



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of
Health Sciences

Fakulteit Gesondheidswetenskappe
Lefapha la Disaense tša Maphelo

Section Sports Medicine

Study guide

2018 / 2019

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STUDENT SUPPORT

The Faculty of Health Sciences has a support system in place to assist students who:

- are struggling with psychological distress/disorders,
- are experiencing stress or emotional problems,
- are struggling to cope with the demands of the course,
- or any other problems in their lives.

Students who would like to seek help for any of these problems are encouraged to access the student support system. A psychiatrist is available to assist students.

Dr P Malherbe, a psychiatrist not employed in the Department of Psychiatry, has consultations with students every last Thursday of every month from 12:00 onwards. All information from the consultations are strictly confidential and the service is free of charge.

To make an appointment, students may contact Ms Emmie van der Merwe at (012) 319-2500 or email emmie.vandermerwe@up.ac.za.

The following information is required to make an appointment:

- Student name
- Course name and year
- Student number
- Cell number
- Name of person who referred student (if applicable)

The Faculty is committed to provide support for students in order to assist them in successfully completing the course. Students are encouraged to seek help when they are not coping instead of suffering in silence.

STUDY GUIDE
FOR
MSc SPORTS MEDICINE

2018 / 2019

STUDY GUIDE

FOR

MSc SPORTS MEDICINE

**Prof D C Janse van Rensburg
and members of the Faculty of Health Sciences**

Course Code 10253141

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SECTION A

ORGANISATIONAL COMPONENT

GENERAL ORGANISATIONAL COMPONENT

1. Lecturers responsible for the course

Various departments of the different faculties and schools as well as private practitioners jointly present the MSc Sports Medicine course. **Prof DC Janse van Rensburg**, Sports Centre R1-92 (Tel 012-420 6057) acts as **head of the section and head of the course**. Other lecturers involved are:-

SECTION SPORTS MEDICINE		
Prof Christa Janse van Rensburg (Course Co-ordinator)	Head of Department Course co-ordinator	christa.jansevanrensburg@up.ac.za
Dr Maki Ramagole	Sports physician/Research	Maki.ramagole@up.ac.za
Dr Rina Grant	Research	rina.grant@up.ac.za
Mrs Audrey Jansen van Rensburg	Research	Audrey.jansenvanrensburg@up.ac.za

NAME	DEPARTMENT/DIVISION	E-MAIL
Ally, Mahmood, Dr	Internal medicine	mahmood.ally@up.ac.za
Ball, Steven. Mr	TuksSport	steven.ball@up.ac.za
Barsky, Etti. Dr	Sports physician	etti@preggibellies.co.za
Becker, Hennie. Prof	Surgery	hennie.becker@up.ac.za
Campbell, Raymond. Dr	Urologist	samantha@urology.co.za
Cloete, Rian. Prof	Sports Law	rian.cloete@up.ac.za
De Villiers, Nicki. Ms	Sports nutritionist	nicki.devilliers@hpc.co.za
De Wet, FA. Prof	Faculty of Dentistry	
Du Plessis, Jacques. Dr	Orthopedic surgeon	jjdp@iafrica.com
Du Toit, Peet. Prof	Physiology	peet.dutoit@up.ac.za
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Gericke, Gerda. Ms	Human nutrition	gerda.gericke@up.ac.za
Human, Monja. Dr	Sports psychologist	monja.human@hpc.co.za
Kakaza, Mandisa. Prof	Neurology	mandisa.kakaza@up.ac.za
Kelbrick, Henry. Dr	Sports physician	medsport@mweb.co.za
Meyer, Helgard. Prof	Family medicine	helgard.meyer@up.ac.za
Minnaar, Mark. Dr	Ophthalmologist	ophthalm@lantic.net
Naude, Merchen. Dr	Sports physician	merchensport@gmail.com
Nematswerani, Ephraim. Dr	Sports physician	humbu@mweb.co.za
Ngcelwane, Mthunzi. Prof	Orthopaedic surgeon	mthunzi.ngcelwane@up.ac.za
Nolte, Kim. Dr	Biokinetics and Sport Science	kim.nolte@up.ac.za
Oosthuizen, Helena. Dr	Endocrinologist	hoosthuizen@mweb.co.za
Pillay, Lee. Dr	Sports physician	drpillay@absamail.co.za
Potgieter, Johan. Dr	Haematologist	johancp@up.ac.za
Schwellnus, Martin. Prof	Sport, Exercise Medicine and Lifestyle Institute	mschwell@iafrica.com
Smuts, Andri. Mrs	Physiotherapist	physio@hpc.co.za
Steenkamp, Tracey. Ms	Biokinetics and Sport Science	tracy.steenkamp@up.ac.za
Van der Watt, Renee. Dr	Pathologist	vanderwattr@ampath.co.za
Van Duuren, Elsa. Dr	Rheumatologist	evduuren@mweb.co.za
Van Schoor, Albert. Prof	Anatomy	albert.vanschoor@up.ac.za
Vermaak, Slade. Dr	Orthopedic surgeon	sladevermaak@gmail.com
Viljoen, Jacques. Dr	ENT specialist	p.j.v@mweb.co.za
Viviers, Pierre. Dr	Pulmonologist	pulmonology@live.com
Volschenk, Mike. Mr	Clinical library	mike.volschenk@up.ac.za
Webber, Lynne. Prof	Virologist	lynne.webber@up.ac.za

Extra-ordinary Lecturers

NAME	FIELD OF EXPERTISE	ADDRESS	E-MAIL
Prof Efraim Kramer	Emergency medicine	University of the Witwatersrand	efraim.kramer@wits.ac.za
Dr Jon Patricios	Sports physician	Morningside Clinic	jpat@mweb.co.za
Dr Rob Collins	Sports physician	Centre for Sports Medicine and Orthopaedics, Rosebank	robcollins@wol.co.za
Dr. Org Strauss	Sports physician	High Performance Centre, University of Pretoria	orgstrauss@yahoo.com
Dr Phatho Zondi	Sports physician	Sports Science Institute, University of Cape Town	phathokuhlez@gmail.com
Dr Philda de Jager	Sports physician	High Performance Centre, Pretoria	pdjager@mweb.co.za
Dr Louis Holtzhausen	Sports physician	Aspetar, Qatar	holt.louis@gmail.com
Dr. Lee Pillay	Sports physician	Mediworx-S, Johannesburg	drpillay@absamail.co.za
Dr Martin Mpe	Cardiologist	Pretoria Heart Hospital	martin@mtmpe.co.za
Dr Zanet Oschman	Sonographer	Jakaranda Hospital	zanet@mweb.co.za
Dr. Mark Velleman	Radiologist	Little Company of Mary	markilze@mweb.co.za
Dr Helen Bayne	Biomechanist	High Performance Centre, University of Pretoria	helen.bayne@hpc.co.za
Dr Monja Human	Sports Psychologist	High Performance Centre, University of Pretoria	monja.human@hpc.co.za
Mrs Jacqui McCord	Physiotherapist	Complete Physio, Brooklyn, Pretoria	Jacq1@mweb.co.za

2. **Course codes and regulations:**

MSc Sports Medicine: 10253141

Admission

A candidate for the MSc Sports Medicine degree must be in possession of either a MBChB degree or other qualification acknowledged by the University of Pretoria as equal to that and have held such qualification for at least one year.

Self-motivation, previous or recent participation in sports or involvement in an administrative or managerial level, as well as the motive for the additional qualification, will be a strong recommendation for admission to the course.

Syllabus

DTE 880

Sports Nutrition 880 (examination: end of first semester, first year of study)

FSG 880

Sports Physiology 880 (examination: end of first semester, first year of study)

SAN 880

Sports Anatomy (examination: end of first semester, first year of study)

TNM 800

Research Methodology

SGN 802

Sports Medicine 802 (examination: end of second semester, first year of study)

SGN 800

Sports Medicine 800 (examination, oral and practical: end of second year or final year of study)

SGN 896

Research project and mini-dissertation

Examinations

- A sub-minimum of 40% is needed in the written examinations. To pass a subject, 50% is required.
- Should a candidate fail one of the basic subjects, i.e. FSG 880, SAN 880, DTE 880 or SGN 802, the candidate may be allowed to rewrite the examination at the end of the first semester of the following year.
- The SGN 800 examination (two papers of 2 hours each, an oral, two case studies and an OSCE) may only be done after completion of the basic subjects.
- If the candidate fails the theoretical **or** the practical of the final examination, both sections need to be repeated.

Requirements for awarding the MSc degree

For the MSc Sports Medicine degree to be awarded, a candidate must accomplish **all** the requirements as set out in the syllabus. This also includes a) completion of seminars and practical obligations, b) publishing of the research project results in an accredited journal and/or review of mini dissertation, and c) presentation at an international congress or Faculty Day. Should a candidate, **for example**, have completed the examination part of the degree, but have not published the results of his/her research project and presented it at an international congress, granting of the degree will be deferred.

Degree with distinction

The MSc (Sports Medicine) will be conferred with distinction on students who a) obtain a mark of at least 75% in the mini-dissertation and/or have published the results of the research project in an accredited journal, and b) obtain a mark of at least 75% for SGN 800 Sports medicine.

3. Admission of students

Students are subject to a selection system based on academic qualifications and involvement with sport.

4. Duration of Course and Course Dates

The course extends over two years and is presented on a part-time basis. During the following weeks of the course you are expected to be available from **08:00 to 17:00** for lectures, practicals, discussions, etc.

2018

February	Monday 5 to Friday 9
April	Monday 16 to Friday 20
August	Monday 13 to Friday 17

2019

May	Monday 06 to Friday 10
August	Monday 12 to Friday 16
September	Monday 16 to Friday 20

Should you experience any problems with the above-mentioned dates, it must be sorted out in advance with the head of the course:

Prof DC Janse van Rensburg
 UP Sports Center, Room 1-92
 Tel: 012-420 6057
 E-mail: christa.jansevanrensburg@up.ac.za

or the course secretary:

Mrs Brenda Weder UP Sports Centre, Room 1-90 Tel: 012 420 6053 E-mail: brenda.weder@up.ac.za	Mrs Madeleen Scheepers UP Sports Centre, Room 1-92 Tel. 012 420 6057 E-mail: Madeleen.scheepers@up.ac.za
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Absence without pardon may result in refusal of exam admittance.

5. Evaluation

Evaluation is conducted as follows:-

2018

SAN 880 Sports Anatomy	Written (3h) Oral (30 min)
FSG 880 Sports Physiology	Written (2h)
DTE 880 Sports Nutrition	Written (1h)
SGN 802 Sports Medicine	Written (2h)
TNM 800 (progress course)	

2019

SGN 800 Sports Medicine	Written 1 st paper (2h) Written 2 nd paper (2h) Oral (15 min) Practical 2 short cases OSCE
SGN 896 Research Project and Dissertation	The research project results should be published in an accredited journal and/or submitted in dissertation format for review – to be confirmed with your supervisor

If you should **fail the exam, or are absent due to illness**, you will have the opportunity to repeat the subject during the following examination period. The following dates are **potential dates**, should you be unable to keep up with the rate of the course for some or other reason.

EXAMINATION DATES 2018

SAN 880 Sports Anatomy	Written (3h) Oral (30 min)	Monday 4 June 2018 Wednesday 6 June 2018
FSG 880 Sports Physiology	Written (2h)	Tuesday 5 June 2018
DTE 880 Sports Nutrition	Written (1h)	Tuesday 6 June 2018
SGN 802 Sports Medicine	Written paper (2h)	Monday 29 October 2017

EXAMINATION DATES 2019

SGN 800 Sports Medicine	Written 1 st paper (2h)	Monday 14 October 2019
	Written 2 nd paper (2h)	Tuesday 15 October 2019
	Practical examination: Oral (15 min), Two practical cases and an OSCE	Wednesday 16 October 2019

6. Seminars**Introduction**

Each student is expected to present two seminars during the course of the study. The **first** seminar must be presented during the August study week of the first year and the **second** seminar during the August study week of the second year. An electronic copy of the seminars in **Word format** must be handed in 3 weeks before the start of the relevant course weeks.

Please note that seminars must be sent by **e-mail** to:

brenda.weder@up.ac.za

The seminars have to be presented to the class in PowerPoint format.

All students attend the seminars and are eventually examined on their own, as well as the seminars of their fellow students. It is regarded as part of the syllabus and even if a topic from the seminar list (p. 12) is not presented, it remains part of the syllabus and you will be examined on it.

The PowerPoint presentation must not exceed 10 minutes with 5 minutes discussion time.

