

SPORT SCIENCE & MANAGEMENT
SS3323 EXERCISE PRESCRIPTION

Academic Year	2025-26	Semester	2
Course Coordinator			
Course Code	SS3323		
Course Title	Exercise Prescription		
Pre-requisites	SS1020 Human Anatomy and Physiology		
No of AUs	3		
Contact Hours	39		

Course Aims

This applied exercise physiology course aims to know 1) the role of exercise and physical activity for health as an intervention to manage chronic health conditions and 2) the exercise prescriptions for select chronic health conditions.

Intended Learning Outcomes (ILO)

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

1. understand how the select chronic health conditions covered in this course and the common non-exercise treatment for these conditions impact exercise prescription.
2. evaluate the physiological importance and provide evidence-based health benefits of exercise and physical activity in general and for the select chronic health conditions,
3. write basic exercise programmes, including home-based exercise programmes, for individuals with the select chronic health conditions using exercise testing and prescription guidelines from leading health and exercise authorities and
4. plan and demonstrate home-based exercises with progression in difficulty for frail individuals.

Course Content

The following topics will be covered:

- Sarcopenia
- Osteoporosis
- Arthritis
- Cancer
- Obesity
- Diabetes

- Coronary heart disease
- Stroke
- Spinal cord injuries
- Neuromuscular disorders (muscular dystrophy, multiple sclerosis and/or others)

For each of the health conditions listed above, the following will be covered **where applicable**:

1. Description, definitions and types
2. Symptoms
3. Screening and diagnosis
4. Prevalence and incidence rates (local, regional and/or international)
5. Burden of disease (local, regional and/or international)
6. Consequences
7. Mortality and survival rates (local, regional and/or international)
8. Causes and risk factors
9. Current treatment options
10. Side effects of current treatment options
11. Efficacies and/or effectiveness of current treatment options
12. Efficacies and/or effectiveness in using exercise or physical activity on its own or in conjunction with other treatment options in the prevention and management of the health condition
13. Recommended exercise prescription/guidelines for physical activity for the health condition in managing the condition, including general and specific considerations and contraindications, if any.

NTU Competencies & Graduate Attributes

NTU Competencies	
Character	
Competence	√
Cognitive agility	√

NTU Graduate Attributes	
Graduate Attributes	Level (i.e., basic, intermediate, advanced)
1. Adaptability	Intermediate
2. Building Inclusivity	Intermediate
3. Care for Society	Intermediate
4. Collaboration	Basic
5. Systems Thinking	Intermediate

Assessment (includes both continuous and summative assessment)

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

Formative Feedback

For lecture-based sessions, you will be asked key conceptual questions to help you understand the theoretical content. Verbal and written feedback for learning will be provided during and after each presentation, respectively. Generic written feedback will be provided to the class for the term paper.

During the completion of the Group Presentation, you will be given verbal feedback as a group pertaining to your assessed performance. Generic verbal and written feedback will be provided to the class for the test and examination.

Throughout the course, you will have the opportunity to use recording devices to help record your classmates demonstrating anatomical and muscular movements for observation and analysis. During the learning process, you will receive verbal feedback on the techniques and mistakes in observation and analysis. In addition, suggestions for improvement will be provided.

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.
Presentation	This approach supports you to research and learn independently. You will have the opportunity to explore and gather knowledge beyond the classroom. This also provides you with soft skills, such as confidence in delivering clear and concise presentations.
Term Paper	You will be required to write a mini review paper on a topic related to the module, for example, the evidence-based benefits of exercise/physical activity for one of the assigned health conditions covered in this course. The term paper also 1) tests and deepens your understanding, 2) enhances your ability to apply what you have learnt in class, and 3) develops your writing skills for scientific writing. You will also need to work in a team effectively.

Reading and References

NIE Research and Publications

Nil

Other Readings and References

Required Course Texts:

1. American College of Sports Medicine, *ACSM's guidelines for exercise testing and prescription*, 11th Edition, Wolters Kluwer Health/Lippincott Williams & Wilkins, 2021.

