physics		×	×	×	×	×	×	×		×	×	×	×	×	×	×	
	PHSPhs-2	Medical physics		×	×	×	×	×	×	×		×	×	×	×	×	×	×	

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	Collage of medicine
2. University Department/Centre	Al-Nahrain University
3. Course title/code	Medical Physics
4. Programme(s) to which it contributes	M.B.Ch.B.
5. Modes of Attendance offered	Obligatory
6. Semester/Year	1st semester 2020 – 2021
7. Number of hours tuition (total)	30 hours lectures
8. Date of production/revision of this specification	12/9/2021
9. Aims of the Course	
Medical Physics aims to try to link the laws of physics and its applications in various fields of medical diagnostic and therapeutic, including - : 1- to explain the laws of physics and its application in the medical field	
2- deepen scientific logic for students	
3- in the advancement of the reality of scientific research	
4- application of basic scientific study acquired by the student to conduct scientific research and medical studies.	

10· Learning Outcomes, Teaching ,Learning and Assessment Methode
A- Knowledge and Understanding A1. Introduce students to the physics of the human body A2. form a solid foundation in understanding the principles and techniques of diagnostic and therapeutic devices with physical principles. A3. Develop mental abilities by different academic learning tools
B. Subject-specific skills B1. How to use measuring instruments and physical materials in laboratories B2. How to use radioactive materials and laser devices
Teaching and Learning Methods
Lectures, quizzes
Assessment methods
5- Scheduled assessment 6- Students follow up
C. Thinking Skills C1. Moral and professional discipline. C2. Good behavior of the students among them. C3. Development the help spirit C4. Removal of the class differences
Teaching and Learning Methods
Lectures, quizzes
Assessment methods
Scheduled assessment Students follow up

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1. The student should cooperate with his colleges and teachers in atmosphere friendliness and understanding

D2. One team work

D3. Reaction with them in the scientific journeys

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1st	**2**	Medical physics	**Terminology, Modeling ,measurement ,how to make a full diagnose.**	Theoretical lecture	**-Short daily, mid-term & final exams.**
٢nd	**2**	Medical physics	**Forces on and in the human body.**	Theoretical lecture	**Short daily, mid-term & final exams**
3rd	**2**	Medical physics	**Centrifuge, Sedimentation velocity.**	Theoretical lecture	**Short daily, mid-term & final exams**
4th	**2**	Medical physics	**Physics of the skeleton.**	Theoretical lecture	**Short daily, mid-term & final exams**
5th	**2**	Medical physics	**Elastic properties of biological materials**.	Theoretical lecture	**Short daily, mid-term & final exams**
6th	**2**	Medical physics	**Heat and cold in medicine**.	Theoretical lecture	**Short daily, mid-term & final exams**
7th	**2**	Medical physics	**Cold in medicine**.	Theoretical lecture	**Short daily, mid-term & final exams**
8	**2**	Medical physics	**Energy, work, and power of the body**.	Theoretical lecture	**Short daily, mid-term & final exams**
9	**2**	Medical physics	**Pressure**	Theoretical lecture	**Short daily, mid-term & final exams**
10	**2**	Medical physics	**The physics of lung**.	Theoretical lecture	**Short daily, mid-term & final exams**
11	**2**	Medical physics	**The breathing mechanism, airway resistance**.	Theoretical lecture	**Short daily, mid-term & final exams**
12	**2**	Medical physics	**Compliance, physics of alveoli**.	Theoretical lecture	**Short daily, mid-term & final exams**
13	**2**	Medical physics	**Major components of the cardiovascular system(CVS)**.	Theoretical lecture	**Short daily, mid-term & final exams**
14	**2**	Medical physics	**Laplace law,Bernoulli's principle ,Viscosity &Poiseuille's law.**	Theoretical lecture	**Short daily, mid-term & final exams**
15			**final exams**		

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	1-Medical physics by John Cameron 2- physics for biology and pre medical students by Burns and McDonald 3-Practical physics by Armitage
Special requirements (include for example workshops, periodicals, IT software, websites)	1-Medical physics by John Cameron 2- physics for biology and pre medical students by Burns and McDonald 3-Practical physics by Armitage
Community-based facilities (include for example, guest Lectures , internship , field studies)	None

13. Admissions	
Pre-requisites	
Minimum number of students	As determined by the University
Maximum number of students	As determined by the University

Republic of Iraq
Ministry of Higher Education & Scientific Research
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Academic Program Specification Form For The Academic