Writing the seminar

The purpose of the seminars is to enable the student to master the art of searching for and assessing applicable literature. Furthermore, the seminars are designed in such a way that the student will gain a deeper understanding of the relationship of sports medicine to the various topics. It is therefore essential when writing the seminars that issues of sports medicine are continually highlighted.

The assessment of literature is an essential component of any scientific and research process; thus it is essential that the student demonstrate a critical ability to critique the literature when writing the seminar. It is not sufficient to merely reference textbooks. Students must aim at having a minimum of 20 suitable, cited articles per seminar. Referencing format must be carried out according to the Vancouver guidelines. Inaccurate or absent referencing will be severely penalised. Plagiarism of any form is very unacceptable.

Please take care about grammar, spelling and punctuation. If diagrams are used, please ensure that they are suitably referenced, that the figure legend is below the diagram and that the labels are in the same language as the text. Table legends must appear before the table.

Seminar format

- 1 Seminars must be typed according to the following format:
 - A4 format, with 2.5cm margins (all round)
 - Single paragraph spacing
 - Left and right justified
 - 12 pitch Times New Roman
 - Page numbering center bottom
- 2 Seminars must include the following
 - Cover page with title, student name and student number
 - A complete table of contents
 - A suitable introduction
 - Main body of discussion
 - A suitable conclusion
 - A full list of references in Vancouver style (20 minimum)

Seminar assessment criteria

1	Content		
	• Introduction	10	
	• Appropriate literature	10	
	• Assessment of literature	10	
	• Accuracy of information	10	
	• Insight into topic	10	
	• Integration of sports issues	10	
	• Conclusion	10	(70)

2	Technical aspects		
	• Contents and numbering system	5	
	• Referencing	10	
	• Language	5	
	• Style	5	
	• Formatting	5	(30)

The seminars must be submitted, presented and at least be passed as prerequisite to be allowed to sit for the examination.

7. **Research Project and Dissertation: SGN 896**

Each student has to complete and publish a suitable research project. A 'research project' falls into the same category of difficulty as a mini-dissertation. Although the MSc Sports medicine degree concentrates more on career-based outcomes than research, a demonstrated ability to conduct basic research is still required.

Please note that you need internet access and a working e-mail address to complete your research project

The research project must be completed in the following phases:

First Phase

- Choose an area of interest. Submit your own research topic for approval:

Dr. Rina Grant
E-mail: rina.grant@up.ac.za

- A literature search on the topic may be requested from:

Mr Mike Volschenk at the medical library
Tel: 012-356 3185
mike.volschenk@up.ac.za

- Write a literature review on the articles published to motivate the necessity of the study. Use at least 10 recently published articles
- This review will form part the background section of the project protocol and submitted to the MMed Committee and the Ethical Committee of the University of Pretoria. Use the following workbook for instruction on how to write a research protocol: *Writing your first clinical research protocol*, by C. Aldous, T. Esterhuizen and P. Rheeder. Available at bookshops in Hatfield
- Ethics Committee Web page:
<http://www.up.ac.za/healthethics>
- MMed Committee web page:
<http://www.up.ac.za/en/school-of-medicine/article/1907210/mmed-protocol-committee>

Second Phase:

TNM 800 Research Methodology (16-20 April 2018): submission of research protocol

- A draft protocol must be submitted on the first day of the study week
- A Power Point presentation of the protocol will be evaluated.
- An electronic version of the completed and signed research protocol and all attachments must be sent to your study leader to hand in for approval at the MMed and Ethical Committees, University of Pretoria.

The purpose of the protocol is to ensure that the student will undertake a research project in a prepared and suitable manner. As in the case of the seminars, the protocol involves the detailed assessment of the applicable literature. The protocol must demonstrate the feasibility of the study by presenting appropriate and achievable aims and methodology.

- 1 Protocols must be typed according to the following format:
 - A4 format, with 2.5cm margins (all round)
 - Single paragraph spacing
 - Left and right justified
 - 12 pitch Times New Roman
 - Pages numbering center bottom

- 2 Protocols must include the following, in the order indicated:
 - **Cover page** with title, full student name, full student number, course registered for, institution and date of submission
 - A complete **table of contents**
 - A suitable **introduction** which includes a justification for undertaking the study
 - A detailed **literature survey**
 - A clearly stated **aim**
 - Two to three clearly stated **research questions**
 - Detailed **materials and methods**; this section along with the literature survey will form the bulk of the protocol. This section must include details of the study design, study sample, ethical aspects (if any) specific materials and methods for data collection, methods for data analysis, logistical management etc.
 - A detailed **budget** must also be included
 - A **time schedule** for the different research components
 - A complete list of **references** in Vancouver style (20 minimum)

Third Phase:

The final accepted dissertation must be **published** in an accredited, peer-reviewed journal and/or submitted in a dissertation format. **It will also be expected of the student to present the final results:**

- as a presentation (podium or poster) at the Faculty Day of Health Sciences, University of Pretoria
- AND an International Congress (for example the Biennial SASMA Conference) – to be confirmed with your supervisor

Preparation of the article for publication:

- Identify a journal to which you would wish to submit the article
- Acquire the 'Instructions to Authors' for that journal
- Write the article in the format required by the journal. Remember: You will be using information from your protocol to assist with the writing of the introduction, materials and methods. Ensure that your results are clear and discernable - use tables and figures where necessary. In terms of the discussion, the essential element in writing such an article is to demonstrate your ability to critically analyze the results and to present possible reasons and discussion for the phenomena noted in the results. Concluding statements usually make a recommendation for the future. Referencing must be according to the 'Instructions to Authors'.

8. Research methodology and statistics (TNM 800)

This lecture week (16-20 April 2018) is devoted to research and statistics to enable the students to initiate their projects and complete it with success. If you have already completed TNM 800, and successfully completed your protocol, it will be acknowledged.

9. Practical responsibilities**9.1 Patient records**

Students are required to keep record of sports- and exercise related patients seen in his/her own practice. It is required to record at least forty of these patients per year on a patient record form (Appendix 1).

A report of eight (8) patient studies must be handed in per year. The patient study templates may be used (Appendices 2 and 3). These patients may include any sports-, exercise- or lifestyle consultations, e.g. management of injuries or medical conditions in athletes, chronic disease risk reversal, or diseases of lifestyle. Management must be according to sports medicine principles. **Penalties are given for late reception of assignments/patient studies.** Patient studies are evaluated as part of continuous evaluation. Patient studies must be handed in annually by 30 September.

9.2 Elective work

Elective work in sports- and exercise medicine will be done for a minimum of one week in two years. This can be medical care at a sports practice, with a team, or at a sports medicine facility where clinical sports medicine is practiced. The elective period must be either

- under supervision of an approved medical coordinator **or**
- pre-planned and approved by the program director

A written report of the elective period must be handed in by 30 September 2019. (Prescribed format in Appendix 4).

9.3 Academic activities

The aim of this component is to stimulate continuous/lifelong learning. At least one scientific article presentation per residency period is required. A list of articles read and other academic activities in sports and exercise medicine must be kept. Summaries such as SportsMed Update may be used and are recommended. The number and quality of academic activities recorded may be assessed in the final calculation of a mark. Academic activities are recorded on a record form in Appendix 5 and must be handed in by 30 September 2019.

9.4 Reports on sports events

Five practicals, either on attending and/or participating in any of the following events, are compulsory. These form part of the course requirements and are closely monitored.

- One ultra-marathon or triathlon
- One standard marathon
- Two acknowledged contact sports matches or competitions
- One university or school sports gathering
- Or other equivalent sports medicine service as approved by the head of the course.

It is expected from a student to hand in a report, commenting on the quality of the medical service, after each practical. The report must include:

- A description of the sporting event
- The number of athletes/participants
- Weather conditions
- Pre-event planning for medical coverage (participants and spectators)
- Medical coverage of the event e.g. cases seen, treatment given
- Critical review of the medical coverage and recommendations for improvement, if any.

Practical reports must be handed by 30 September 2019.

10. **Seminar themes to be presented by the students**

AUGUST 2018

1. Medical conditions attributed to high altitude sickness
2. Overuse injuries of the foot
3. Hazardous marine life as related to sub-aquatic sports
4. Osteochondritis of the ankle and knee
5. Extrication in motor sport
6. Compartment syndrome
7. Legal responsibilities of the medical practitioners at a boxing event
8. Sports therapy for the mentally disabled
9. Spondylolysis and spondylolisthesis
10. An analysis of banned substances in competitive level sport
11. Fluid replacement therapy in marathon runners
12. Adductor muscle injuries
13. Concussion
14. Rehabilitation of thigh injuries
15. Supportive breast garments for sports women
16. Overuse injuries of the elbow
17. Sports related rehabilitation following myocardial infarction
18. Aerobic and anaerobic muscle fibers
19. Prevention of sports injuries in children and adolescents
20. HIV exposure management and risk minimisation in sport
21. Nerve entrapment syndromes of the upper limb
22. Abdominal and pelvic herniae
23. Approach to soft tissue injuries
24. Golden rules in the prevention of soft tissue injuries
25. Role of Creatine in sports performance
26. Injuries incurred during the use of the 'home gymnasium'
27. Head injuries in boxing
28. Sports participation during pregnancy
29. Management of bullet wounds incurred in sport-related injuries
30. Barotrauma
31. Corticosteroid use in management of sport-related injuries
32. Sudden death in the sports person
33. Knee injury rehabilitation

AUGUST 2019

1. Wrist rehabilitation
2. Hypothermia and cold injuries
3. Eccentric versus concentric muscle training
4. Aquatic skin disorders
5. Surgical methods for cruciate ligament repair
6. The physiology of water aerobics
7. Prevention of lower back pain in the sports person
8. Bio-ethical issues in competitive level sport
9. Avulsion fractures of the pelvis
10. Typical injuries in non-competitive golf
11. Medial collateral ligament injuries of the knee
12. Common gymnastic injuries
13. Peroneal tendon subluxation and tendinitis
14. Medical rescue in mountain climbing accidents
15. Plantar fasciitis and other causes of heel pain
16. Genital protective devices for the male sportsman
17. An analysis of the advantages and disadvantages of 'high energy' drinks
18. Sports specific flexibility training
19. Post-flu collapse in the non-competitive athlete
20. The relationship of shoe structure to running injuries
21. Gastro-intestinal complaints in sports people
22. Arthritis and exercise
23. Safe sports participation for children
24. Approach to the obese patient wanting to exercise
25. Theories surrounding muscle cramps, and the management of muscle cramps
26. The bio-mechanics of the shoulder joint
27. Free weights versus 'machines': open versus closed chain exercise
28. Eye injuries in ball sports
29. The sun and the skin
30. Tobacco and exercise
31. Hand conditioning and injuries in contact martial arts
32. Carpal tunnel syndrome
33. Drowning and near-drowning in marine sports

11. **Name and address list of course participants**

NO	NAME	POSTAL ADDRESS	CELL NUMBER	E-MAIL
1.	Benade, Sanmari	321 27 th Avenue, Villieria, Pretoria, 0186	079 180 8553	sanmarib@gmail.com
2.	Erasmus, Johannes Antoni	Private Bag X9474, Polokwane, 0700	082 875 6726	jaeantoine@gmail.com
3.	Kirstein, Marijke	Farm Berlin 209, Hoedspruit, 1380	082 497 5720	mkirstein@xsinet.co.za
4.	Louwrens, Jan Gerhardus	1729 Lady Lily Street, Rietvalleirand, 0174	072 130 4915	drjgerhardl@gmail.com
5.	Nkosi, Gugulethu Muriel	PO Box 14120, West Acres, Nelspruit, 1200	071 986 4752	mgnkosi@yahoo.co.uk
6.	Pillay, Sanushka	124 Cara Blu, 4 Vlok Road, Bryanston, 2191	082 586 6661	Sanush21@gmail.com
7.	Powell, Michelle Justine	257 Voortrekker Street, Greytown, 3250	073 131 1001	michelle007.powell@gmail.com
8.	Van Staden, Lize-Mari	14 Tsomo Crescent, Elawini Estate, Riverside Park Ext 5, Nelspruit 1200	082 774 8980	lizemari.vanstaden@gmail.com

SECTION B

CURRICULUM

ANATOMIC AND HISTOPATHOLOGY

COURSE CODE: Part of SGN 802 and 800 (Sports Medicine)

AIM

After completion of the syllabus themes, the student must be able to communicate with authority on the subjects and be able to apply this knowledge in patient care as indicated.

EMBEDDED KNOWLEDGE

A comprehensive knowledge of the histology of muscle, ligaments, bone and cartilage.

