

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specifications

Electrotherapy 2 (302 PHTH)

العلاج الكهربائي (302 عطب-3)

Second semester of the academic year 1437/1438 H

Course Specifications

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| Institution: Najran University | Date of Report: 8-1438 H |
| College/Department: College of Applied Medical Science / Department of Medical Rehabilitation Science | |

A. Course Identification and General Information

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| 1. Course title and code: Electrotherapy 2 (302 PHTH) | | العلاج الكهربائي (302 عطب-3) | |
| 2. Credit hours: 3 hrs (2 Theoretical + 1 Practical) | | | |
| 3. Program(s) in which the course is offered: Physiotherapy Program | | | |
| 4. Name of faculty member responsible for the course: Dr.Mohamed Samy Mohamed | | | |
| 5. Level/year at which this course is offered: 5th level/3rd year | | | |
| 6. Pre-requisites for this course: Electrotherapy1 (201 PHTH) | | | |
| 7. Co-requisites for this course: None | | | |
| 8. Location if not on main campus: None | | | |
| 9. Mode of Instruction (mark all that apply) | | | |
| a. Traditional classroom | <input checked="" type="checkbox"/> | What percentage? | 100 |
| b. Blended (traditional and online) | <input type="checkbox"/> | What percentage? | |
| c. e-learning | <input type="checkbox"/> | What percentage? | |
| d. Correspondence | <input type="checkbox"/> | What percentage? | |
| f. Other | <input type="checkbox"/> | What percentage? | |
| Comments: | | | |

B Objectives

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| <p>1. What is the main purpose for this course?</p> <ul style="list-style-type: none"> The aim of this course is to build up knowledge and skills necessary for the use of electrical stimulation modalities and their practical application for therapeutic purposes. Also, this course is designed to train students to be capable of using advanced electronic machinery in conducting different techniques of electrical stimulation necessary for competent practice and lifelong professional development. |
| <p>2. Briefly describe any plans for developing and improving the course that are being implemented.</p> <ul style="list-style-type: none"> Continuous updating of the information, knowledge and skills included in the course through continuous search for the new knowledge and skills available in recent publications (books, researches, internet and others). Verifying the information resources. Continuous improvements in teaching methods as well as encouraging the students to participate effectively in the lectures. Continuous evaluation of the course content, student level and establish plans accordingly. |

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| <p>C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)</p> <ul style="list-style-type: none"> This course introduces the electrotherapy which explores the different types of electrical stimulation currents and how to use these modalities in treatment program related to human injuries and diseases. The course contains detailed information on the physical and physiological principles, therapeutic effects, indications, contraindications, precautions and techniques of application for low and medium frequency currents as well as the hazards of electricity and electric shock. |
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| 1. Topics to be Covered | | |
| List of Topics | No. of Weeks | Contact Hours |
| <ul style="list-style-type: none"> Introduction to electrical stimulation | 1 | 2 Theoretical 2 Practical |
| <ul style="list-style-type: none"> Types of therapeutic electrical currents | 1 | 2 Theoretical 2 Practical |
| <ul style="list-style-type: none"> Neuromuscular electrical stimulation | 1 | 2 Theoretical 2 Practical |

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|---|---|------------------------------|
| • Indications and contraindications & precautions of electrical stimulation | 1 | 2 Theoretical 2 Practical |
| • Faradic current | 1 | 2 Theoretical 2 Practical |
| • Diadynamic current | 1 | 2 Theoretical 2 Practical |
| • High voltage pulsed galvanic stimulation (HVPGS) | 1 | 2 Theoretical 2 Practical |
| • Transcutaneous electrical nerve stimulation (TENS) | 1 | 2 Theoretical 2 Practical |
| • Interferential current | 1 | 2 Theoretical 2 Practical |
| • Russian current | 1 | 2 Theoretical 2 Practical |
| • Micro-current electrical neuromuscular stimulation (MENS) | 1 | 2 Theoretical 2 Practical |
| • Iontophoresis | 1 | 2 Theoretical 2 Practical |
| • Electrodiagnosis | 2 | 4 Theoretical 4 Practical |
| • Electrical stimulation of denervated muscle | 1 | 2 Theoretical 2 Practical |
| • Augmentation of muscle strength | 1 | 2 Theoretical 2 Practical |

| 2. Course components (total contact hours and credits per semester): | | | | | | |
|--|---------|----------|------------|-----------|--------|-------|
| | Lecture | Tutorial | Laboratory | Practical | Other: | Total |
| Contact Hours | 32 | | | 32 | | 64 |
| Credit | 2 | | | 1 | | 3 |

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| 3. Additional private study/learning hours expected for students per week. | 2 hours per week |
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

| | NQF Learning Domains And Course Learning Outcomes | Course Teaching Strategies | Course Assessment Methods |
|------------|---|--|---|
| 1.0 | Knowledge | | |
| 1.1 | Recognize the concepts and physiological effects of different electrical stimulation modalities. | <ul style="list-style-type: none"> Lectures | <ul style="list-style-type: none"> Quizzes Assignment Written exams |
| 1.2 | List the basic principles, indications, contraindications and precautions for electrical stimulation modalities. | <ul style="list-style-type: none"> Lectures | <ul style="list-style-type: none"> Quizzes Assignment Written exams |
| 2.0 | Cognitive Skills | | |
| 2.1 | Differentiate between the current parameters of electrical stimulation used for treating different conditions. | <ul style="list-style-type: none"> Lectures Practical sessions | <ul style="list-style-type: none"> Objective structured clinical exam Written exams |
| 2.2 | Compare between the therapeutic effects of different modalities of electrical stimulation. | <ul style="list-style-type: none"> Lectures Practical sessions | <ul style="list-style-type: none"> Objective structured clinical exam Written exams |
| 3.0 | Interpersonal Skills & Responsibility | | |
| 3.1 | Use self directed learning | <ul style="list-style-type: none"> Discussion | <ul style="list-style-type: none"> Assignment |
| 3.2 | Demonstrate ethically inside the lecture and practical classes with the staff, colleagues and environment like instruments, benches, practical devices. | <ul style="list-style-type: none"> Discussion Practical sessions | <ul style="list-style-type: none"> Assignment Objective structured clinical exam |