University: Al-Nahrain University
College : College of Medicine
Department : Department of Physiology
Date Of Form Completion : 12/9/2021

Dean's Name

Date : / /

Signature

Dean's Assistant For Scientific Affairs

Date : / /

Signature

Head of Department

Date : / /

Signature

Quality Assurance And University Performance Manager
Date : / /
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TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	Al-Nahrain University/ College of Medicine
2. University Department/Centre	Department of Physiology
3. Programme Title	Physiology
4. Title of Final Award	M.B.ch.B.
5. Modes of Attendance offered	Courses
6. Accreditation	Ministry of Higher Education &Scientific Research
7. Other external influences	practical physics
8. Date of production/revision of this specification	22/6/2021
9. Aims of the Programme:	
Division of Medical Physics aims to try to link the laws of physics and its applications in various fields of medical diagnostic and therapeutic, including: -	
1- to explain the laws of physics and its application in the medical field	
2- deepen scientific logic for students	
3- in the advancement of the reality of scientific research	

4- application of basic scientific study acquired by the student to conduct scientific research and medical studies.

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Knowledge and Understanding

A1. Introduce students to the physics of the human body
A2. form a solid foundation in understanding the principles and techniques of diagnostic and therapeutic devices with physical principles.
A3. Develop mental abilities by different academic learning tools
A4. Learn the methods of scientific discussion
A5. Acquisition of laboratory skills

B. Subject-specific skills

B1. How to use measuring instruments and physical materials in laboratories
B2. How to use radioactive materials and laser devices

Teaching and Learning Methods

Lectures, computers, plasma screens, scientific instruments, clinical tours, small teaching groups, visual and auditory aids instruments and discussions.

-The theoretical side includes theoretical lectures on the applications of physical laws in the medical field.
- The practical side includes practical experiences related to the medical specialty

Assessment methods

1- Written exams
2- Continuous assessment
3- Small teaching groups
4- Practical exams

C. **Thinking Skills**
C1. Moral and professional discipline.
C2. Good behavior of the students among them.
C3. Development the help spirit
C4. Removal of the class differences

Teaching and Learning Methods

Small teaching groups, discussions and seminars

Assessment methods

1- Scheduled assessment
2- Students follow up

D. **General and Transferable Skills (other skills relevant to employability and personal development)**

D1. The student should cooperate with his colleges and teachers in atmosphere friendliness and understanding
D2. One team work
D3. Reaction with them in the scientific journeys
D4.

Teaching and Learning Methods

Small teaching groups, discussions and seminars

Assessment Methods

3- Scheduled assessment
4- Students follow up

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
1st stage	**PHSPhs-1**	**Medical physics**	3	Bachelor Degree Requires (x) credits
1st stage	**PHSPhs-2**	**Medical physics**	3	

13. Personal Development Planning
Learn ideas, methods, tools and techniques that would enable the students to use them directly to fitful accomplishment of the work in the best way.
14. Admission criteria .
Central admission
15. Key sources of information about the programme
1-Medical physics by John Cameron 2- physics for biology and pre medical students by Burns and McDonald 3-Practical physics by Armitage

Curriculum Skills Map																		
please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed																		
				Programme Learning Outcomes														
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
1st	PHSPhs-1	Medical physics		×	×	×	×	×	×	×		×	×	×	×	×	×	×	
	PHSPhs-2	Medical physics		×	×	×	×	×	×	×		×	×	×	×	×	×	×	

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	Collage of medicine
2. University Department/Centre	Al-Nahrain University
3. Course title/code	Medical Physics
4. Programme(s) to which it contributes	M.B.Ch.B.
5. Modes of Attendance offered	Obligatory
6. Semester/Year	2nd semester 2020 – 2021
7. Number of hours tuition (total)	30 hours lectures
8. Date of production/revision of this specification	12/9/2021
9. Aims of the Course	
Medical Physics aims to try to link the laws of physics and its applications in various fields of medical diagnostic and therapeutic, including - : 1- to explain the laws of physics and its application in the medical field	
2- deepen scientific logic for students	
3- in the advancement of the reality of scientific research	
4- application of basic scientific study acquired by the student to conduct scientific research and medical studies.	