OUTCOMES**a) Critical outcomes**

The student must be able to:

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made
- Work effectively with others as a member of a team, group, organisation, community
- Organise and manage oneself and one's activities responsibly and effectively
- Collect, analyse, organise and critically evaluate information
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion
- Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

b) Specific outcomes

The student must be able to:

- Diagnose and handle clinical problems (whether by self or by the necessary referral)
- Speak with authority on biokinetics, sport and leisure sciences.
- Integrate knowledge and apply it in a multi-disciplinary environment.

The level of competence required of a student varies from 1 to 4 as explained in the following table:

Theory/Knowledge	Clinical Pictures	Skills list
T1 Nice to know	C1 Recognise or place	S1 Only theory
T2 Of some relevance	C2 Tentative diagnosis	S2 Theory and seen or have demonstrated
T3 Advisable to know	C3 Diagnose and refer	S3 Apply/perform (under supervision)
T4 Essential knowledge for future clinical practice/to achieve the outcome	C4 Diagnose and treat	S4 Routine performance

STUDY UNITS**STUDY UNIT 1: REPAIR OF TISSUE**Level Sub-outcomes

- T4 Have the applied theoretical knowledge of the repair of muscle tissue, ligaments, bone and cartilage
- C4 Apply these principles to the care of patients with lesions of these tissues.
 Know the mechanisms that influence repair and factors that influence the repair process.

STUDY UNIT 2: CAUSES OF SUDDEN DEATH IN SPORTLevel Sub-outcomes

- T4 Know the applicable causes including the clinical diagnosis of potential causes
 Diagnose potential causes and act prophylactically.

ASSESSMENT CRITERIA

All above-mentioned study units will be evaluated by means of

1. Self-assessment:
 - Self-study of the subjects, not only from prescribed textbooks, but also from most recent articles.
 - Seminars
2. Co-students:

Discussions among each other during contact time in February/May/
 August/September.
3. Examinations:

Theory
 Orals
 Case studies
 OSCE

REFERENCES

Muir's Textbook of Pathology
 RNM MacSween & R Whaley
 Edward Arnold

ANATOMY

COURSE CODE: SAN 880 (Sports Anatomy)

CAPABILITY STATEMENT

After completing the 5 study units the student must be able to reproduce a thorough knowledge of anatomy, as it is related to sport practitioners, on a higher cognitive level and, where applicable to integrate it clinically.

EMBEDDED KNOWLEDGE

Qualified medical doctor.

OUTCOMES

a) Critical outcomes

The student must be able to:

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made
- Organise and manage oneself and one's activities responsibly and effectively
- Collect, analyse, organise and critically evaluate information
- Use science and technology effectively and critically showing responsibility towards the environment and health of others.

b) Specific outcomes

The student must be able to:

- Integrate anatomical knowledge and apply it in a clinical environment.
- Reproduce a thorough theoretical and practical knowledge of the anatomy

The level of competence required of a student varies from 1 to 4 as explained in the following table:

Theory/Knowledge	Clinical Pictures	Skills list
T1 Nice to know	C1 Recognise or place	S1 Only theory
T2 Of some relevance	C2 Tentative diagnosis	S2 Theory and seen or have demonstrated
T3 Advisable to know	C3 Diagnose and refer	S3 Apply/perform (under supervision)
T4 Essential knowledge for future clinical practice/to achieve the outcome	C4 Diagnose and treat	S4 Routine performance

STUDY UNITS**STUDY UNIT 1: VASCULAR SYSTEM OF ALL REGIONS**Level Sub-outcomes

Theoretical and practical (“spot”) knowledge of surface anatomy and regional anatomy of lymphatic system and blood vessels in the following regions:

- T4 - Blood vessels at basal surface of brain
- T3 - Head, neck and meninges
- T4 - Upper limb
- T3 - Thorax (heart included)
- T2 - Abdomen
- T2 - Pelvis
- T2 - Gluteus region
- T2 - Perineum, including contents of pudendal canal
- T4 - Lower limb
- T2 - Spinal cord and vertebra spinal venous system

Clinical pictures: To reproduce the knowledge of the theoretical background of clinical pictures in practical problem cases as applying of knowledge (integrated clinical anatomy). Some examples are listed here.

- C3 - Impingement of blood vessels
- S4 - Venous puncture, for example cubital fossa
- S4 - Pressure points, for example facial artery at angle of mandible
- S4 - Arterial pulse, for example foot pulses
- C3 - Pressure on adjacent nerves, for example thrombosis of cavernous sinus
- C3 - Aneurysm, for example “Berry” aneurysms at basal surface of brain
- S4 - Anastomosis involved after occlusion, for example supra condylar fracture
- C3 - Venous return mechanism and impairment, for example varicose veins
- T2 - Portocaval anastomoses, for example in oesophageal varices
- S4 - Confirmation of normal arterial pattern, for example Allen’s test for palm of hand
- T4 - Emergency Procedures

STUDY UNIT 2: TRUNKLevel Sub-outcomes

Theoretical and practical (“spot”) knowledge of the surface anatomy, regional anatomy of the skeleton, muscles and organs in the following regions:

Back, suboccipital triangle and vertebral column

- T4 - Osteology of vertebrae
- T4 - Ligaments and joints
- T4 - Structure of suboccipital triangle
- T4 - Muscles that act on vertebral column
- T3 - Content and structure of the vertebral canal and inter-vertebral foramen

Thorax

- T4 - Surface anatomy
- T4 - Bony thorax
- T3 - Sternocostal, costochondral and costovertebral joints
- T4 - Intercostal muscles
- T3 - Mediastinum and content
- T4 - Lungs
- T4 - Diaphragm
- T3 - Posterior thoracic wall

Abdomen

- T4 - Surface anatomy
- T4 - Anterior abdominal wall
- T3 - Posterior abdominal wall
- T3 - Abdominal organs and structures (including the structure thereof)

Pelvis, involvement with trunk

- T3 - Osteology
 - T3 - Ligaments and joints
 - T3 - Muscles of the walls
 - T3 - Intra-pelvis organs and structures
 - Perineum
 - T3 - Osteology
 - T4 - Ischio-anal fossa and pudendal canal
 - T4 - Male urethra and penis
 - T4 - Musculoskeletal mechanism of respiration
- Clinical pictures: To reproduce the knowledge of the theoretical background of clinical pictures in practical problem cases as usage/applying of knowledge (integrated clinical anatomy). Some examples are listed here:
- C3 - Atypical bones, e.g. accessory cervical ribs
 - C3 - Herniation at the wall of the trunk, for example congenital and acquired
 - C3 - Influence of gravity, for example lowering of kidney of marathon athletes
 - C4 - Disarticulation of vertebrae, e.g. hit bottom of swimming pool
 - C4 - Herniation of nucleus pulposus e.g. with sciatica pain
 - C4 - Whiplash injury of neck, e.g. after sport trauma

STUDY UNIT 3: MUSCULOSKELETAL SYSTEM

Level Sub-outcomes

Theoretical and practical ("spot") knowledge of the surface anatomy, regional anatomy and image anatomy of the musculoskeletal system in the following regions:

- Posterior triangle
- T2 - Cervical fascia
- T2 - Structure and contents (other than blood vessels and nerves)
- T3 - Cervical plexus
- Anterior triangle
- T4 - Structure and contents (other than blood vessels and nerves) of anterior triangle
- Root of the neck
- Skull
- T4 - Osteology and bony landmarks (mandible)
- T4 - Ligaments and joints (temporomandibular joint)
- T2 - Muscles of facial expression
- Upper limb
- T4 - Surface anatomy
- T4 - Pectoral region
- T4 - Axilla
- T3 - Superficial structures of upper limb
- T4 - Deltoid region
- T4 - Brachium
- T4 - Cubital fossa
- T4 - Ante brachium and hand
- T4 - Osteology
- T4 - Ligaments and joints
- T2 - Embryology of the limbs
- Pelvis, involvement with lower limb
- T3 - Osteology
- T3 - Ligaments and joints
- T3 - Muscles of the walls
- Gluteal region
- T4 - Muscles
- T4 - Greater and lesser ischiatic foramen and structures related to them
- Lower limb
- T4 - Osteology
- T2 - Embryology of the limbs
- T4 - Ligaments and joints

- T4 - Thigh
- T4 - Leg or crus
- T4 - Foot

Clinical pictures: To reproduce the knowledge of the theoretical background of clinical pictures in practical problem cases as usage/applying of knowledge (intergated clinical anatomy). Some examples are listed here:

- T4 Sesamoid bones, e.g. fabella or lateral head of gastrocnemius
- T3 "Horseman's bone", e.g. in adductor longus muscle
- C4 Tendonitis, e.g. tendon of supraspinatus
- C4 Bursitis, e.g. prepatellar bursa
- C4 Avulsion, e.g. tendons of extrinsic finger muscles ("Mallet" finger)
- C4 Fasciitis, e.g. plantar fasciitis
- C4 "Spur" formation, e.g. Achilles tendon
- T4 Supporting of structures against gravity, e.g. arches of the foot
- C3 Fulcrum/lever action, e.g. neck of femur, alternative after fraction
- T4 Prevent "bowstringing" of tendons, e.g. tendon of quadriceps femoris
- T4 Influence of position of tendons, e.g. of dorsal expansion at fingers
- T4 Rigidity of fascial muscle compartments, e.g. anterior compartment syndrome of leg
- C4 Abnormal structure of static stabilisers, e.g. pronation of foot
- C4 Tension of ligaments across joints, e.g. collateral ligaments of fingers
- C4 Surface anatomy of condyles, e.g. ITBS

STUDY UNIT 5: NERVOUS SYSTEM OF ALL REGIONS

Level Sub-outcomes

Theoretical and practical ("Spot") knowledge of surface anatomy and regional anatomy of nerves:

- T4 Exit of spinal nerves from spinal cord and from the vertebral column
- T4 Dermatomes of all regions
- Autonomic system
 - T3 - Parasympathetic system
 - T3 - Sympathetic system
- Head and neck
 - T3 - Brain (excluding internal structure)
 - T3 - Superficial nerves, e.g. facial nerve for nerve block in the face
 - T3 - Accessory nerve CN X1, e.g. "careful and carefree area"
 - Posterior triangle
 - T3 - Cervical plexus
 - T4 - Roots of brachial plexus
 - Anterior triangle
- Upper limb
 - T4 - Brachial plexus and branches thereof
 - T4 - Dermatomes
- Trunk
 - T2 - Cutaneous nerves of back and suboccipital region
 - T4 - Intercostal nerves with a thoracic and thoracoabdominal course
 - T3 - Lumbar plexus
 - T3 - Sacral plexus
- Lower limb
 - T3 - Lumbar plexus and branches
 - T3 - Sacral plexus and branches
 - T4 - Dermatomes

Clinical pictures: To reproduce the knowledge of the theoretical background of clinical pictures in practical problem cases as applying of knowledge (integrated clinical anatomy). Some examples are listed here:

Impingement of nerves

- C3 - In osteofascial canals, e.g. in Dupryennes canal (ulnar nerve)
- C3 - Herniation of nucleus pulposus

- C3 - Between heads of muscles, e.g. pronator teres
- C3 - Inside muscle belly, e.g. at piriformis
- C3 - Course over bony points, e.g. T1 stretched over accessory cervical rib
- C3 - Between muscles e.g. between scaleni (thoracic exit syndrome)
- C4 - External source, e.g. dorsum of foot by shoe
- C3 - Space occupying tumour, e.g. of ovary on obturator nerve
- C3 - Injuries to upper and lower roots of brachial plexus (Erb and Klumpke)
- C3 - External haematome – pressure on temporal lobe
- C3 - Increased intracranial pressure – pressure on uncus – smell hallucinations

Referred pains

- T4 - Dermatomes
- T4 - Somatic, e.g. posterior cutaneous femoral nerve – root values for pelvic

Structures

- T4 - Visceral, e.g. ischaemic heart pain to region of mandible
- T4 - Visceral and somatic, e.g. migrating pain of appendicitis

STUDY UNIT 5: HISTOLOGY

Level Sub-outcomes

T4 Theoretical and practical knowledge of:

Tissue

- General connective tissue
- Classification of connective tissue
- General structure of reticular connective tissue
- Fibroblasts, undifferentiated mesenchymal cells, macrophages and fat cells
- Plasma cells, mast cells, chromotocytes and white blood cells
- Amorphous ground substance
- Collagen fibers
- Elastic fibers
- Reticular fibers
- Basal membrane
- Soft connective tissue
- Dense connective tissue
- Cartilage
- Classification of cartilage
- Hyaline cartilage
- Elastic cartilage
- Fibrous cartilage
- Mechanisms of growth of cartilage
- Bone tissue
 - Classification of bone
 - Characteristics of bone
 - Bone cells
 - Bone matrix
 - Structure of compact bone
 - Structure of spongy bone
 - Periosteum
 - Endosteum
 - Intramembranous bone development
 - Endochondral bone development
- Muscle tissue
 - Introduction
 - Smooth muscle
 - Skeletal muscle
 - Heart muscle
- Nerve tissue
 - The neuron

- Neurology
- Peripheral nerves
- Peripheral ends of nerve fibers
- Organs
 - The epidermis
 - The dermis and hypodermis
 - The accessory structures

ASSESSMENT CRITERIA

Evaluation of all above-mentioned study units are by means of:

1. Self-assessment:

After successful completion of the following, the student can assess his own progress:

- Demonstrate theoretical knowledge by paragraph type questions or make annotated diagrammatic sketches of:
 - descriptive anatomy
 - surface anatomy
 - applied anatomy
- Demonstrate practical knowledge by
 - recognising structures on wet samples
 - demonstrate surface anatomy
- Imaging anatomy, e.g. Roentgen photos
- Oral. Sustain theoretic and practical knowledge with authority

2. Co-students:

Discussions among each other during contact time in February

3. Examinations:

A tutorial at the end of each study unit in the practicals. Students are expected to come prepared to the practicals during contact time in February. See organisational component.

