

**SPORT SCIENCE & MANAGEMENT  
SS1020 HUMAN ANATOMY AND PHYSIOLOGY**

<b>Academic Year</b>	2024-25	<b>Semester</b>	1
<b>Course Coordinator</b>			
<b>Course Code</b>	SS1020		
<b>Course Title</b>	Human Anatomy and Physiology		
<b>Pre-requisites</b>	-		
<b>No of AUs</b>	3		
<b>Contact Hours</b>	39		

**Course Aims**

This course aims to introduce the various organ systems of the human body and the part that each system plays in physical performance, health, and fitness. The course is designed as a foundation course in human anatomy & physiology for students of sport science. The course will provide a strong foundation in anatomy and physiology that can be applied in future fields of sport science, including exercise physiology, sport biomechanics, motor control, sport and exercise psychology, sport injuries, health & wellness, and physical activity for special populations.

**Intended Learning Outcomes (ILO)**

By the end of this course, you should be able to:

1. identify the major structures and functions of each human organ system.
2. demonstrate and explain joint movements using anatomical terminology.
3. identify the joint actions and muscles involved in sport or exercise movements.
4. articulate the role of each organ system to human performance, health, and fitness.

**Course Content**

The following topics will be covered:

1. Organisation of the human body
2. Skeletal system and joints
3. Introduction to the skeletal muscle system
4. Skeletal muscle system: the upper extremities
5. Skeletal muscle system: the lower extremities
6. Skeletal muscle system: the trunk and spinal column
7. Nervous system: Organisation and function

8. Nervous system: neural control
9. Endocrine system.
10. Cardiovascular system
11. Respiratory system
12. Digestive system

### NTU Competencies & Graduate Attributes

NTU Competencies	
Character	√
Competence	√
Cognitive agility	

NTU Graduate Attributes	
Graduate Attributes	Level (i.e., basic, intermediate, advanced)
1. Decision Making	Basic
2. Critical Thinking	Basic
3. Project Management	Intermediate
4. Collaboration	Intermediate

### Assessment (includes both continuous and summative assessment)

Component	ILO Tested	Weighting	Team/ Individual	Assessment Rubrics
1. Group Presentation	1, 2, 3	30%	Team	Appendix 1, 2
2. Class Test	1, 4	20%	Individual	
3. Final Examination	1, 2, 3, 4	50%	Individual	
Total		100%		

### Formative Feedback

Feedback for learning will be verbally provided during each laboratory class session, where you have the opportunity to demonstrate anatomical and muscular movements and learn techniques and apply yourselves to problems related to each organ system.

For the presentation, you will be provided with written feedback as a group pertaining to your group's performance. Generic verbal and written feedback will be provided to the class for the test and examination.

### Learning and Teaching Approach

Approach	How does this approach support you in achieving the learning outcomes?
Lectures	Lectures will provide information for key learning concepts and

	theories and support understanding of key concepts
Laboratories	<p>Laboratories will:</p> <ul style="list-style-type: none"> <li>- Give hands-on experiential learning to support key theories and information provided in class.</li> <li>- Provide tasks for you to utilise what you recently learned to solve specific problems.</li> <li>- Give space and time for small group activities and discussions to allow you to assimilate the content and for sharing learning.</li> <li>- Allow verbal feedback from your instructor on techniques and material.</li> </ul>
Online Learning	Time will be given for learning from online materials as a part of the flip teaching approach. These materials will support key concepts covered in lectures and laboratories.

### **Reading and References**

#### NIE Research and Publications

Nil

#### Other Readings and References

1. Martini FH, Nath JL & Bartholomew EF. *Fundamentals of Anatomy & Physiology*, 11<sup>th</sup> Edition, Pearson, 2018. Core text.

Please note that the core text will be available on NTULearn through Pearson's MyLab and Mastering A&P. This tool contains a suite of online learning materials to support the lectures and laboratories and to self-test your learning.

### **Course Policies and Student Responsibilities**

#### (1) General

You are expected to complete all assigned pre-class readings and activities, attend all classes – lecture and laboratory - punctually and, submit all scheduled assignments and take tests by due dates. You are not allowed to swap laboratory groups without express permission from the course coordinator. You are expected to take responsibility to follow up with course notes, assignments and course related announcements for sessions they have missed. You are expected to participate in all discussions and class activities unless there is a valid medical reason not to do so.

#### (2) Absenteeism

Absence from class without a valid reason will affect your overall course grade. Valid reasons include falling sick, supported by a medical certificate and participation in NTU's approved activities supported by an excuse letter from the relevant bodies.

If you miss a lecture, you must inform the course instructor via email prior to the start of the class.

### (3) Absence Due to Medical or Other Reasons

If you are sick and not able to complete a test or submit an assignment, you have to submit the original Medical Certificate (or another relevant document) to the Sport Science & Management (or Home School) administration to obtain official leave. Without this, the missed assessment component will not be counted towards the final grade. There are no make-ups allowed.