10· Learning Outcomes, Teaching ,Learning and Assessment Methode
A- Knowledge and Understanding A1. Introduce students to the physics of the human body A2. form a solid foundation in understanding the principles and techniques of diagnostic and therapeutic devices with physical principles. A3. Develop mental abilities by different academic learning tools
B. Subject-specific skills B1. How to use measuring instruments and physical materials in laboratories B2. How to use radioactive materials and laser devices
Teaching and Learning Methods
Lectures, quizzes
Assessment methods
5- Scheduled assessment 6- Students follow up
C. Thinking Skills C1. Moral and professional discipline. C2. Good behavior of the students among them. C3. Development the help spirit C4. Removal of the class differences
Teaching and Learning Methods
Lectures, quizzes
Assessment methods
Scheduled assessment Students follow up

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1. The student should cooperate with his colleges and teachers in atmosphere friendliness and understanding

D2. One team work

D3. Reaction with them in the scientific journeys

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1st	**2**	Medical physics	**Electricity within the body**	Theoretical lecture	**-Short daily, mid-term & final exams.**
٢nd	**2**	Medical physics	**Cardiovascular Instrumentation**	Theoretical lecture	**Short daily, mid-term & final exams**
3rd	**2**	Medical physics	**The Applications of Magnetic flied in medicine**	Theoretical lecture	**Short daily, mid-term & final exams**
4th	**2**	Medical physics	**Sound in medicine**	Theoretical lecture	**Short daily, mid-term & final exams**
5th	**2**	Medical physics	**Sound in medicine**	Theoretical lecture	**Short daily, mid-term & final exams**
6th	**2**	Medical physics	**Physics of the ear and hearing.**	Theoretical lecture	**Short daily, mid-term & final exams**
7th	**2**	Medical physics	**Light in medicine**	Theoretical lecture	**Short daily, mid-term & final exams**
8	**2**	Medical physics	**The eye and vision**	Theoretical lecture	**Short daily, mid-term & final exams**
9	**2**	Medical physics	**Laser interaction with tissue and its medical applications**	Theoretical lecture	**Short daily, mid-term & final exams**
10	**2**	Medical physics	**Physics of X-ray**	Theoretical lecture	**Short daily, mid-term & final exams**
11	**2**	Medical physics	**Computed tomography (CT) scan**	Theoretical lecture	**Short daily, mid-term & final exams**
12	**2**	Medical physics	**Physics of nuclear medicine: Medical radioisotopes.**	Theoretical lecture	**Short daily, mid-term & final exams**
13	**2**	Medical physics	**Physics of radiation therapy**	Theoretical lecture	**Short daily, mid-term & final exams**
14	**2**	Medical physics	**Magnetic resonance imaging (MRI)**	Theoretical lecture	**Short daily, mid-term & final exams**
	2		Final exam		

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	1-Medical physics by John Cameron 2- physics for biology and pre medical students by Burns and McDonald 3-Practical physics by Armitage
Special requirements (include for example workshops, periodicals, IT software, websites)	1-Medical physics by John Cameron 2- physics for biology and pre medical students by Burns and McDonald 3-Practical physics by Armitage
Community-based facilities (include for example, guest Lectures , internship , field studies)	None

13. Admissions	
Pre-requisites	
Minimum number of students	As determined by the University
Maximum number of students	As determined by the University

Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation

Academic Program Specification Form For The Academic

University: Al-Nahrain University
College : College of Medicine
Department : Department of Physiology
Date Of Form Completion : 12/9/2021

Dean's Name

Date : / /

Signature

Dean's Assistant For Scientific Affairs

Date : / /

Signature

Head of Department

Date : / /

Signature

Quality Assurance And University Performance Manager

Date : / /

Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

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1. Teaching Institution	Al-Nahrain University/ College of Medicine
2. University Department/Centre	Department of Physiology
3. Programme Title	Physiology
4. Title of Final Award	M.B.ch.B.
5. Modes of Attendance offered	Courses
6. Accreditation	Ministry of Higher Education &Scientific Research
7. Other external influences	practical physics
8. Date of production/revision of this specification	22/6/2021
9. Aims of the Programme:	
Division of Medical Physics aims to try to link the laws of physics and its applications in various fields of medical diagnostic and therapeutic, including: -	
1- to explain the laws of physics and its application in the medical field	
2- deepen scientific logic for students	
3- in the advancement of the reality of scientific research	

4- application of basic scientific study acquired by the student to conduct scientific research and medical studies.