Theory – three hour question paper

Oral – 20 minutes

ASSESSMENT PORTFOLIO

1. Marks are allocated for the tutorial tests. At the end of the course the four tests are processed to a percentage, which serves as guideline to the candidate's preparation for the examiners during the examination.
2. Candidates who do not attend the tutorials, will **not** be allowed to write the examinations.
3. If you complete all the tutorials and obtain an average of more than 50% for the Anatomy written paper, you will be exempted from the Anatomy examination's oral. Students who obtain between 40 and 49% will be invited to attend the oral examination.
4. As far as the evaluation is concerned, see item 2.4, p 1 of the organisational component.

In this subject no other proofs of abilities are requested than the listed tests and examinations.

Date	Venue	Time	Subject
Tue 6 Feb	R4-24 BMS building	08:00-09:20	Study unit 1: Vascular system Station based, self-effort *Need Atlas, textbook and gloves
		09:30-10:00	Spot test with theory follow-up question
Wed 7 Feb 2018	R4-24 BMS building	08:00-09:20	Study unit 2: Trunk Station based, self-effort *Need Atlas, textbook and gloves
		09:30-10:00	Spot test with theory follow-up question
Thu 8 Feb 2018	R4-24 BMS building	08:00-09:20	Study unit 3: Muscular system Station based, self-effort *Need Atlas, textbook and gloves
		09:30-10:00	Spot test with theory follow-up question
Fri 9 Feb 2018	R4-25 BMS building	08:00-09:20	Study unit 4: Nervous system Station based, self-effort *Need Atlas, textbook and gloves
		09:30-10:00	Spot test with theory follow-up question
	R6-30 BMS building	10:30-13:00	Study unit 5: Histology Evaluation is limited to the exam

PRACTICAL ARRANGEMENTS

Presentations will be in the form of problem orientated, student centered workstations, as well as electronic assignments for preparation of the study material.

REFERENCES

- Clinically Oriented Anatomy
Moore KL, Dalley AF Agur AMR
Lippincott, Williams and Wilkens
- McMinn and Abrahams' Clinical Atlas of Human Anatomy
Abrahams et al
Elsevier Health Sciences
Williams & Wilkens
- Menslike Histologie
Coetzee et al
JL van Schaik
- Weaters Functional Histology
Burkitt et al
Maskew Miller Longman

BIOKINETICS AND SPORT SCIENCE

COURSE CODE: Part of SGN802 and SGN800 (Sports Medicine)

AIM

After completing the 3 study units, the student must be able to communicate with authority on the subjects, as well as to handle specific conditions as indicated.

EMBEDDED KNOWLEDGE

Qualified medical doctor. Actively involved in sport, whether as participant and/or team doctor and/or administrator.

OUTCOMES

a) Critical outcomes

The student must be able to:

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made
- Work effectively with others as a member of a team, group, organisation, community
- Organise and manage oneself and one's activities responsibly and effectively
- Collect, analyse, organise and critically evaluate information
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion
- Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

b) Specific outcomes

The student must be able to:

- Diagnose and handle clinical problems (whether by self or by the necessary referral)
- Speak with authority on biokinetics, sport and leisure sciences.
- Integrate knowledge and apply it in a multi-disciplinary environment.

The level of competence required of a student varies from 1 to 4 as explained in the following table:

Theory/Knowledge	Clinical Pictures	Skills list
T1 Nice to know	C1 Recognise or place	S1 Only theory
T2 Of some relevance	C2 Tentative diagnosis	S2 Theory and seen or have demonstrated
T3 Advisable to know	C3 Diagnose and refer	S3 Apply/perform (under supervision)
T4 Essential knowledge for future clinical practice/to achieve the outcome	C4 Diagnose and treat	S4 Routine performance

STUDY UNITS**STUDY UNIT 1: BIOMECHANICS OF BODY MOVEMENT**Level Sub-outcomes

- T3 Basic principle of the ideal running technique
- Anatomy and function
 - Foot movement
 - Running
 - Angle of the foot
 - Dynamics of running
 - Dynamics of throwing
 - Dynamics of jumping
- T4 Causes of injuries
- Anatomical postural factors
 - Structural shortcomings
 - Exercise programme
 - Exercise surfaces
 - Foot function
 - Muscle stiffness
 - Muscle weakness
 - Shoes
- T4 Prevention of overuse injuries
- Flexibility
 - Strength and endurance
 - Shoes
 - Exercise surfaces
 - Training programme

STUDY UNIT 2: EXERCISE REHABILITATIONLevel Sub-outcomes

- T4 Physical inactivity and immobilisation
- Influence of general inactivity
 - Influence of immobilisation
- T4 Therapeutic exercise versus conditioning exercise
- T4 Primary elements of exercise rehabilitation programme
- General body conditioning
 - Muscle strength and endurance
 - Flexibility exercise
 - Proprioception
 - Body mechanics
 - Cardiovascular conditioning
 - Functional restoration
- T4 Development of an exercise rehabilitation plan
- Injury situation
 - The management team
 - Exercise phases
 - Criteria for complete recovery
- T4 Additional approaches to exercise rehabilitation
- Hydrotherapy
 - Proprioceptive neuromuscular facilitation
 - Joint mobilisation

STUDY UNIT 3: SPECIFIC SPORTS AND ORTHOPAEDIC INJURIESLevel Sub-outcomes

T4	Foot	- Exercise rehabilitation of the foot
T4	Ankle and lower leg	- Exercise rehabilitation of the ankle and lower leg
T4	Knee and related structures	- Knee joint rehabilitation - Rehabilitation phases - Primary components of a knee rehabilitation programme - Rehabilitation of specific injuries
T4	Thigh, hip, groin and pelvis	- Thigh and hip rehabilitation
T4	Vertebral column	- Neck rehabilitation - Rehabilitation of lower back pain
T4	Shoulder complex and arm	- Shoulder joint rehabilitation - Rehabilitation phases - Primary components of a shoulder rehabilitation programme
T4	Elbow, forearm, joint and hand	- Rehabilitation of the forearm, joint and hand

ASSESSMENT CRITERIA

All above-mentioned study units will be evaluated by means of

1. Self-assessment:

Self-study of the subjects, not only from prescribed textbooks, but also from most recent articles.

Seminars

2. Co-students:

Discussions among each other during contact time in February/May/August/September.

3. Examinations:

Theory

Orals

Case studies

REFERENCES

Books (most recent publications)

1. Principles of Athletic training
DD Arnheim & WE Prentice
St Louis: Mosby Yearbook
2. Sports Injuries
L Peterson & P Renström
Juta Co.

CHEMICAL PATHOLOGY

COURSE CODE: Part of SGN 802 and 800 (Sports Medicine)

AIM

After completing the 1 study unit, the student must be able to communicate with authority on the subjects, as well as to handle specific conditions as indicated.

EMBEDDED KNOWLEDGE

Qualified medical doctor. Actively involved in sport, whether as participant and/or team doctor and/or administrator.

OUTCOMES

a) Critical outcomes

The student must be able to:

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made
- Work effectively with others as a member of a team, group, organisation, community
- Organise and manage oneself and one's activities responsibly and effectively
- Collect, analyse, organise and critically evaluate information
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion
- Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

b) Specific outcomes

The student must be able to:

- Diagnose and handle clinical problems (whether by self or by the necessary referral)
- Speak with authority on chemical pathology.
- Integrate knowledge and apply it in a multi-disciplinary environment.

The level of competence required of a student varies from 1 to 4 as explained in the following table:

Theory/Knowledge	Clinical Pictures	Skills list
T1 Nice to know	C1 Recognise or place	S1 Only theory
T2 Of some relevance	C2 Tentative diagnosis	S2 Theory and seen or have demonstrated
T3 Advisable to know	C3 Diagnose and refer	S3 Apply/perform (under supervision)
T4 Essential knowledge for future clinical practice/to achieve the outcome	C4 Diagnose and treat	S4 Routine performance

STUDY UNITS**STUDY UNIT 1 : WATERHOMEOSTASIS**Level Sub-outcomes

C4	Fluid replacement during exercise Effect of fluid intake on sports achievements Post-exercise rehydration Practical application and recommendations
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ASSESSMENT CRITERIA

All above-mentioned study units will be evaluated by means of

1. Self-assessment:
 - Self-study of the subjects, not only from prescribed textbooks, but also from most recent articles.
 - Seminars
2. Co-students:
Discussions among each other during contact time in February / May / August / September.
3. Examinations:
Theory
Orals
Case studies
OSCE

GYNAECOLOGY

COURSE CODE: Part of SGN 802 and 800 (Sports Medicine)

AIM

After completing the 8 study units, the student must be able to communicate with authority on the subjects, as well as to handle specific conditions as indicated.

EMBEDDED KNOWLEDGE

Qualified medical doctor. Actively involved in sport, whether as participant and/or team doctor and/or administrator.

OUTCOMES**a) Critical outcomes**

The student must be able to:

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made
- Work effectively with others as a member of a team, group, organisation, community
- Organise and manage oneself and one's activities responsibly and effectively
- Collect, analyse, organise and critically evaluate information
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion
- Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

b) Specific outcomes

The student must be able to:

- Diagnose and handle clinical problems (whether by self or by the necessary referral)
- Speak with authority on gynaecology.
- Integrate knowledge and apply it in a multi-disciplinary environment.

The level of competence required of a student varies from 1 to 4 as explained in the following table:

Theory/Knowledge	Clinical Pictures	Skills list
T1 Nice to know	C1 Recognise or place	S1 Only theory
T2 Of some relevance	C2 Tentative diagnosis	S2 Theory and seen or have demonstrated
T3 Advisable to know	C3 Diagnose and refer	S3 Apply/perform (under supervision)
T4 Essential knowledge for future clinical practice/to achieve the outcome	C4 Diagnose and treat	S4 Routine performance

STUDY UNITS**STUDY UNIT 1: SIMILARITIES AND DIFFERENCES BETWEEN GENDERS**

<u>Level</u>	<u>Sub-outcomes</u>
T4	Skeletal
T4	Body composition
T4	Physiologically
T4	Exercise and performance

STUDY UNIT 2: MENSTRUATION

<u>Level</u>	<u>Sub-outcomes</u>
T4	Dysmenorrhea
T4	PMS
T4	Manipulation of the menstrual cycle
T4	Menstrual irregularities associated with exercise

STUDY UNIT 3: CONTRACEPTION FOR THE ATHLETE

<u>Level</u>	<u>Sub-outcomes</u>
T4	Meaningful recommendations regarding contraception for the female athlete

STUDY UNIT 4: EXERCISE AND PREGNANCY

<u>Level</u>	<u>Sub-outcomes</u>
T4	Associated risks <ul style="list-style-type: none"> - Mother - Fetus
T4	Advantages
T4	Contra indications
T4	Guides for exercise programmes
T4	Post partum exercises

STUDY UNIT 5: MENOPAUSE

<u>Level</u>	<u>Sub-outcomes</u>
T4	Osteoporosis
T4	Coronary heart disease
T4	Guidelines for exercise

STUDY UNIT 6: BREASTS

<u>Level</u>	<u>Sub-outcomes</u>
T4	Trauma
T4	Nipple problems
T4	Supportive gear

STUDY UNIT 7: EATING DISORDERS

<u>Level</u>	<u>Sub-outcomes</u>
T4	Risk factors
T4	Complications

ASSESSMENT CRITERIA

All above-mentioned study units will be evaluated by means of

1. Self-assessment:
 - Self-study of the subjects, not only from prescribed textbooks, but also from most recent articles.
 - Seminars

2. Co-students:
Discussions among each other during contact time in February/May/
August/September.
3. Examinations:
Theory
Orals
Case studies

REFERENCES

1. Clinical Sports Medicine
Bruckner & Kahn
McGraw Hill
2. Most recent journal articles (Medline)

INTERNAL MEDICINE

COURSE CODE: Part of SGN802 and SGN800 (Sports Medicine)

AIM

After completing the 6 study units, the student must be able to communicate with authority on the subjects, as well as to handle specific conditions as indicated.

