



**SPORT SCIENCE & MANAGEMENT  
SS3114 PHYSICAL ACTIVITY AND HEALTH**

<b>Pre-requisites</b>	SS1104 Introduction to Health & Wellness
<b>No of AUs</b>	3
<b>Contact Hours</b>	Total hours: 39 Lecture: 20 Laboratory: 19

**Course Aims**

The aim of this course is to examine how physical activity and inactivity can prevent and manage a number of the most common non-communicable diseases affecting society. The course is designed to be an upper level module for undergraduate sport science students. The course will examine the various methodology for the measurement and assessment of physical activity and the evidence for a role of physical activity and inactivity in preventing and treating cardiovascular diseases, obesity, type 2 diabetes, and metabolic syndrome in adults and children. Laboratory sessions will provide hands-on opportunities to examine some of these topics and guest lectures/visits will support the lecture material.

**Intended Learning Outcomes (ILO)**

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

1. Define disease, health, physical activity, physical inactivity, sedentary time and exercise.
2. Describe the evidence linking physical inactivity with common non-communicable diseases.
3. Perform appropriate pre-exercise screenings.
4. Assess individuals for their cardiovascular disease risk.
5. Appraise for common health conditions.
6. Design physical activity programmes for common non-communicable diseases.
7. Critically discuss the research evidence showing that physical activity can be used to prevent and treat common non-communicable diseases.
8. Quote public health recommendations for physical activity.

**Course Content**

The following topics will be covered:

1. Assessing evidence.
2. Measuring health, activity and fitness.
3. Physical activity and coronary heart disease.
4. Physical activity and stroke.
5. Measuring cardiovascular disease risk factors.
6. Physical activity and obesity.
7. Assessment of obesity.
8. Physical activity and energy expenditure.
9. Physical activity and type 1 diabetes.

10. Physical activity and type 2 diabetes.
11. Physical activity and metabolic syndrome.
12. Physical activity in children.
13. Physical activity and public health.

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

Component	Course ILO Tested	Related Programme LO or Graduate Attributes	Weighting	Team/ Individual	Assessment rubrics
1. Laboratory assignment	3, 4, 6, 7	A1, A2, A3, B1, B2, C1, C2, D1, E1	40%	Individual/team	Appendix 1
2. Examination	1-8	A1, B1, B2	60%	Individual	
Total			100%		

Graduates of the SSM programme should show:

<b>Competence</b>	
A1: {Understanding}	process and interpret information, evidence and methodologies related to sport science or sport management
A2: {Self-discipline}	independently apply themselves to solve relevant problems
A3: {Modern Tool Usage}	use technology to communicate and provide feedback on sports activities, improve sports performance, monitor and increase physical activity, provide exercise prescription, solve problems for disadvantaged athletes/sportspeople, and commercialize and innovate sports products, events and services
<b>Creativity</b>	
B1: {Critical Thinking}	critically assess the applicability of sport science and sport management tools toward problems and in the workplace
B2: {Analytical Thinking}	critically analyse data from a multitude of sources
B3: {Interdisciplinary Thinking}	connect the subfields of sport science and sport management to tackle problems
B4: {Innovation}	be able to develop new applications or improve existing techniques

B5: {Entrepreneurship}	develop new ideas and plans for sport science, businesses and events
<b>Communication</b>	
C1: {Effective Communication}	present findings or ideas from sport science and sport management research logically and coherently at the appropriate level for the intended audience and in all forms of communication
C2: {Teamwork}	work in teams on projects that require sport science or sport management application, and communicate results via demonstration, verbally and in written form
<b>Civic-Mindedness</b>	
D1: {Professionalism}	act in a manner that respects the profession and meets the expectations of the sport science and sport management industry
D2: {Inclusiveness}	promote sport and physical activity in all individuals to bring people together and improve physical, social and psychological outcomes
<b>Character</b>	
E1: {Ethical behaviour}	act with integrity and in a socially responsible and ethical manner in line with societal and legal expectations in relation to collecting and analysing data of people and protecting personal data with appropriate computer security
E2: {Sportsmanship}	demonstrate appropriate safety, concern and good conduct in sport situations towards other individuals involved in the activity

### **Formative feedback**

Feedback for learning will be verbal provided during laboratory classes where you have the opportunity to learn techniques and apply yourselves to problems related to each organ system. Generic verbal and written feedback will be provided for the laboratory report and final 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	Laboratories will: <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 have 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 opportunity for verbal feedback from instructor on techniques and material.</li></ul>
Online learning	Time will be given over for learning from online materials as a part of a flipped teaching approach. These materials will support key concepts covered in lectures and laboratories.