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Knowledge and Understanding

A1. Introduce students to the physics of the human body
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A4. Learn the methods of scientific discussion
A5. Acquisition of laboratory skills

B. Subject-specific skills

B1. How to use measuring instruments and physical materials in laboratories
B2. How to use radioactive materials and laser devices

Teaching and Learning Methods

Lectures, computers, plasma screens, scientific instruments, clinical tours, small teaching groups, visual and auditory aids instruments and discussions.

-The theoretical side includes theoretical lectures on the applications of physical laws in the medical field.
- The practical side includes practical experiences related to the medical specialty

Assessment methods

1- Written exams
2- Continuous assessment
3- Small teaching groups
4- Practical exams

C. **Thinking Skills**
C1. Moral and professional discipline.
C2. Good behavior of the students among them.
C3. Development the help spirit
C4. Removal of the class differences

Teaching and Learning Methods

Small teaching groups, discussions and seminars

Assessment methods

1- Scheduled assessment
2- Students follow up

D. **General and Transferable Skills (other skills relevant to employability and personal development)**

D1. The student should cooperate with his colleges and teachers in atmosphere friendliness and understanding
D2. One team work
D3. Reaction with them in the scientific journeys
D4.

Teaching and Learning Methods

Small teaching groups, discussions and seminars

Assessment Methods

3- Scheduled assessment
4- Students follow up

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
1st stage	**PHSPhs-1**	**Medical physics**	3	Bachelor Degree Requires (x) credits
1st stage	**PHSPhs-2**	**Medical physics**	3	

13. Personal Development Planning
Learn ideas, methods, tools and techniques that would enable the students to use them directly to fitful accomplishment of the work in the best way.
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Central admission
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Curriculum Skills Map																		
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Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
1st	PHSPhs-1	Medical physics		×	×	×	×	×	×	×		×	×	×	×	×	×	×	
	PHSPhs-2	Medical physics		×	×	×	×	×	×	×		×	×	×	×	×	×	×	

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	Collage of medicine
2. University Department/Centre	Al-Nahrain University
3. Course title/code	Medical Physics
4. Programme(s) to which it contributes	M.B.Ch.B.
5. Modes of Attendance offered	Obligatory
6. Semester/Year	1st semester 2020 – 2021
7. Number of hours tuition (total)	30 hours lectures
8. Date of production/revision of this specification	12/9/2021
9. Aims of the Course	
Medical Physics aims to try to link the laws of physics and its applications in various fields of medical diagnostic and therapeutic, including - : 1- to explain the laws of physics and its application in the medical field	
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Teaching and Learning Methods
Lectures, quizzes
Assessment methods
5- Scheduled assessment 6- Students follow up
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Teaching and Learning Methods
Lectures, quizzes
Assessment methods
Scheduled assessment Students follow up

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D1. The student should cooperate with his colleges and teachers in atmosphere friendliness and understanding

D2. One team work

D3. Reaction with them in the scientific journeys

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1st	**2**	Medical physics	**Terminology, Modeling ,measurement ,how to make a full diagnose.**	Theoretical lecture	**-Short daily, mid-term & final exams.**
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7th	**2**	Medical physics	**Cold in medicine**.	Theoretical lecture	**Short daily, mid-term & final exams**
8	**2**	Medical physics	**Energy, work, and power of the body**.	Theoretical lecture	**Short daily, mid-term & final exams**
9	**2**	Medical physics	**Pressure**	Theoretical lecture	**Short daily, mid-term & final exams**
10	**2**	Medical physics	**The physics of lung**.	Theoretical lecture	**Short daily, mid-term & final exams**
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12. Infrastructure	
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13. Admissions	
Pre-requisites	
Minimum number of students	As determined by the University
Maximum number of students	As determined by the University

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Ministry of Higher Education & Scientific Research
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Academic Program Specification Form For The Academic

University: Al-Nahrain University
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Department : Department of Physiology
Date Of Form Completion : 12/9/2021

Dean's Name
Date : / /
Signature

Dean's Assistant For Scientific Affairs
Date : / /
Signature

Head of Department
Date : / /
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Quality Assurance And University Performance Manager
Date : / /
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TEMPLATE FOR PROGRAMME SPECIFICATION

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PROGRAMME SPECIFICATION

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1. Teaching Institution	Al-Nahrain University/ College of Medicine
2. University Department/Centre	Department of Physiology
3. Programme Title	Physiology
4. Title of Final Award	M.B.ch.B.
5. Modes of Attendance offered	Courses
6. Accreditation	Ministry of Higher Education &Scientific Research
7. Other external influences	practical clinical physiology
8. Date of production/revision of this specification	22/6/2021
9. **Aims of the Programme**	
1- Determination the functions of different body systems	
2- Description the mechanisms of work of different body systems & physiological sequences that correlate.	
3- Detection of the normal values of different vital activities within different biological instances.	
4- Discrimination between the normal and abnormal functions of different body systems	

5- Declaration of changes values in different body systems functions that accompanied certain diseases

6- Expand the knowledge through medical journals, books & internet.