EMBEDDED KNOWLEDGE

Qualified medical doctor. Actively involved in sport, whether as participant and/or team doctor and/or administrator.

OUTCOMES**a) Critical outcomes**

The student must be able to

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made.
- Work effectively with others as a member of a team, group, organisation, and community.
- Organise and manage oneself and one's activities responsibly and effectively
- Collect, analyse, organise and critically evaluate information.
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion.
- Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

b) Specific outcomes

The student must be able to:

- Diagnose and handle clinical problems (whether by self or by the necessary referral)
- Speak with authority on arthritis related subjects
- Integrate knowledge and apply it in a multi-disciplinary environment

The level of competence required of a student varies from 1 to 4 as explained in the following table:

Theory/Knowledge	Clinical Pictures	Skills list
T1 Nice to know	C1 Recognise or place	S1 Only theory
T2 Of some relevance	C2 Tentative diagnosis	S2 Theory and seen or have demonstrated
T3 Advisable to know	C3 Diagnose and refer	S3 Apply/perform (under supervision)
T4 Essential knowledge for future clinical practice/to achieve the outcome	C4 Diagnose and treat	S4 Routine performance

STUDY UNITS**STUDY UNIT 1: ENVIRONMENTAL FACTORS**Level Sub-outcomes

T4 Heat

T4 Cold

STUDY UNIT 1: INFECTIVE CONDITIONSLevel Sub-outcomes

T4 Systemic infections

T3 Hepatitis B – effects on organ systems

T3 AIDS

T3 Chronic fatigue

C3 Treatment of infections

STUDY UNIT 3: NEUROLOGYLevel Sub-outcomes

S1 EMG

T4 Pain

T3 Headache

T3 Epilepsy

T3 Confusion

T3 Muscle and nerve diseases

STUDY UNIT 4: DERMATOLOGYLevel Sub-outcomes

T3 Skin infection

T3 Plantar warts

T3 Urticaria

STUDY UNIT 5: HAEMATOLOGYLevel Sub-outcomes

T3 Immune systems

T4 Anaemia

STUDY UNIT 6: GROWTHLevel Sub-outcomes

T4 Normal growth patterns

T4 Growth aberration

STUDY UNIT 7: INFLUENCE OF HORMONESLevel Sub-outcomes

T4 Hormonal reaction on exercise

T4 Growth hormone

T4 Stress

T4 Diabetes in the sports person

T4 Obesity and exercise

STUDY UNIT 8: GASTRO INTESTINAL TRACTLevel Sub-outcomes

T4 Emptying of gastric contents

T4 Gastro intestinal problems

- Nausea

- Vomiting during exercise

- Abdominal cramps

STUDY UNIT 9: ALLERGIES IN SPORTLevel

T4

STUDY UNIT 10: CARDIOVASCULAR

T4	Heart diseases
T4	Statistic data of clinical importance
T4	Epidemiology of cardiovascular diseases
	- HOCM
	- Dysplasia
T4	Congenital heart diseases
T4	Heart valve lesions
T4	Arteriosclerotic heart disease
T4	Systemic hypertension
T4	Cor Pulmonale
T4	Miocarditis
T4	Pericardial diseases
T4	Dysrhythms
T4	Heart conditioning
T4	Athlete's heart (Physiological remodelling)
T4	Pharmacology
T4	Examining techniques
S2	Stress electrocardiography
S4	Blood pressure monitoring
S3	ECG monitoring
S2	Echo cardiography

STUDY UNIT 11: PULMONOLOGYLevel Sub-outcomes

T4	Applied lung physiology
T4	Ventilation blood flow and gas exchange
T4	Gas transport
T4	Lung mechanics
T4	Control of breathing
T4	Growth, aging and adaptation of the lung
T4	Respiratory endurance
T4	Physiology of exercise
T4	Cardiopulmonary adaptations to exercise
T4	Cardiopulmonary exercise studies
T4	Pathophysiology and conditions that limit exercise
T4	Protocol of exercise studies and normal values
T4	Interpretation of exercise studies
T4	Case studies
T4	Sports medicine and the lung
T4	- Lung infection in athletes
T4	- Exercise induced broncho spasm
T4	- Lung problems in the aged
T4	- Drug use by athletes
T4	Illness associated with high altitudes and diving
S2	- Respiratory muscle weakness/muscle function tests
T4	- Pulmonary disability
T4	- Aspects of pulmonary rehabilitation
S3	- Lung function tests

STUDY UNIT 12 : NEPHROLOGYLevel Sub-outcomes

T4	Fluid and electrolyte balance through the kidneys
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- T4 - Normal
- T4 - Physical exertion
- T4 - Electrolyte problems
- T4 - Diagnosis and management
- T4 Renal circulation
- T4 - Physiological aspects
- T4 - Changes during exercise
- T4 - Kidney functions
- T4 - Haematuria
- T4 - Causes
- S3 - Diagnosis and management
- T4 Medicines and kidney physiology
- T4 - General medicines
- T4 - Nephro toxicity
- C3 - Diagnosis, treatment and prognosis
- T4 Nephro toxins
- T4 - Exogenous
- T4 - Endogenous
- T4 - Rhabdomyolysis
- T4 Acute kidney failure
- T4 - Causes with physical exertion
- T4 - Diagnosis and recovery
- T4 - Prognosis and recovery
- T4 Athletes with primary kidney disease and effect of physical exertion
- T4 Possible diseases
- T4 - Potential complications
- C3 - Management
- T4 Chronic kidney failure and physical exertion
- T4 - Physical limitations
- T4 - Nephrological medication
- T4 Blood pressure control during exercise
- T4 - Normal response
- T4 - Hemodynamic change
- T4 - Hypertensive patients and exercise
- T4 Potential kidney damage
- T4 - Management
- T4 - Special investigations
- T4 - Referral

ASSESSMENT CRITERIA

All above-mentioned study units will be evaluated by means of

1. Self-assessment:

Self-study of the subjects, not only from prescribed textbooks, but also from most recent articles.

2. Co-students:

Discussions among each other during contact time in February/May/
August/September.

3. Examinations:

Theory
Orals
OSCE

REFERENCES

Harrison's Principles of Internal Medicine
Braunwald et al
McGraw Hill

OCCUPATIONAL THERAPY

COURSE CODE: Part of SGN 800 and 802 (Sports Medicine)

AIM

After completing the 7 study units, the student must be able to communicate with authority on the subjects, as well as to handle specific conditions as indicated.

EMBEDDED KNOWLEDGE

Qualified medical doctor. Actively involved in sport, whether as participant and/or team doctor and/or administrator.

OUTCOMES

a) Critical outcomes

The student must be able to

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made.
- Work effectively with others as a member of a team, group, organisation, and community.
- Organise and manage oneself and one's activities responsibly and effectively
- Collect, analyse, organise and critically evaluate information.
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion.
- Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

b) Specific outcomes

The student must be able to:

- Diagnose and handle clinical problems (whether by self or by the necessary referral)
- Speak with authority on arthritis related subjects
- Integrate knowledge and apply it in a multi-disciplinary environment

The level of competence required of a student varies from 1 to 4 as explained in the following table:

Theory/Knowledge	Clinical Pictures	Skills list
T1 Nice to know	C1 Recognise or place	S1 Only theory
T2 Of some relevance	C2 Tentative diagnosis	S2 Theory and seen or have demonstrated
T3 Advisable to know	C3 Diagnose and refer	S3 Apply/perform (under supervision)
T4 Essential knowledge for future clinical practice/to achieve the outcome	C4 Diagnose and treat	S4 Routine performance

STUDY UNITS

STUDY UNIT 1: THE MEANING OF PARTICIPATION IN SPORT FOR PERSONS WITH PHYSICAL DISABILITY

Level Sub-outcomes

- T2 Insight into equal value of participation in sport for people with physical disability and able-bodied persons.
 Insight into the role of participation in sport in the (re)integration of a person with physical disability into the community.
 Knowledge of sport facilities for people with physical disability.

STUDY UNIT 2: SPORT FOR PEOPLE WITH PHYSICAL DISABILITY

Level Sub-outcomes

- T2 Knowledge of the contribution of participation in sport to facilitate return of physiological and psychological functions in persons with physical impairment.
 T2 Knowledge of risk factors in specific impairments.

- C3 Appropriate referral of people with physical disability for sport as therapy, and for competitive sport activity.
- T2 Knowledge of the most common types of sport for people with physical disability.
- T2 Knowledge of the most common adaptations.
- T2 Matching impairment with types of sport.

STUY UNIT 3: CLASSIFICATION OF ATHLETES WITH PHYSICAL DISABILITY

Level Sub-outcomes

- S3 Classify athletes
- Diagnostic (CP/Isra)
 - Sitting (ISMWSF)
 - Standing (ISOD)

STUDY UNIT 4: THE MEANING OF PARTICIPATION IN SPORT FOR PEOPLE WITH MENTAL DISABILITY

Level Sub-outcomes

- T2 Insight into equal value of participation in sport for people with mental disability and able-bodied persons.
Insight into the role of participation in sport in the (re)integration of a person with mental disability into the community.
Knowledge of sport facilities for people with mental disability.

STUDY UNIT 5: POSSIBILITIES FOR PERSONS WITH MENTAL DISABILITY

Level Sub-outcomes

- T2 Theoretical knowledge of the most common types of sport for people with mental disability, and their adaptations.
- T1 Special Olympics
- T2 Coaching persons with mental disability
- T2 Injuries

STUDY UNIT 6: THE SPORTS MEDICAL COMPLEXITY OF THE ATHLETE WITH DISABILITY

Level Sub-outcomes

- T3 Theoretical knowledge of problems and injuries of athletes with disability
- S3 Integrate the management of sports injuries with the relevant impairments that accompany the type of disability.

STUDY UNIT 7: HAND INJURIES IN SPORTS MEDICINE

Level Sub-outcomes

- C3/4 Sport related hand trauma
- Epidemiology
 - Management
 - Rehabilitation
- C3/4 Refer for hand therapy and rehabilitation

ASSESSMENT CRITERIA

All above-mentioned study units will be evaluated by means of

1. Self-assessment:
Self-study of the subjects, not only from prescribed textbooks, but also from most recent articles.
Seminars
2. Co-students:
Discussions among each other during contact time in February/May/
August/September.
3. Examinations:
Theory
Orals
Case studies

REFERENCES

Books (The most recent edition available)

Games, sports and exercises for the physical disabled

Adams & McCubbing

Lea and Febriger

ORTHOPAEDICS

COURSE CODE: Part of SGN 802 and 800 (Sports Medicine)

AIM

After completing the 12 study units, the student must be able to communicate with authority on the subjects, as well as to handle specific conditions as indicated.

EMBEDDED KNOWLEDGE

Qualified medical doctor. Actively involved in sport, whether as participant and/or team doctor and/or administrator.

OUTCOMES**a) Critical outcomes**

The student must be able to:

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made
- Work effectively with others as a member of a team, group, organisation, community
- Organise and manage oneself and one's activities responsibly and effectively
- Collect, analyse, organise and critically evaluate information
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion
- Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

b) Specific outcomes

The student must be able to:

- Diagnose and handle clinical problems (whether by self or by the necessary referral)
- Speak with authority on orthopaedics.
- Integrate knowledge and apply it in a multi-disciplinary environment.