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, 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	Introduction and Sarcopenia	1-3	Chapters 1-2, pg 53-55, pg 66-69 Pg 188-195
2	Sarcopenia	1-3	Pg 188-195
3	Osteoporosis Presentation	1-4	Pg 345-347
4	Arthritis Presentation	1-4	Pg 297-301
5	Cancer Presentation	1-4	Pg 302-311
6	Cancer Presentation	1-4	Pg 302-311
7	Obesity, Hypertension and Dyslipidemia Presentation	1-4	Chapter 10
Recess Week			
8	Diabetes Presentation	1-4	Pg 226-251
9	Coronary heart disease Presentation	1-4	Pg 226-251
10	Stroke Presentation	1-4	Pg 248-251
11	Spinal cord injuries Presentation	1-4	Pg 355-361
12	Neuromuscular disorders Presentation	1-4	Pg 339-344
13	Term paper due	2-3	Revision for exams

Appendix 1: Assessment Criteria for Individual Presentation (30% Final Grade – marked out of 100)

	A+, A, A-	B+, B	B-, C+, C	D+, D	F
Quality of presentation (max 30)	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.
Understanding of material (max 40)	Demonstrates a very good understanding of the material. Able to answer questions in a poised and articulate manner with a high level of confidence.	Demonstrates a good understanding of the material. Able to answer most of the questions clearly and with confidence.	Demonstrates a basic understanding of the material. Able to answer some of the questions clearly but lacks confidence at times.	Demonstrates a weak understanding of the material. Has difficulty answering questions and lacks confidence.	Does not demonstrate any understanding of the material. Unable to answer questions.
Use of technology (max 10)	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.
Communication (max 20)	Communication is very clear and easy to understand.	Communication is clear and easy to understand most of the time.	Communication is unclear at times.	Communication is unclear and there and difficult to understand.	Communication is unclear and not possible to understand.

Appendix 2: Assessment Criteria for Group Term Paper (20% Final Grade – marked out of 100)

	A+, A, A-	B+, B	B-, C+, C	D+, D	F
Structure of paper, quality of writing & presentation (max 20)	Paper is well structured. Very minor grammatical and spelling errors. All tables, figures, graphs, and charts are well presented.	Some improvement in structure possible. Few grammatical and spelling errors. Most tables, figures, graphs and charts are well presented.	Improvement in structure needed. Obvious grammatical and spelling errors. Tables, figures, graphs and charts need improving.	Poor structure. Many spelling and grammatical errors. Poor presentation of tables, figures, graphs and charts.	Coherent structure absent. Copious spelling and grammatical errors. Very poor presentation of tables, figures, graphs and charts.
Literature review, understanding of the assigned topic and referencing (max 40)	Review incorporates all main relevant background studies with critical appraisal. No referencing errors.	Most relevant background studies included a good attempt to critically appraise previous work. Few referencing errors.	Some relevant references cited. Some attempt at critical appraisal of previous work. Some references cited incorrectly or absent.	Small number of references cited. Very little critical appraisal of previous work. Large number of referencing and citation errors.	Few references cited with little or no relevance to study the problem. No critical appraisal of studies. Very poor referencing.
Discussion and concluding (max 40)	Main findings clearly stated and related to the aims of the study and put in the context of previous literature. Conclusions were clearly related to results.	Main findings generally stated and well-related to the aims of the study. Good attempt to place study findings in the context of previous literature. Conclusions clear with small errors.	Main findings mostly stated. Attempt to place findings in relation to previous literature. Some conclusions not supported by the study results.	Main findings unclear and poorly related to the aims of the study. Little attempt to put findings in context of previous literature. Conclusions generally inappropriate or incorrect.	Main findings not stated. Findings not related to the aims of the study or put in context of previous literature correctly. Conclusions unclear, poor and inappropriate.