## Reading and References

Recommended text:

- Hardman, A.E., Stensel, D.J. (2009). *Physical activity and health: The evidence explained*. 2<sup>nd</sup> Edition. Routledge.

## 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 the scheduled assignment by the due dates. You are expected to take responsibility to follow up with course notes, assignments and course related announcements for sessions 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. All of 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 recognize 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 [academic integrity website](#) for more information. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.

Collaboration is encouraged for your work in the class and laboratories because peer-to-peer learning helps you understand the subject better and working in a team trains you to better communicate with others. Working together and exchanging ideas and experiences will help improve the quality of your assessed presentation. It is important to credit others for their contribution to your work which promotes ethical practices and academic integrity.

### Course Instructor

Instructor	Office Location	Phone	Email
TBC	XXX	XXX	XXX

### Planned Weekly Schedule

Week	Topic	Course LO	Readings/ Activities
1	Assessing evidence	LO1, LO2	Chapter XX, Pages XX-XX
2	Measuring health, activity and fitness	LO1, LO2	Chapter XX, Pages XX-XX

3	Physical activity and coronary heart disease	LO2, LO3, LO4, LO6, LO7	Chapter XX, Pages XX-XX
4	Physical activity and stroke	LO2, LO3, LO4, LO6, LO7	Chapter XX, Pages XX-XX
5	Physical activity and obesity I	LO2, LO6, LO7	Chapter XX, Pages XX-XX
6	Assessment of obesity	LO5	Chapter XX, Pages XX-XX
7	Physical activity and energy expenditure <b>Laboratory assignment – handout</b>	LO6	Chapter XX, Pages XX-XX
8	Half-term		
9	Physical activity and type 1 diabetes <b>Laboratory assignment – data collection</b>	LO2, LO5, LO6, LO7	Chapter XX, Pages XX-XX
10	Physical activity and type 2 diabetes <b>Laboratory assignment – data collection</b>	LO2, LO5, LO6, LO7	Chapter XX, Pages XX-XX
11	Physical activity and metabolic syndrome <b>Laboratory assignment – data collection</b>	LO2, LO5, LO6, LO7	Chapter XX, Pages XX-XX
12	Children’s health	LO2, LO5, LO6, LO7	Chapter XX, Pages XX-XX
13	Physical activity and public health recommendations	LO8	Chapter XX, Pages XX-XX
14	Revision	LO1 – LO8	

**Appendix 1: Assessment rubric for Laboratory Assignment (40% Final Grade – marked out of 100%)**

	A+, A, A-	B+, B	B-, C+, C	D+, D	F
<b>Team: Groupwork and data collection* (max 20)</b>	Clear teamwork, planning and group cohesion with appropriate division of work by each member of the group contributing to the successful collection of data.	Good teamwork and cohesion but improvement needed in planning of roles by group members for data collection.	Obvious improvements needed in teamwork and cooperation of members to improve data collection.	Team members working in small cliques with infrequent whole group cooperation.	Poor teamwork with little or no cooperation among group members during data collection processes.
<b>Individual: Structure and clarity of writing &amp; presentation (max 10)</b>	Well structured. Very minor grammatical and spelling errors. Table and/or figures well presented.	Some improvement in structure possible. Few grammatical and spelling errors. Tables and/or figures well presented.	Improvement in structure needed. Obvious grammatical and spelling errors. Tables and figures need improving.	Poor structure. Many spelling and grammatical errors. Poor presentation of tables and figures.	Coherent structure absent. Copious spelling and grammatical errors. Very poor presentation of tables and figures.
<b>Individual: Introduction, background, aims, hypotheses and objectives (max 20)</b>	Background statement of problem clearly defined. Aim clear.	Background statement of problem could be clearer. Small improvement in defining aim of study needed.	Background statement of problem and aim need improving.	Background statement and aim not clear.	Background statement and aim unclear.
<b>Individual: Methods (max 20)</b>	Comprehensive description of methods.	Good description of methods with few errors.	Methods described but with some errors or omissions.	Methods described difficult to follow and omissions.	Little coherent description of methods.
<b>Individual: Data analysis and interpretation (max 20)</b>	Appropriate data analysis applied and interpretation of results.	Good data analysis and interpretation of results with few errors.	Incorrect data analysis in parts and interpretation of results incorrect or inappropriate in parts.	Poor data analysis and interpretation of results.	Inappropriate or very poor data analysis and interpretation of results.
<b>Individual: Discussion and</b>	Conclusion(s) clearly related to results.	Conclusion(s) clear with small errors.	Some conclusion(s) not supported	Conclusion(s) generally	Conclusion(s) unclear, poor

<b>concluding remarks (max 10)</b>			by study results.	inappropriate or incorrect.	and inappropriate.
*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.					