The level of competence required of a student varies from 1 to 4 as explained in the following table:

Theory/Knowledge	Clinical Pictures	Skills list
T1 Nice to know	C1 Recognise or place	S1 Only theory
T2 Of some relevance	C2 Tentative diagnosis	S2 Theory and seen or have demonstrated
T3 Advisable to know	C3 Diagnose and refer	S3 Apply/perform (under supervision)
T4 Essential knowledge for future clinical practice/to achieve the outcome	C4 Diagnose and treat	S4 Routine performance

STUDY UNITS**STUDY UNIT 1: HAND AND WRIST**Level Sub-outcomes

- C3 Acute conditions
- Diagnosis
 - Treatment
 - Distal radius fracture
 - Scaphoid fracture
 - Fracture hook of Hamatum
 - TFCC injury
 - Schapholunate dissociation
 - Finger fracture and sprain
 - Metacarpals
 - Phalanges
 - Carpal dislocation
 - FDP injuries
 - DIP dislocation
 - Mallet finger
 - Boutonniere deformity
- C3 Chronic conditions
- Diagnosis
 - Treatment
 - De Quervain's
 - TFCC injuries
 - Epiphyseal injuries (Salter Harris)
 - Impaction syndromes
 - Scaphoid
 - Triquetrohamate
 - Radial styloid
 - Capitatum
 - Lunatum
 - Tendinitis
 - ECR
 - FCR
 - Intersection syndrome
 - Kiënbock's disease
 - Carpal tunnel syndrome
 - Non-union of scaphoid fracture
 - Mallet finger
 - Boutonniere deformity
 - Swan neck deformity
 - MP instability in the thumb
- T3 Radiological aspect of hand and wrist injuries
- T4 Applicable orthosis

STUDY UNIT 2: ELBOW AND FOREARMLevel Sub-outcomes

- T4 Causes of lateral elbow pain
- Extensor tendinosis
 - Synovitis radiohumeral joint
 - Impingement N. interosseus posterior
 - Osteochondritis dissecans
 - Capitellum
 - Radius
 - Referred pain

- T4 Causes of medial elbow pain
- Flexor tendinosis
 - Medial collateral ligament injury
 - N. ulnaris impingement
 - Apophysitis
 - Avulsion fracture medial epicondyle
 - Referred pain
- T4 Causes of posterior elbow pain
- Olecranon bursitis
 - Triceps tendinitis
 - Posterior dislocation
 - Olecranon avulsion
- T4 Causes of forearm pain
- Radius/Ulna fractures
 - Stress fracture
 - Compartment syndrome
- T3 Radiology of the elbow and forearm

STUDY UNIT 3: SHOULDER

Level Sub-outcomes

- T4 Causes of shoulder pain
- Rotator cuff
 - Impingement
 - Tendinitis
 - Tear
 - Calcification
 - GH dislocation
 - Anterior
 - Posterior
 - GH instability
 - TUBS
 - AMBRE
 - Referred pain
 - Clavicle fracture
 - AC ligament injury
 - S-C dislocation
 - Frozen shoulder
 - Biceps tendinitis
 - Nerve impingements
 - Suprascapularis
 - Thoracicus longus
 - Muscle tears
 - Pec major
 - Biceps long head
 - Biceps distal
 - Brachial plexus
 - Neuro praxia
 - Thoracic outlet syndrome
 - Axillary vena thrombosis
- T3 Radiology of the shoulder

STUDY UNIT 4: NECK

Level Sub-outcomes

- C3 Soft tissue injuries
- Whip lash
- C2 Bony injuries
- C2 Nerve root pain

STUDY UNIT 5: BACKLevel Sub-outcomes

- T3 Thoracic
- Costovertebral pain
 - Scoliosis (relevance in sport)
 - Scheurmann's (relevance in sport)
- T3 Lumbar
- Spondylolysis/Spondylolisthesis
 - Discus herniations
 - Management of acute back pain
 - Management of chronic back
 - Lumbar muscle injury
 - Lumbar facet syndrome
- Radiology of the spine
Applicable orthosis in sport

STUDY UNIT 6: GLUTEAL AREALevel Sub-outcomes

- T4 Causes of gluteal pain
- Referred pain
 - Lumbar
 - SIJ
 - Hamstring origin tendinitis
 - Ischiogluteal bursitis
 - Piriformis
 - Impingement
 - Strain
 - N Ischiadicus
 - Stress fractures
 - Ischium
 - Pubic ramus
 - Apophysitis/avulsion fractures (kids)
 - Spondylarthropathies
- T3 Radiology of the gluteal area

STUDY UNIT 7: HIP AND GROINLevel Sub-outcomes

- T4 Causes of hip and groin pain
- Adductors
 - Strain
 - Tendinitis
 - Osteitis pubis
 - Trochanteric bursitis
 - Iliopsoas
 - Strain
 - Bursitis
 - Stress fractures
 - Femur neck
 - Pubic ramus
 - Rectus abdominus tendinopathy
 - Inguinal hernia
 - Indirect
 - Direct
 - Gillmore's groin
 - Femoral hernia
 - Hip joint

- Synovitis
 - OA
 - SUFE
 - Referred pain
 - Lumbar
 - SIJ
 - Nerve impingement
 - Ilio inguinal
 - Genitofemoral
 - Meralgia paresthetica
 - Rectus femoris strain (upper third)
 - Apophysitis/avulsion (kids)
 - ASIS
 - AIIIS
 - Intra-abdominal pathology
 - AVN femur head
 - Snapping hip
- Radiology of the hip

STUDY UNIT 8

Level Sub-outcomes

- | | |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| T4 | Causes of anterior thigh pain <ul style="list-style-type: none"> - Quadriceps <ul style="list-style-type: none"> - Contusion - Strain - Tear - Miositis ossificans - Sartorius strain - Gracilis strain - Referred pain - Stress fractures femoral shaft |
| T4 | Causes of posterior thigh pain <ul style="list-style-type: none"> - Hamstring <ul style="list-style-type: none"> - Contusion - Strain - Tear - Referred pain - Bursitis <ul style="list-style-type: none"> - Semimembranosus - Ischiogluteal |
| T3 | Radiology of the thigh |

STUDY UNIT 9: KNEE

Level Sub-outcomes

- | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| T4 | Acute injuries <ul style="list-style-type: none"> - Medial meniscus - Lateral meniscus - Medial collateral ligament - Lateral collateral ligament - Anterior cruciate ligament - Posterior cruciate ligament - Patellar dislocation - Patella tendon rupture - Fat pad impingement (Hoffa syndrome) - Dislocation of the knee joint - Fracture tibial plato - Osteochondritis dissecans |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- Haemartrosis
- T4 Chronic injuries
 - Causes of anterior knee pain
 - Patellofemoral syndrome
 - Patella tendinitis
 - Patellofemoral instability
 - Synovial plica
 - Fat pad
 - Pre-patellar bursitis
 - Osgood Schlatter syndrome
 - Sinding Larsen Johanssen syndrome
 - Referred pain
 - SUFE
 - Perhtes
 - Osteochondritis dissecans
 - Tumors
- T4 Causes of lateral knee pain
 - ITB
 - Biceps femoris tendinitis
 - Lateral meniscal pathology
 - Small tear
 - Degeneration
 - Cyst
 - OA lateral compartment
 - Synovitis
 - N. peroneus communis injury
- T4 Causes of medial knee pain
 - Pes anserine bursitis
 - MCL
 - Sprain
 - Pellegrini Stieda lesion
 - Medial meniscus
 - Small tear
 - Degeneration
 - Adductor magnus
 - Gracilis
- T4 Causes of posterior knee pain
 - DVT
 - Joint effusion
 - Hamstring tendinitis
 - Popliteus tendinitis
 - Bakers cyst
 - Gastocnemius tendinitis
- T3 Ligament repair
- T3 Arthroscopy and arthroscopic repairs
- T4 Rehabilitation
- T4 Applicable orthosis of knee injuries
- T3 Radiology of the knee

STUDY UNIT 10: LOWER LEG PAIN

Level Sub-outcomes

- T4 Causes of shin pain
 - Bone
 - Stress fractures
 - Fractures
 - Periosteal contusion
 - Tenoperiositis

- Medial border tibia
 - Chronic compartment syndrome
 - Anterior
 - Lateral deep posterior
 - Posterior deep
 - Impingement syndromes
 - Popliteal artery
 - Anterior tibial artery
 - N peroneus superficialis
 - Erythema nodosum
 - Rachitis
 - Syphilis
 - Acute compartment syndrome
- T4 Causes of calve pain
- Muscle strain
 - Gastrocnemius
 - Soleus
 - Muscle contusion
 - Gastrocnemius
 - Muscle cramps
 - DOMS
 - Referred pain (back)
 - Posterior compartment syndrome
 - DVT
 - Arterial insufficiency
- T3 Applicable radiology

STUDY UNIT 11: ANKLE

Level Sub-outcomes

- T4 Pain in the Achilles area
- Achilles tendon
 - Tendinitis
 - Paratendinitis
 - Focal degeneration
 - Partial tear
 - Complete tear
 - Retrocalcaneal bursitis
 - Posterior impingement syndrome
 - Sever's disease
- T4 Acute ankle injury
- Ligaments
 - Lateral
 - Medial
 - Anterior inferior tibiofular
 - Peroneal dislocation
 - Fractures
 - Malleoli
 - Lateral
 - Medial
 - Posterior
 - Talar dome
 - Tibial mortise
 - Bases' MT5
 - Anterior process calcaneus
 - Lateral process talus
 - Posterior process talus
 - Os trigonum

- Dislocation of the ankle
 - Tendon rupture
 - Tibialis posterior
 - Peroneal tendons
 - Growth plate fractures in children
 - Ruptured syndesmosis
- T3 Chronic ankle pain
- Medial
 - Tibialis posterior tendinitis
 - FHL tendinitis
 - Medial calcaneal nerve impingement
 - Calcaneal stress fractures
 - Tarsal tunnel syndrome
 - Posterior impingement
 - Navicular stress fracture
 - Complications of acute ankle injuries
 - RSD
 - Lateral
 - Peroneal tendinitis
 - Sinus tarsi syndrome
 - Anterolateral impingement
 - Stress fracture
 - Talus
 - Distal fibula
 - Anterior
 - Anterior impingement
 - Tibialis anterior tendinitis
- T4 Applicable orthosis of the ankle
- T3 Radiology

STUDY UNIT 12: FOOT PAIN

- | <u>Level</u> | <u>Sub-outcomes</u> |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| T4 | Causes of back foot and heel pain <ul style="list-style-type: none"> - Plantar fasciitis - Fat pad - Calcaneal fracture - Medial calcaneal nerve impingement - Tarsal tunnel syndrome - Talar stress fracture - Spondylarthritis |
| T4 | Causes of midfoot pain <ul style="list-style-type: none"> - Navicular stress fracture - Midtarsal joint sprain - Extensor tendinitis - Stress fracture <ul style="list-style-type: none"> - Cuneiforme - Cuboid - Abductor hallucis strain - Tarsal coalition (adolescents) - Köhler's disease |
| T4 | Causes of forefoot pain <ul style="list-style-type: none"> - Corns and calluses - Onychocryptosis - Synovitis MTP joints - MTP1 sprain - Subungual haematoma - Hallux valgus |

- Hallux rigidus
- Morton's neuroma
- Sesamoiditis
- Stress fracture metatarsal
- Freiberg's disease
- Ingrown toenails

T4 Foot deformities

- Flatfoot
- Claw toes
- Cavus foot

ASSESSMENT CRITERIA

All above-mentioned study units will be evaluated by means of

1. Self-assessment:

Self study of the subjects, not only from prescribed textbooks, but also from most recent articles.
Seminars

2. Co-students:

Discussions among each other during contact time in February/May/August/September.

1. Examinations:

Theory
Orals
Case studies

REFERENCE

Orthopaedic Sports Medicine

De Lee Drez & Stanitski

WB Saunders

PHARMACOLOGY

COURSE CODE: Part of SGN 802 and 800 (Sports Medicine)

AIM

After completing the 3 study units, the student must be able to communicate with authority on the subjects, as well as to handle specific conditions as indicated.

EMBEDDED KNOWLEDGE

Qualified medical doctor. Actively involved in sport, whether as participant and/or team doctor and/or administrator.

OUTCOMES

a) Critical outcomes

The student must be able to:

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made
- Work effectively with others as a member of a team, group, organisation, community
- Organise and manage oneself and one's activities responsibly and effectively
- Collect, analyse, organise and critically evaluate information
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion
- Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

b) Specific outcomes

The student must be able to:

- Diagnose and handle clinical problems (whether by self or by the necessary referral)
- Speak with authority on pharmacology.
- Integrate knowledge and apply it in a multi-disciplinary environment.