10. **Learning Outcomes, Teaching, Learning and Assessment Methods**

A. Knowledge and Understanding

A1. Learning the bases of physiology and different terms
A2. Development of the mental abilities by different academic learning tools
A3. Connection between the basic & clinical sciences
A4. Identify the mechanisms of actions drugs and their effects
A5. Learning the methods of scientific discussion
A6. Acquisition of laboratory skills

B. Subject-specific skills

B1. Dealing ways with laboratory animals and scientific instruments
B2. How to use the chemical and physical substances
B3. Acquisition of clinical examination skills

Teaching and Learning Methods

Lectures, computers, plasma screens, scientific instruments, clinical tours, small teaching groups, visual and auditory aids instruments and discussions.

Assessment methods

1- Written exams
2- Continuous assessment
3- Small teaching groups
4- Practical exams

C. **Thinking Skills**

C1. Moral and professional discipline.
C2. Good behavior of the students among them.
C3. Development the help spirit
C4. Removal of the class differences

Teaching and Learning Methods

Small teaching groups, discussions and seminars

Assessment methods

1- Scheduled assessment
2- Students follow up

D. **General and Transferable Skills (other skills relevant to employability and personal development)**

D1. The student should cooperate with his colleges and teachers in atmosphere friendliness and understanding
D2. One team work
D3. Reaction with them in the scientific journeys
D4.

Teaching and Learning Methods

Small teaching groups, discussions and seminars

Assessment Methods

3- Scheduled assessment
4- Students follow up

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
1st stage	**PHYPhy-11**	**physiology**	**1**	Bachelor Degree Requires (x) credits
1st stage	**PHYPhy-12**	**physiology**	**1**	
2nd stage	**PHYPhy-21**	**physiology**	5.5	
2nd stage	**PHYPhy-22**	**physiology**	5.5	

13. Personal Development Planning
Learn ideas, methods, tools and techniques that would enable the students to use them directly to fitful accomplishment of the work in the best way.
14. Admission criteria .
Central admission
15. Key sources of information about the programme
Medical Textbooks

Curriculum Skills Map																			
please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed																			
				Programme Learning Outcomes															
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**
1st	**PHYPhy-11**	**Physiology**		×	×	×	×	×	×	×		×	×	×	×	×	×	×	
	PHYPhy-12	**Physiology**		×	×	×	×	×	×	×		×	×	×	×	×	×	×	
2nd	**PHYPhy-21**	**Physiology**		×	×	×	×	×	×	×		×	×	×	×	×	×	×	
	PHYPhy-22	**Physiology**		×	×	×	×	×	×	×		×	×	×	×	×	×	×	

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	Al-Nahrain University/ College of Medicine
2. University Department/Centre	Department of Physiology
3. Course title/code	**PHYPhy-11**
4. Programme(s) to which it contributes	M.B.Ch. B
5. Modes of Attendance offered	Obligatory
6. Semester/Year	1st semester / 1st stage
7. Number of hours tuition (total)	15
8. Date of production/revision of this specification	12/9/2021
9. Aims of the Course	
1. Describe the structure of the plasma membrane, cilia, and flagella.	
2. Describe amoeboid movement, phagocytosis, pinocytosis, receptor-mediated endocytosis, and exocytosis.	

3. Describe the intracellular and extracellular compartments of the body.
4. Identify the components of passive transport, and distinguish passive from active transport.
5. Describe the changes in ionic channels that underlie electrotonic potentials, the action potential, and repolarization.

