

## T6. Course Specification (CS)

Institution	<b>Najran University</b>	Date	<b>8/5/1438 H 5/2/2017</b>
College/Department	<b>College of Applied Medical Sciences / Department of Medical Rehabilitation Sciences / Physiotherapy Program</b>		

### A. Course Identification and General Information

1. Course title and code: <b>Biomechanics and Kinesiology II (304 PHTH)</b>			
2. Credit hours: <b>3 (2L + 1P)</b>			
3. Program(s) in which the course is offered: <b>physiotherapy</b> (If general elective available in many programs indicate this rather than list programs)			
4. Name of faculty member responsible for the course: <b>dr: Sobhy Mahmoud</b>			
5. Level/year at which this course is offered: <b>5<sup>th</sup> level/3<sup>rd</sup> year</b>			
6. Pre-requisites for this course (if any) <b>PHTH 203</b>			
7. Co-requisites for this course (if any)			
8. Location if not on main campus			
9. Mode of Instruction (mark all that apply)			
a. Traditional classroom	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="100"/>
b. Blended (traditional and online)	<input type="checkbox"/>	What percentage?	<input type="text"/>
c. e-learning	<input type="checkbox"/>	What percentage?	<input type="text"/>
d. Correspondence	<input type="checkbox"/>	What percentage?	<input type="text"/>
f. Other	<input type="checkbox"/>	What percentage?	<input type="text"/>
Comments:			

1. What is the main purpose for this course?

The aim of this course is to graduate students with sound knowledge in anatomy, biomechanics and pathomechanics of lower extremities joints as a foundation of physical rehabilitation. This course develops students understanding of normal kinematic and kinetic of different joints of the lower extremity and provides basis for gait analysis.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

- Continuous updating of the information, knowledge and skills included in the course through continuous search for the new knowledge and skills available in recent publication (books, research, internet).
- Continuous improvement in teaching methods as well as encouraging the students to participate effectively in lectures.
- Continuous evaluation of the course content, student level and establish plans accordingly.

**Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)**

- The course provides review of the anatomy, osteokinematics, arthrokinematics and pathomechanics of the hip, knee, patellofemoral, ankle and foot joints. Emphasis is placed on the study of normal and abnormal mechanics of the lower extremities joints.
- The course provides basic description of normal gait cycle and kinematics and kinetics gait analysis.

1. Topics to be Covered		
List of Topics	No. of Weeks	Contact Hours
1- Joints structure and types.	1	4 (2+2)
2- Structure of the hip joint.	1	4 (2+2)
3- Kinematics of the hip: Stability and motion of the hip joint.	1	4 (2+2)
4- Kinetics of the hip: Hip Joint Forces and Muscle Function	1	4 (2+2)
5- Pathomechanics of the hip joint.	1	4 (2+2)
6- Structure of the knee joint.	1	4 (2+2)
7- Motion, stability, and load transmission of the knee joint.	1	4 (2+2)
8- Pathomechanics of the knee joint.	1	4 (2+2)
9- Structure, function and kinetics of patellofemoral joint.	1	4 (2+2)
10- Structure, stability and motion of ankle joint.	1	4 (2+2)
11- Structure and motion of the foot.	1	4 (2+2)
12- Arches of the foot- pathomechanics of foot.	1	4 (2+2)
13- Gait cycle and kinematic gait analysis.	1	4 (2+2)
14- Kinetic gait analysis 1.	1	4 (2+2)
15- Kinetic gait analysis 2.	1	4 (2+2)

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	30	-	-	30	-	60
Credit	2	-	-	1	-	3

  

3. Additional private study/learning hours expected for students per week.	2 h
--	-----

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
<b>1.0</b>	<b>Knowledge</b>		
1.1	Recognize basic structure, function, and motion, of lower extremities joints.	lecture	Written exam- Oral exam
1.2	Define basic terminology used for gait analysis.	Lecture	Written exam- Oral exam
<b>2.0</b>	<b>Cognitive Skills</b>		
2.1	Explain different loads on lower extremity joints and specific function of joint structure.	Lecture, discussion, practical	Written exam- practical exam
2.2	Analyze mechanically lower extremity joints in normal and pathological conditions.	Lecture, discussion, practical	Written exam- practical exam
2.3	Analyze gait in both forms of analysis kinematics and kinetics	Lecture, discussion, practical	Written exam- practical exam
<b>3.0</b>	<b>Interpersonal Skills &amp; Responsibility</b>		
3.1	Demonstrate self-directed learning and Participate in class discussion.	Research- assignments, Lecture, discussion	Presentation- assignment, observation.
<b>4.0</b>	<b>Communication, Information Technology, Numerical</b>		
4.2	Research internet as a mean of communication and source of information	research activities, assignment	Individual presentation- assignment
<b>5.0</b>	<b>Psychomotor</b>		
5.1	Perform kinematic gait analysis.	small group work, practical	Practical exam

#### 5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Final written exam	16	40 %
2	Final practical and oral exams	16	20%
3	Midterm written exam	7	20%
4	Mid term practical and oral exams	7	10%
5	Quiz 1	4	2.5%
6	Quiz 2	12	2.5%
7	Assignment	6	5%

#### D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

Office hour: Monday 12-2 AM

Academic advisor for level 5: dr: amr bayomy.

Academic advisor for the program: dr: Mohamed sami.

#### E. Learning Resources

1. List Required Textbooks

- Norkin CC and Levangie PK. (2011). Joint structure and function. A comprehensive Analysis 5<sup>th</sup> edition, FA Davis Company, Philadelphia, USA.
- Jacquelin Perr ,Judith Burnfield . (2010). Gait Analysis: Normal and Pathological Function. 2<sup>nd</sup> edition, Slack Incorporated

2. List Essential References Materials (Journals, Reports, etc.)

- journal of biomechanics: <http://www.jbiomech.com/>

-Biomechanics Journals from Taylor & Francis:  
<http://explore.tandfonline.com/content/est/biomechanics-journals>

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

-<https://sdl.edu.sa/>-

-Biomechanics yellow pages - <http://www.isbweb.org>

- Biomechanics world wide - <http://www.per.valberta.ca/Biomechanics>

- Basic anatomy: [www.utranet.com/](http://www.utranet.com/) [www.smith/anatomy-html](http://www.smith/anatomy-html)

-Orthopaedic medical information: [www.opendoor.com/albert/one/orthopaedic/html](http://www.opendoor.com/albert/one/orthopaedic/html)

- [American Society of Biomechanics www.asbweb.org/](http://www.asbweb.org/)

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

Not applied

#### F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)

**20-30 seats**

**Motion analysis lab**

2. Computing resources (AV, data show, Smart Board, software, etc.)
- Data show – smart board
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

## G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching
- 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
- course report
- student evaluation report
3 Processes for Improvement of Teaching
- Regular meetings where problems are discussed and solutions given.
- Workshops on teaching methods
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)
• Check marking of a sample of student work by an independent faculty member.
• 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.

Name of instructor:  
Dr. Sobhy Mahmoud

Signature: *Sobhy Mahmoud*

Date Report Completed: 8/5/1438 H - 5/2/2017

Program coordinator: Dr. Raee Alhyani

Signatur: *Raee Alhyani*

Date received: 8/5/1438 H - 5/2/2017