The level of competence required of a student varies from 1 to 4 as explained in the following table:

Theory/Knowledge	Clinical Pictures	Skills list
T1 Nice to know	C1 Recognise or place	S1 Only theory
T2 Of some relevance	C2 Tentative diagnosis	S2 Theory and seen or have demonstrated
T3 Advisable to know	C3 Diagnose and refer	S3 Apply/perform (under supervision)
T4 Essential knowledge for future clinical practice/to achieve the outcome	C4 Diagnose and treat	S4 Routine performance

STUDY UNITS**STUDY UNIT 1: STEROIDS**

<u>Level</u>	<u>Sub-outcomes</u>
T4	Pharmacodynamics of glucocorticosteroids
T4	Pharmacokinetics
T4	Undesirable effects of corticosteroids

STUDY UNIT 2: STIMULANTS AND OTHER PROHIBITED DRUGS

<u>Level</u>	<u>Sub-outcomes</u>
T4	Examples of drugs and possible detrimental effects
T4	Control and methods of determination

STUDY UNIT 3: ROLE OF ANTI-INFLAMMATORY DRUGS

<u>Level</u>	<u>Sub-outcomes</u>
T4	Classification
T4	Pharmacodynamics
T4	Pharmacokinetics
T4	Undesirable effects

ASSESSMENT CRITERIA

All above-mentioned study units will be evaluated by means of

1. Self-assessment:
Self-study of the subjects, not only from prescribed textbooks, but also from most recent articles.
Seminars
2. Co-students:
Discussions among each other during contact time in February/May/
August/September.
3. Examinations:
Theory
Orals
Case studies

REFERENCES

Books (most recent publications)

1. Pharmacology
De K Sommers
Butterworths

PHYSICAL MEDICINE

COURSE CODE: Part of SGN 802 and 800 (Sports Medicine)

AIM

After completing the 8 study units, the student must be able to communicate with authority on the subjects, as well as to handle specific conditions as indicated.

EMBEDDED KNOWLEDGE

Qualified medical doctor. Actively involved in sport, whether as participant and/or team doctor and/or administrator.

OUTCOMES**a) Critical outcomes**

The student must be able to

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made.
- Work effectively with others as a member of a team, group, organisation, community.
- Organise and manage oneself and one's activities responsibly and effectively
- Collect, analyse, organise and critically evaluate information.
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion.
- Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

b) Specific outcomes

The student must be able to:

- Diagnose and handle clinical problems (whether by self or by the necessary referral)
- Speak with authority on arthritis related subjects
- Integrate knowledge and apply it in a multi-disciplinary environment

The level of competence required of a student varies from 1 to 4 as explained in the following table:

Theory/Knowledge	Clinical Pictures	Skills list
T1 Nice to know	C1 Recognise or place	S1 Only theory
T2 Of some relevance	C2 Tentative diagnosis	S2 Theory and seen or have demonstrated
T3 Advisable to know	C3 Diagnose and refer	S3 Apply/perform (under supervision
T4 Essential knowledge for future clinical practice/to achieve the outcome	C4 Diagnose and treat	S4 Routine performance

STUDY UNITS**STUDY UNIT 1: OSTEOPOROSIS**Level Sub-outcomes

- T4 Theoretical knowledge on the subject,
- Epidemiology
 - Clinical signs and complications
 - Risk factors
 - Special investigations
 - Treatment
- C3 Management of the patient with osteoporosis

STUDY UNIT 2: STRESS FRACTURESLevel Sub-outcomes

- T4 Theoretical knowledge on the subject, including:
- Epidemiology
 - Clinical signs and complications
 - Risk factors
 - Special investigations
 - Treatment
- C3 Management of the patient with a stress fracture(s)

STUDY UNIT 3: MONO vs POLI-ARHRITISLevel Sub-outcomes

- C3 One must be able to give a working diagnosis. This can be done with the help of:
- Complete history
 - Physical examination
 - Joint aspiration
 - Special investigations
 - Differential diagnosis
- C3 Management will depend on the diagnosis
- Mono-arthritis
 - Poli-arthritis

STUDY UNIT 4: INFLAMMATORY RHEUMATIC DISEASESLevel Sub-outcomes

- T3 Important conditions to recognise, include:
- Rheumatoid Arthritis
 - Spondylarthropathies
 - Gout
 - Crystal arthropathies
- T3 Theoretical knowledge on each of the subjects, including:
- Epidemiology
 - Clinical signs and complications
 - Risk factors
 - Special investigations
 - Treatment

**STUDY UNIT 5: NON-INFLAMMATORY RHEUMATIC CONDITIONS:
OSTEOARTHRITIS**Level Sub-outcomes

- T4 Theoretical knowledge on the subject,
- Epidemiology
 - Clinical signs and complications
 - Risk factors
 - Special investigations
 - Treatment

C3 Management of the patient with osteoarthritis

STUDY UNIT 6: SOFT TISSUE RHEUMATOLOGY

Level Sub-outcomes

- T3 Important conditions to be recognized, include:
- Fibromyalgia
 - Regional pain syndrome
 - RSD

STUDY UNIT 7: BACK MANIPULATION

Level Sub-outcomes

- T3 Theoretical knowledge on different maneuvers
 S2 Practical manipulation

STUDY UNIT 8: INFILTRATIONS

Level Sub-outcomes

- T4 Indications
 T4 Contra-indications
 T4 Joint and soft tissue anatomy
 T3 Pharmacology of medicines used
 S3 Practical infiltration

ASSESSMENT CRITERIA

All above-mentioned study units will be evaluated by means of

1. Self-assessment:
 Self-study of the subjects, not only from prescribed textbooks, but also from most recent articles.
 Seminars
2. Co-students:
 Discussions among each other during contact time in February/May/
 August/September.
3. Examinations:
 Theory
 Orals
 Case studies
 OSCE

REFERENCES

Books (most recent publications)

1. Textbook of Rheumatology
 Kelley et al
 5th edition
3. Rheumatology
 Klippel en Dieppe

Journals

1. Seminars on Arthritis & Rheumatism
2. Clinical and Experimental Rheumatology
3. British Journal of Rheumatology

PHYSIOLOGY**COURSE CODE:** FSG 880 (Sports Physiology)**AIM**

After completing the course in Sports Physiology, the student should be able to communicate with authority on the physiological aspects of Sports Medicine as indicated in the syllabus. They should furthermore be able to apply this knowledge in practicing Sports Medicine.

EMBEDDED KNOWLEDGE

Qualified medical doctor. Actively involved in sport, whether as participant and/or team doctor and/or administrator.

OUTCOMES**a) Critical outcomes**

The student must be able to

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made.
- Work effectively with others as a member of a team, group, organisation, and community.
- Organise and manage oneself and one's activities responsibly and effectively
- Collect, analyse, organise and critically evaluate information.
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion.
- Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

a) Specific outcomes

The student must be able to:

- Diagnose and handle clinical problems (whether by self or by the necessary referral)
- Speak with authority on sports physiology related subjects
- Integrate knowledge and apply it in a multi-disciplinary environment

The level of competence required of a student varies from 1 to 4 as explained in the following table:

Theory/Knowledge	Clinical Pictures	Skills list
T1 Nice to know	C1 Recognise or place	S1 Only theory
T2 Of some relevance	C2 Tentative diagnosis	S2 Theory and seen or have demonstrated
T3 Advisable to know	C3 Diagnose and refer	S3 Apply/perform (under supervision)
T4 Essential knowledge for future clinical practice/to achieve the outcome	C4 Diagnose and treat	S4 Routine performance

STUDY UNITS**STUDY UNIT 1 : APPLIED MUSCLE PHYSIOLOGY**Level Sub-outcomes

- T4 On successful completion of this study unit, students should be able to demonstrate knowledge, insight and understanding regarding muscle physiology, including
- Molecular structure
 - Contraction mechanism
 - Energy requirements and supply
 - Hypertrophy, atrophy, regeneration

STUDY UNIT 2: APPLIED NEUROPHYSIOLOGYLevel Sub-outcomes

- T4 After completing this study unit the student should be able to demonstrate basic theoretical knowledge regarding
- Muscle tone, including
 - Neuromuscular transmission
 - Upper, lower motorneuron
 - Reflexes
 - Resting muscle tone
 - Movement, posture, balance, including
 - Final common path
 - Subcortical motor mechanisms

STUDY UNIT 3: WATER AND ELECTROLYTESLevel Sub-outcomes

- T4 After this study unit the student should be able to demonstrate knowledge, insight and understanding regarding water and electrolyte balance, including
- the functions of water and electrolytes in the body
 - the role of the kidney in water and electrolyte (specifically sodium) balance
 - neural and hormonal factors involved in water and electrolyte balance
 - receptors involved in water and electrolyte balance
 - shifts of body water including isosmotic, hyperosmotic and hyposmotic volume contraction and expansion
 - water diuresis and osmotic diuresis
- Students are expected to obtain a good insight on the following aspects of water- and electrolyte balance in athletes:
- the redistribution of extracellular fluid (ECF) volume during exercise competition for extracellular fluid during exercise and the mechanisms by which the organs with reduced blood flow still receive the necessary oxygen
 - redistribution of ECF between intracellular and extracellular compartments during physical activity
 - the importance of the proper hydration state during physical activity
 - the importance of fluid replacement during exercise
 - the necessity of mineral replacement in athletes
 - iron replacement and exercise-induced anaemia

STUDY UNIT 4: WATER AND ACID-BASE BALANCELevel Sub-outcomes

- T4 After this study unit the student should have a sound knowledge of
- Normal control of pH, and the importance of the role played by
 - buffers (blood and cytosol)
 - organs
 - suborganelles
 - Control of pH during exercise, including
 - instant energy supply
 - lactate acidosis
 - liver and pH

- mitochondrial control of pH
- pumps and porters

STUDY UNIT 5: THERMO REGULATION

Level Sub-outcomes

- T4 After completion of this study unit, students should be able to demonstrate a sound theoretical knowledge of the subject and furthermore be able to give practical advice on
- Thermo-regulation, including
 - centre
 - mechanisms involved
 - Influences on thermo- regulation by
 - environmental factors
 - work load/rate of labour
 - clothing
 - diseases due to heat and inadequate thermo-regulation
 - heat acclimatisation

STUDY UNIT 6: BIO-ENERGETICS & METABOLISM

Level Sub-outcomes

- T4 After completion of this study unit, the student must have acquired theoretical knowledge on the following
- The mechanism of muscle contraction
 - Sources of ATP for muscle contraction
 - Derivation of energy from carbohydrates under aerobic and anaerobic conditions: Quantitative aspects and metabolic pathways involved
 - Derivation of energy from fats: Quantitative aspects and metabolic pathways involved
 - Derivation of energy from proteins: Quantitative aspects and metabolic pathways involved
 - The adaptation of metabolism to mild exercise and also intense training

STUDY UNIT 7: ENERGY AND METABOLISM

Level Sub-outcomes

- T4 During this study unit students should acquire basic knowledge on the subject which includes the metabolism of
- Carbohydrates
 - Fats
 - Proteins and
 - Lactate
 - Vitamins
 - Minerals

STUDY UNIT 8: HAEMATOLOGY

Level Sub-outcomes

- T4 On successful completion of this study unit, students should have a sound knowledge of the subjects listed and be able to give practical advice where applicable.
- Homeostasis
 - composition of blood
 - functions of blood constituents
 - Homeostasis during exercise
 - milieu interior of a muscle cell
 - adaptation
 - Influence of maximum exercise on the following
 - blood volume
 - red blood-cells and Hb
 - white blood cells
 - blood gasses
 - blood lactose
 - blood pH

- temperature
- release of oxygen
- platelets
- adaptation at high altitudes above sea level
- specific pathophysiology
- anaemia – true/false
- sickle cell anaemia
- white blood cells and mononucleosis
- Improvement regarding ability to achieve

STUDY UNIT 9: CARDIOVASCULAR ADAPTATIONS IN SPORT

Level Sub-outcomes

- T4 In this study unit students should acquire theoretical knowledge on the subject, with special attention to
- Cardiac output
 - Cardiac rate
 - Stroke volume
 - Blood pressure
 - Haemoglobin
 - Oxygen exchange

STUDY UNIT 10: APPLIED ENDOCRINOLOGY

Level Sub-outcomes

- T4 This study unit should provide the student with essential knowledge regarding the role of the hormones produced by the endocrine glands listed, specifically in sport:
- Hypothalamus and hypophysis
 - Thyroid and parathyroid
 - Adrenal glands
 - Reproductive system

STUDY UNIT 11: RESPIRATORY CHANGES IN SPORT

Level Sub-outcomes

- T4 In this study unit students should acquire a general knowledge of the mechanisms involved in the respiratory functions. They should furthermore be able to discuss the exercise-induced adaptations and the respiratory limitations to exercise in the following contexts
- Normal values for partial pressures and content of the gasses in blood
 - The mechanisms involved in alveolar ventilation
 - Capillary transit time
 - Diffusion across the respiratory membrane
 - Ventilation-perfusion ratio and shunts
 - Transport of gasses across the respiratory membrane
 - Respiratory enzymes in the tissues
 - Control of respiratory function
 - The various forms of hypoxia
 - The lung function tests

ASSESSMENT CRITERIA

All above-mentioned study units will be evaluated by means of self-assessment:

Self-study of the subjects, not only from prescribed textbooks, but also from most recent articles.
Seminars

Co-students:

Discussions among each other during contact time in February/May/
August/September.