10· Learning Outcomes, Teaching ,Learning and Assessment Methode
A- Knowledge and Understanding A1. Learning the bases of cell physiology A2. Development of the mental abilities by different academic learning tools A3. Learning the methods of scientific discussion
B. Subject-specific skills B1. Dealing ways with laboratory animals and scientific instruments B2. How to use the chemical and physical substances
Teaching and Learning Methods
Lectures, quizzes
Assessment methods
5- Scheduled assessment 6- Students follow up
C. Thinking Skills C1. Moral and professional discipline. C2. Good behavior of the students among them. C3. Development the help spirit C4. Removal of the class differences
Teaching and Learning Methods
Lectures, quizzes

Assessment methods
Scheduled assessment Students follow up

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. The student should cooperate with his colleges and teachers in atmosphere friendliness and understanding D2. One team work D3. Reaction with them in the scientific journeys

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	**1**	Physiology of body fluids	Introduction to body fluid	Lectures	Exams & quizzes
2	**1**	Physiology of body fluids	Basic Principles of Osmosis	Lectures	Exams & quizzes
3	**1**	Physiology of body fluids	Regulation of Na^+ Balance	Lectures	Exams & quizzes
4	**1**	Physiology of body fluids	Regulation of K^+ Balance	Lectures	Exams & quizzes
5	**1**	Physiology of body fluids	Water balance regulation	Lectures	Exams & quizzes
6	**1**	Physiology of body fluids	Introduction to cell physiology	Lectures	Exams & quizzes
7	**1**	Physiology of body fluids	Cell structures and organelles	Lectures	Exams & quizzes
8	**1**	Physiology of body fluids	Ionic transport across cell membrane	Lectures	Exams & quizzes
9	**1**	Physiology of body fluids	Cell Cycle	Lectures	Exams & quizzes
10	**1**	Physiology of body fluids	Cell division	Lectures	Exams & quizzes
11	**1**	Physiology of body fluids	Basic physics and measurement of membrane potential	Lectures	Exams & quizzes
12	**1**	Physiology of body fluids	Generation of resting membrane potential	Lectures	Exams & quizzes
13	**1**	Physiology of body fluids	Electrotonic Potentials, Local Response, & Firing Level	Lectures	Exams & quizzes
14	**1**	Physiology of body fluids	Generation of action potential	Lectures	Exams & quizzes
15	**1**	Physiology of body fluids	Introduction to body fluid	Lectures	Exams & quizzes

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Guyton text book of Physiology 2021
Special requirements (include for example workshops, periodicals, IT software, websites)	Guyton text book of Physiology 2021
Community-based facilities (include for example, guest Lectures , internship , field studies)	None

13. Admissions	
Pre-requisites	As determined by the University

Minimum number of students	As determined by the University
Maximum number of students	As determined by the University

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	Al-Nahrain University/ College of Medicine
2. University Department/Centre	Department of Physiology
3. Course title/code	**PHYPhy-12**
4. Programme(s) to which it contributes	M.B.Ch.B
5. Modes of Attendance offered	Obligatory
6. Semester/Year	2nd semester / 1st stage
7. Number of hours tuition (total)	15
8. Date of production/revision of this specification	22/6/2021

9. Aims of the Course

1. Describe the components of blood and lymph, their origins, and the role of hemoglobin in transporting oxygen in red blood cells.
2. Understand the molecular basis of blood groups and the reasons for transfusion reactions.

3. Delineate the process of hemostasis that restricts blood loss when vessels are damaged, and the adverse consequences of intravascular thrombosis.
4. Identify the types of blood and lymphatic vessels that make up the circulatory system and the regulation and function of their primary constituent cell types
5. Understand the basis of disease states where components of the blood and vasculature are abnormal, dysregulated, or both.

10· Learning Outcomes, Teaching ,Learning and Assessment Methode
B- Knowledge and Understanding A1. Learning the bases of blood physiology A2. Development of the mental abilities by different academic learning tools A3. Learning the methods of scientific discussion
B. Subject-specific skills B1. Dealing ways with laboratory scientific instruments B2. How to use the chemical and physical substances
Teaching and Learning Methods
Lectures, quizzes
Assessment methods
7- Scheduled assessment 8- Students follow up
C. Thinking Skills C1. Moral and professional discipline. C2. Good behavior of the students among them. C3. Development the help spirit C4. Removal of the class differences
Teaching and Learning Methods
Lectures, quizzes

Assessment methods
Scheduled assessment Students follow up

D. General and Transferable Skills (other skills relevant to employability and personal development)
D1. The student should cooperate with his colleges and teachers in atmosphere friendliness and understanding D2. One team work D3. Reaction with them in the scientific journeys