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| 4.0 | Communication, Information Technology, Numerical | | |
| 4.1 | Research internet as a mean of communication and source of information including electronic journals and data basis. | <ul style="list-style-type: none"> ● Presentation ● Discussion | <ul style="list-style-type: none"> ● Assignment |
| 5.0 | Psychomotor | | |
| 5.1 | Demonstrate and operate safely and effectively different equipments of electrical stimulation. | <ul style="list-style-type: none"> ● Practical sessions | <ul style="list-style-type: none"> ● Objective structured clinical exam |

| 5. Schedule of Assessment Tasks for Students During the Semester | | | |
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| | Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.) | Week Due | Proportion of Total Assessment |
| 1 | First quiz | 4 | 2.5 % |
| 2 | Assignment | 6 | 5% |
| 3 | Midterm written exam | 8 | 20% |
| | Midterm objective structured clinical exam | 8 | 10% |
| 4 | Second quiz | 13 | 2.5% |
| 5 | Final objective structured clinical exam | 17 | 20% |
| 6 | Final written exam | 18 | 40% |

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice.

- Office hours: Sunday 1-3 PM
- Academic advisor for level 5: Dr. Amr Bayomi
- Academic advisor for the program: Dr. Mohamed Samy

E. Learning Resources

1. Required Textbooks

- Alain Belanger. **Therapeutic Electrophysical Agents: Evidence Behind Practice**. 3rd Edition. Lippincott Williams & Wilkins, 2014.
- V Robertson, A Ward, J Low and A Reed. **Electrotherapy Explained: Principles and Practice**. 4th Edition. Elsevier, 2006.
- William E. Prentice. **Therapeutic Modalities in Rehabilitation**. 4th Edition. McGraw-Hill Companies, New York, 2011.
- T Watson. **Electrotherapy: Evidence Based Practice**. Elsevier, 2008.
- Michlovitz, S. Bellew, J. and Nolan, T. **Modalities for Therapeutic Intervention**. F A Davis, 2012.

2. Essential References Material (Journals, Reports, etc)

- Michelle H. C. **Physical Agents in rehabilitation: From Research to Practice**. 4th Edition. Saunders company, USA, 2013.
- John. E. F. and Tim. N. S. **Practical Electrotherapy. A guide to Safe Application**. Elsevier, 2007.
- Knight, K.L. and Draper, D.O. **Therapeutic Modalities: The Art and Science**. 1st Edition. Lippincott Williams and Wilkins, 2013.

3. Recommended Textbooks and Reference Material (Journals, Reports, etc)

- Mark Johnson. **Transcutaneous Electrical Nerve Stimulation (TENS): Research to Support Clinical Practice**. 1st Edition. Oxford University Press, 2014.
- Physiotherapy journal.

4. Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)

- www.electrotherapy.org
- www.electrotherapy.com
- WWW.physiotherapy.org
- WWW.WHO.org
- WWW.pubmed.gov

5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

N/A

F. Facilities Required

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| 1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) <ul style="list-style-type: none"> Lecture room (20-25 seats) and electrotherapy laboratory are already available. |
| 2. Computing resources (AV, data show, Smart Board, software, etc.) <ul style="list-style-type: none"> Computers and multimedia are already available. |
| 3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) <ul style="list-style-type: none"> Computerized electrotherapy equipments such as TENS, IF, HVPG, Faradic, Diadynamic, Russian and Micro-current stimulators. Library supplied with reference, text books and electronic resources. |

G Course Evaluation and Improvement Processes

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| 1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching <ul style="list-style-type: none"> Midterm evaluation feedback. Completion of course evaluation questionnaire by each student. End of term discussion between the teacher and the students regarding what went well and what could have gone better. |
| 2. Other Strategies for Evaluation of Teaching by the Program/Department Instructor <ul style="list-style-type: none"> Observations from colleagues. Class observation by supervisors. Independent assessment of standards achieved by the students. |
| 3. Processes for Improvement of Teaching <ul style="list-style-type: none"> Continuous updating of course contents according to the previous course report. Regular meetings where problems are discussed and solutions given. Workshops on teaching methods. Review of recommended teaching strategies. |

4. Processes for Verifying Standards of Student Achievement

- Check marking of a sample of student work by an independent faculty member.
- Periodic exchange and remarking of a sample of assignments with a faculty member in another institution.
- Students who believe they are under graded could have their papers checked by another reader.

5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

- Action plan for course improvement will be done according to the feedback about the course from students, other colleagues and the dean.

Faculty or Teaching Staff: Dr. Mohamed Samy Mohamed Abdrabo

Signature: *Mohamed Samy*

Date Report Completed: 8-1438 H

Received by: Dr. Raee Alhyani

Dean/Department Head

Signature: *Raee Alhyani*

Date: 21 / 8 / 1438