### (4) Attire and safety

You are expected to participate in practical laboratory activities. Some of these activities involve exercise. You are expected to wear appropriate attire for participation, obey laboratory safety rules, and take appropriate care of and return all equipment after use.

## Academic Integrity

Good academic work depends on honesty and ethical behaviour. The quality of your work as a student relies on adhering to the principles of academic integrity and to the NTU Honour Code, a set of values shared by the whole university community. Truth, Trust and Justice are at the core of NTU's shared values.

As a student, it is important that you recognise your responsibilities in understanding and applying the principles of academic integrity in all the work you do at NTU. Not knowing what is involved in maintaining academic integrity does not excuse academic dishonesty. You need to actively equip yourself with strategies to avoid all forms of academic dishonesty, including plagiarism, academic fraud, collusion, and cheating. If you are uncertain of the definitions of any of these terms, you should go to the [NTU Student Academic Integrity Policy and Procedures link](#) in the Student Portal for more information. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.

Special note: Generative AI tools will be allowed to the extent stipulated for each assignment in the assignment instructions, and any such use must be duly referenced or disclosed.

## Course Instructors

Instructor	Office Location	Phone	Email
TBA			

## Planned Weekly Schedule

Week	Topic	ILO	Readings/ Activities
1	Organisation of the human body	1	Chapter 1
2	Skeletal System and joints	1, 2	Chapters 6-9

3	Introduction to the skeletal muscle system	1, 2	Chapters 10, 11
4	Skeletal muscle system: the upper extremities	2, 3	Chapter, 11
5	Skeletal muscle system: the lower extremities	2, 3	Chapter, 11
6	Skeletal muscle system: the trunk and spinal column	2, 3	Chapter, 11
7	Group presentations	1-3	Chapter 12
Recess Week			
8	Nervous system: organisation and function	1, 4	Chapter 12
9	Nervous system: neural control	1, 4	Chapters 13-15
10	Endocrine system	1, 4	Chapter 18
11	Cardiovascular system	1, 4	Chapters 19-21
12	Respiratory system	1, 4	Chapter 23
13	Digestive system	1, 4	Chapter 24, 25

**Appendix 1: Assessment Criteria for Group Presentation (30% Final Grade including peer evaluation – marked out of 100)**

	A+, A, A-	B+, B	B-, C+, C	D+, D	F
<b>Quality of presentation (max 20)</b>	Information provided clearly answers the question set out. Presentation is clear and the flow is coherent and logical. Pace is appropriate.	Information mostly answers the question set. Presentation is mostly clear and the flow generally coherent and logical.	There are weaknesses or absences in the information provided, and the flow of presentation is unclear at times.	Much of the information provided does not answer the question, and the flow is difficult to understand.	Little relevant information and unclear flow.
<b>Demonstration of material (max 40)</b>	Able to clearly demonstrate and thoroughly explain skeletal muscle movements associated with sport and exercise. Able to answer questions in a poised and articulate manner with a high level of confidence.	Good demonstration and explanation of skeletal muscle movements associated with sport and exercise. Able to answer most of the questions clearly and with confidence.	Clear but basic demonstration and explanation of skeletal muscle movements associated with sport and exercise. Able to answer some of the questions clearly but lacks confidence at times.	Poor demonstration and weak explanation of skeletal muscle movements associated with sport and exercise. Has difficulty answering questions and lacks confidence.	Unable to demonstrate or explain skeletal muscle movements associated with sport and exercise. Unable to answer questions.
<b>Use of technology (max 10)</b>	Uses relevant technology very well to supplement and enhance the quality of presentation.	Good use of technology to improve the presentation.	Some use of technology to help improve the presentation.	Little use of relevant technology in the presentation.	No clear use of technology in the presentation.

<b>Communication and teamwork* (max 20)</b>	Communication is very clear and easy to understand. All members of the team make active contributions .	Communication is clear and easy to understand most of the time. Most members of the team make good contributions .	Communication is unclear at times. Varied contributions of different team members.	Communication is unclear and there and difficult to understand. Most contributions provided by a single team member.	Communication is unclear and not possible to understand. No team member makes an active contribution.
<p>*All individuals within the group are expected to contribute to work involved in the planning, data collection and output. An individual's score may vary from that of the team based on feedback and observations in this area.</p>					

## Appendix 2: Peer Evaluation Component for Presentation

For the peer evaluation component, group members within each group will be asked to rate each of their peers, and the score received for each group member will be the average of the scores from their peers' round to the nearest integer (e.g., student gets a score of 9, 8 and 8, respectively from the 3 other group members and will receive a score of 8 (average of 8.3)).

Marks	10, 9	8, 7	6, 5	4, 3	2, 1, 0
<b>Peer Evaluation</b> <b>(10 max)</b>	Excellent work; was a crucial component of the group's success.	Very strong work; contributed significantly to the group.	Sufficient effort; contributed adequately to the group.	Insufficient effort; met minimal standards of the group.	Little or weak effort; was detrimental to the group.

NB: Numeric scores for peer review do not necessarily align with the letter grade categories.