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	1	Physiology of blood	Blood Volume as a Circulatory Fluid & the Dynamics of Blood Flow	Lectures	Exams & quizzes
2	1	Physiology of blood	Red Blood Cells	Lectures	Exams & quizzes
3	1	Physiology of blood	Hemoglobin	Lectures	Exams & quizzes
4	1	Physiology of blood	Anemia and Polycythemia	Lectures	Exams & quizzes
5	1	Physiology of blood	White blood cells	Lectures	Exams & quizzes
6	1	Physiology of blood	Inflammation	Lectures	Exams & quizzes
7	1	Physiology of blood	Immunity I	Lectures	Exams & quizzes
8	1	Physiology of blood	Immunity II	Lectures	Exams & quizzes
9	1	Physiology of blood	Platelets	Lectures	Exams & quizzes
10	1	Physiology of blood	Blood Group	Lectures	Exams & quizzes
11	1	Physiology of blood	Transfusion reactions and hemolytic disease of the newborn	Lectures	Exams & quizzes
12	1	Physiology of blood	Hemostasis I	Lectures	Exams & quizzes
13	1	Physiology of blood	Hemostasis II	Lectures	Exams & quizzes
14	1	P Physiology of blood	Hemostasis III	Lectures	Exams & quizzes
15	1	P Physiology of blood	Hemostasis	Lectures	Exams & quizzes

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Guyton text book of Physiology 2021
Special requirements (include for example workshops, periodicals, IT software, websites)	Guyton text book of Physiology 2021
Community-based facilities (include for example, guest Lectures , internship , field studies)	None

13. Admissions	
Pre-requisites	As determined by the University

Minimum number of students	As determined by the University
Maximum number of students	As determined by the University

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	Al-Nahrain University/ College of Medicine
2. University Department/Centre	Department of Physiology
3. Course title/code	**PHYPhy-21**
4. Programme(s) to which it contributes	MBChB
5. Modes of Attendance offered	Obligatory
6. Semester/Year	1st semester / 2nd stage
7. Number of hours tuition (total)	105
8. Date of production/revision of this specification	24/6/2021
9. Aims of the Course	
1. Describe the different levels of muscle structure, and the actions of skeletal muscles.	
2. Describe motor units, and explain the significance of recruitment of motor units.	
3. Describe the extrinsic regulation of cardiac rate and contractility.	

4. Explain the relationship between stroke volume and venous return.
5. Explain the Frank-Starling law of the heart.

6. Describe the structures and functions of the conducting and respiratory zones of the lungs., Describe the location and significance of the pleural membranes.

10· Learning Outcomes, Teaching ,Learning and Assessment Methods

C- Knowledge and Understanding

A1. Recognize basic knowledge on physiology of the excitable nervous tissue and their work
A2. Classify parts and components of the cardiovascular system & how they work.
A3. Analyze the physiology essential to understand clinical procedures in the function of respiratory system.
A4. Establish working knowledge of renal physiology.

B. **Subject-specific skills**

B1. Dealing ways with laboratory scientific instruments
B2. How to use the chemical and physical substances
B3. Perform working knowledge of human body biological and functional system and they coordinate.

Teaching and Learning Methods

Formal lectures, quizzes, problem based learning, students' seminars, and laboratory practical sessions.

Assessment methods

Daily short quizzes
Daily oral assessments
Theoretical and practical midterm examinations
Theoretical and practical final examinations

C. Thinking Skills

C1. Reproduce the clinically oriented physiological knowledge
C2. Justify the physiological basis of clinical cases

Teaching and Learning Methods

Lectures, quizzes, PBL.

Assessment methods
Scheduled assessment Students follow up

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. Self-confidence reinforcement for presentations D2. Presentation and report writing and preparation D3. Discriminating the anatomical details of human body D4. Correlating the theoretical knowledge and practical observations

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	7	CVS	**Cardiac muscle** **Introduction of CVS**	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
2	7	Excitable tissue	Excitable tissue Pacemaker potential electrocardiogram Action Potential	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
3	7	CVS	Electrocardiogram (continue) Cardiac cycle	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
4	7	Excitable tissue	Excitation of muscle	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
5	7	CVS	Cardiac output	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
6	7	Excitable tissue	Muscle contraction changes	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
7	7	CVS	Fatigue Cardiac output(continue)	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
8	7	Excitable tissue	Muscle energy and metabolism	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
9	7	CVS	Circulatory physiology	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
10	7	Excitable tissue	Neuro muscular junction	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
11	7	renal	Introduction to renal system Renal circulation & glomerular filtration	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
12	7	renal	Tubular reabsorption and secretion	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
13	7	Respiratory	Process of Respiration: Mechanics of Breathing	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams

14	7	Respiratory	Lung volumes and Capacities	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
15	7	Respiratory	Alveolar surface tension Acid base disturbance	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Guyton text book of Physiology 2021
Special requirements (include for example workshops, periodicals, IT software, websites)	Guyton text book of Physiology 2021. Practical physiology
Community-based facilities (include for example, guest Lectures , internship , field studies)	None

13. Admissions	
Pre-requisites	As determined by the University
Minimum number of students	As determined by the University
Maximum number of students	As determined by the University

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	Al-Nahrain University/ College of Medicine
2. University Department/Centre	Department of Physiology
3. Course title/code	**PHYPhy-22**
4. Programme(s) to which it contributes	MBChB
5. Modes of Attendance offered	Obligatory
6. Semester/Year	2nd semester / 2nd stage
7. Number of hours tuition (total)	105
8. Date of production/revision of this specification	24/6/2021
9. Aims of the Course	
1. Name the posture-regulating parts of the central nervous system and discuss the role of each.	
2. Describe the basal ganglia and list the pathways that interconnect them, along with the neurotransmitters in each pathway.	

3. Describe the components and functions of the visual, auditory and various special senses, define synaptic pathways and their roles in learning and memory.
4. List the consequences of insulin deficiency and explain how each of these abnormalities is produced, describe the structure of glucagon and other physiologically active peptides produced from its precursor.
5. List the major gastrointestinal secretions, their components, and the stimuli that regulate their production. Describe the major functions of the liver with respect to metabolism, detoxification, and excretion of hydrophobic substances.

10· **Learning Outcomes, Teaching ,Learning and Assessment Methods**
D- Knowledge and Understanding A1. Recognize basic knowledge on physiology of the central nervous system and its work A2. Classify parts and components of the endocrine system & how they work. A3. Analyze the physiology essential to understand clinical procedures in the function of gastero-intestinal tract.
B. **Subject-specific skills** B1. Dealing ways with laboratory scientific instruments B2. How to use the chemical and physical substances B3. Perform working knowledge of human body biological and functional system and they coordinate.
Teaching and Learning Methods
Formal lectures, quizzes, problem based learning, students' seminars, and laboratory practical sessions.
Assessment methods
Daily short quizzes Daily oral assessments Theoretical and practical midterm examinations Theoretical and practical final examinations
C. Thinking Skills C1. Reproduce the clinically oriented physiological knowledge C2. Justify the physiological basis of clinical cases
Teaching and Learning Methods

Lectures, quizzes, PBL.

Assessment methods

Scheduled assessment
Students follow up

D. General and Transferable Skills (other skills relevant to employability and personal development)
D1. Self-confidence reinforcement for presentations
D2. Presentation and report writing and preparation
D3. Discriminating the anatomical details of human body
D4. Correlating the theoretical knowledge and practical observations

11. **Course Structure**

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	7	CNS	Introduction to central nervous system physiology Synapses	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
2	7	CNS	Sensory pathways for transmitting somatic signals into the CNS Pain sensation	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
3	7	CNS	Thermal sensation The somatic sensory cortex	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
4	7	GIT	Oesophagus and stomach	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
5	7	CNS	Brain stem Motor Cortex	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
6	7	GIT	Function of the Liver	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
7	7	CNS	Transmission of signals from motor cortex to the muscles	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
8	7	GIT	Physiology of the pancreas	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
9	7	CNS	The Cerebellum Basal Ganglia	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
10	7	GIT	Digestion and Absorption	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
11	7	Endocrine	Neurohypophysis hormones Hypothalamus and adenohypophysis hormones	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
12	7	Endocrine	Growth hormone Thyroid gland & hormones	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
13	7	Endocrine	Ca++ metabolism, vitamin D, Parathyroid hormone	Theoretical lectures	Theoretical, quizzes and practical exams

				Practical sessions	
14	7	Endocrine	Adrenal gland: Anatomy and physiology	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams
15	7	Endocrine	Male reproductive system Female reproductive system	Theoretical lectures Practical sessions	Theoretical, quizzes and practical exams

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Guyton text book of Physiology 2021
Special requirements (include for example workshops, periodicals, IT software, websites)	Guyton text book of Physiology 2021. Practical physiology
Community-based facilities (include for example, guest Lectures , internship , field studies)	None

13. Admissions	
Pre-requisites	As determined by the University
Minimum number of students	As determined by the University
Maximum number of students	As determined by the University