Examinations:

Theory

REFERENCESBooks (most recent publications)

1. Exercise Physiology
McArdle, Katch & Katch
Lea & Febiger

PHYSIOTHERAPY

COURSE CODE: Part of SGN 802 and 800 (Sports Medicine)

AIM

After completing the 2 study units, the student must be able to communicate with authority on the subjects, as well as to handle specific conditions as indicated.

EMBEDDED KNOWLEDGE

Qualified medical doctor. Actively involved in sport, whether as participant and/or team doctor and/or administrator.

OUTCOMES**a) Critical outcomes**

The student must be able to:

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made
- Work effectively with others as a member of a team, group, organisation, community
- Organise and manage oneself and one's activities responsibly and effectively
- Collect, analyse, organise and critically evaluate information
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion
- Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

b) Specific outcomes

The student must be able to:

- Diagnose and handle clinical problems (whether by self or by the necessary referral)
- Speak with authority on physiotherapy.
- Integrate knowledge and apply it in a multi-disciplinary environment.

The level of competence required of a student varies from 1 to 4 as explained in the following table:

Theory/Knowledge	Clinical Pictures	Skills list
T1 Nice to know	C1 Recognise or place	S1 Only theory
T2 Of some relevance	C2 Tentative diagnosis	S2 Theory and seen or have demonstrated
T3 Advisable to know	C3 Diagnose and refer	S3 Apply/perform (under supervision)
T4 Essential knowledge for future clinical practice/to achieve the outcome	C4 Diagnose and treat	S4 Routine performance

STUDY UNITS**STUDY UNIT 1: BEFORE INJURY/INVOLVEMENT IN SPORTS TEAMS**

<u>Level</u>	<u>Sub-outcomes</u>
T4	Crisis management
T4	Immediate treatment on the field
T4	Pre-season evaluation
T4	Pre-participation preparation
T4	Strapping
T4	Post-participation involvement

STUDY UNIT 2: DURING INJURY

<u>Level</u>	<u>Sub-outcomes</u>
T4	Various phases of inflammation
T4	Physiotherapeutic interventions during each phase of inflammation including electrical modalities
T4	Effects of electrical modality and action of the above-mentioned
T4	Muscle strengthening eccentric, concentric and static methods of strengthening. PNF, isotonics, free active proprioception

STUDY UNIT 3: AFTER TREATMENT

<u>Level</u>	<u>Sub-outcomes</u>
T4	Re-evaluation for return to sports
T4	Criteria for return

ASSESSMENT CRITERIA

All above-mentioned study units will be evaluated by means of

1. Self-assessment:
 - Self-study of the subjects, not only from prescribed textbooks, but also from most recent articles.
 - Seminars
2. Co-students:
 - Discussions among each other during contact time in February/May/August/September.
3. Examinations:
 - Theory
 - Orals
 - Case studies

REFERENCE

Sports Injuries: Mechanism, Prevention, Treatment
 Freddie A Sa and David A Stone
 Williams & Wilkens

PSYCHOLOGY

COURSE CODE: Part of SGN 802 and 800 (Sports Medicine)

AIM

After completing the 2 study units, the student must be able to communicate with authority on the subjects, as well as to handle specific conditions as indicated.

EMBEDDED KNOWLEDGE

Qualified medical doctor. Actively involved in sport, whether as participant and/or team doctor and/or administrator.

OUTCOMES**a) Critical outcomes**

The student must be able to:

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made
- Work effectively with others as a member of a team, group, organisation, community
- Organise and manage oneself and one's activities responsibly and effectively
- Collect, analyse, organise and critically evaluate information
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion
- Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

b) Specific outcomes

The student must be able to:

- Diagnose and handle clinical problems (whether by self or by the necessary referral)
- Speak with authority on sports psychology.
- Integrate knowledge and apply it in a multi-disciplinary environment.

The level of competence required of a student varies from 1 to 4 as explained in the following table:

Theory/Knowledge	Clinical Pictures	Skills list
T1 Nice to know	C1 Recognise or place	S1 Only theory
T2 Of some relevance	C2 Tentative diagnosis	S2 Theory and seen or have demonstrated
T3 Advisable to know	C3 Diagnose and refer	S3 Apply/perform (under supervision)
T4 Essential knowledge for future clinical practice/to achieve the outcome	C4 Diagnose and treat	S4 Routine performance

STUDY UNITS**STUDY UNIT 1: INTRODUCTION TO SPORTS PSYCHOLOGY**Level Sub-outcomes

T3 Know the theoretical background of the territory and development of Sports Psychology as a sport science. The Sport Psychology as profession must be understood and explained.

STUDY UNIT 2: ACHIEVEMENT MOTIVATIONLevel Sub-outcomes

T4 Theoretical knowledge of achievement motivation, including:

- Achievement motivation theories
- Achievement need theories
- Attribution theory
- Goal orientation theory
- Self-efficiency theory
- Competence motivation theory
- The influence of parents and trainers on achievement motivation
- Expectations and motivation

C3 Correct diagnosing of motivation problems and referral to a Sport Psychologist if necessary

STUDY UNIT 3: AROUSAL, ANXIETY AND MOTOR ACHIEVEMENTLevel Sub-outcomes

T4 Theoretical knowledge of arousal, anxiety and motor achievement, including:

- The connection between arousal and achievement
- Drive theory
- The reverse U-hypothesis
- Zones of optimal functioning
- The flow approach
- The catastrophe model
- Revers theory
- Sources of anxiety
- Negative consequences of anxiety
- Measuring of activation and anxiety
- Practical implications

C3 Correct diagnosing of arousal and anxiety problems and referral to a Sport Psychologist if necessary

STUDY UNIT 4: ATTENTION IN SPORTLevel Sub-outcomes

T4 Theoretical knowledge of attention in sport, including:

- What is attention?
- Facets of attention
- Styles of attention
- Factors that influence attention
- Arousal
- Attention deductions
- The measuring of attention

C3 Correct diagnosing of attention problems in sport and referral to a sport psychologist if necessary

STUDY UNIT 5: CAPACITY BUILDLevel Sub-outcomes

- T4 Theoretical knowledge of capacity build, including:
- Capacity build systems
 - Body system
 - Emotional system
 - Cognitive system
 - Intra-interpersonal system
 - Sport technique, strategy and sport knowledge system
 - Logistic planning and prevention system
 - Motivation system
- C3 Correct diagnosing and referral to a sport psychologist if necessary
- T4 Formulation and implementation of a management plan
- Individuals
 - Teams

STUDY UNIT 6: EXERCISE AND PSYCHOLOGICAL WELFARELevel Sub-outcomes

- T4 Theoretical knowledge of exercise and psychological welfare, including:
- Exercise and anxiety
 - Exercise and depression
 - Exercise and self-concept
 - Why exercise enhances psychological welfare
 - Pastime
 - Social processes
 - Chemical reactions
 - Thermogenic hypothesis
 - Problems with the use of exercise as therapy
 - Psychological problems associated with exercise
 - Negative feelings
 - Over training and burnout
 - Eating disorders
 - Over identification with physical activity
 - Exercise abuse
 - Conclusion
- C3 Correct diagnosing and referral of a sport psychologist if necessary
- T4 Management plan to formulate and implement
- Individuals
 - Teams

STUDY UNIT 7: BURNOUT SYNDROMELevel Sub-outcomes

- T4 Theoretical knowledge of burnout syndrome, including
- Slump
 - Slump and burnout
 - Symptoms of slump and burnout
 - Prevention and treatment of slump and burnout
 - Variation
 - Managing post-competition stress
 - Athlete input
 - Revision of goals
 - Psychological interventions
 - Interruptions
 - Extended rest
- C3 Correct diagnosing and referral to a sport psychologist if necessary
- T4 Formulating and implementing a management plan
- Individuals

- Teams

STUDY UNIT 8: THE PSYCHOLOGY OF INJURIES

Level Sub-outcomes

- T4 Theoretical knowledge of the psychology of injuries, including:
- The stress injury connection
 - Cognitive evaluation
 - Physiological and attention reactions
 - Factors that influence the stress injury connection
 - Personality
 - History of stressors
 - Management sources
 - The athlete's response to injury
 - Psychological reactions to injury
 - Stages of emotional reactions to injury
 - Rehabilitation considerations
 - Locus of control
 - Information
 - Goal setting
 - Motivation
 - Social support
 - Interventions
 - Results/consequences
- C3 Correct diagnosing and referral to a sport psychologist if necessary
- T4 Formulate and implement a management plan
- Individuals
 - Teams

ASSESSMENT CRITERIA

1. The different functions of the sport psychologist must be understood
2. Your own interpretation of one or two of the mental toughness principles must be understood.
3. The relationships between exercise and anxiety; exercise and depression and exercise and self-concept.
4. The reason why exercise enhances psychological well-being (theories) must be explained.
5. The psychological problems associated with exercise must be described.
6. Give a critical evaluation of the psychology of injury. Search for relations between knowledge in this chapter and related with all possible knowledge that you have received in your previous years of studies. Generate new hypotheses and provide new information (research) on psychology of injury.

REFERENCE

Routledge Handbook of Applied Sport Psychology: A Comprehensive Guide for Students and Practitioners (Routledge International Handbooks) by Stephanie J. Hanrahan

RADIOLOGY

COURSE CODE: Part of SGN 802 and 800 (Sports Medicine)

AIM

After completing the 3 study units, the student must be able to communicate with authority on the subjects, as well as to handle specific conditions as indicated.

EMBEDDED KNOWLEDGE

Qualified medical doctor. Actively involved in sport, whether as participant and/or team doctor and/or administrator.

OUTCOMES**a) Critical outcomes**

The student must be able to:

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made
- Work effectively with others as a member of a team, group, organisation, community
- Organise and manage oneself and one's activities responsibly and effectively
- Collect, analyse, organise and critically evaluate information
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion
- Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

b) Specific outcomes

The student must be able to:

- Diagnose and handle clinical problems (whether by self or by the necessary referral)
- Speak with authority on radiology.
- Integrate knowledge and apply it in a multi-disciplinary environment.

The level of competence required of a student varies from 1 to 4 as explained in the following table:

Theory/Knowledge	Clinical Pictures	Skills list
T1 Nice to know	C1 Recognise or place	S1 Only theory
T2 Of some relevance	C2 Tentative diagnosis	S2 Theory and seen or have demonstrated
T3 Advisable to know	C3 Diagnose and refer	S3 Apply/perform (under supervision)
T4 Essential knowledge for future clinical practice/to achieve the outcome	C4 Diagnose and treat	S4 Routine performance

STUDY UNITS**STUDY UNIT 1: RÖNTGEN INVESTIGATIONS**Level Sub-outcomes

T4 Applicable request

T4 Correct interpretation

STUDY UNIT 2: MRILevel Sub-outcomes

T4 Applicable request

T4 Correct interpretation

STUDY UNIT 3: SONARLevel Sub-outcomes

T4 Applicable request

T4 Correct interpretation

STUDY UNIT 4: NUCLEAR MAGNETIC RESONANCELevel Sub-outcomes

T4 Applicable request

T4 Correct interpretation

ASSESSMENT CRITERIA

All above-mentioned study units will be evaluated by means of

1. Self-assessment:
Self-study of the subjects, not only from prescribed textbooks, but also from most recent articles.
Seminars
2. Co-students:
Discussions among each other during contact time in February/May/
August/September.
3. Examinations:
Theory
Orals
Case studies
OSCE

REFERENCES

Most recent journal articles (Medline)

RESEARCH METHODOLOGY

COURSE CODE: TNM 800 (Applied research methodology) (Progress course)

AIM

After completing the 9 study units, the student must be able to communicate with authority on the subjects, as well as to handle specific conditions as indicated.

EMBEDDED KNOWLEDGE

Qualified medical doctor. Actively involved in sport, whether as participant and/or team doctor and/or administrator.

OUTCOMES

a) Critical outcomes

The student must be able to:

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made
- Work effectively with others as a member of a team, group, organisation, community
- Organise and manage oneself and one's activities responsibly and effectively
- Collect, analyse, organise and critically evaluate information
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion
- Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

b) Specific outcomes

The student must be able to:

- Diagnose and handle clinical problems (whether by self or by the necessary referral)
- Speak with authority on research methodology.
- Integrate knowledge and apply it in a multi-disciplinary environment.

The level of competence required of a student varies from 1 to 4 as explained in the following table:

Theory/Knowledge	Clinical Pictures	Skills list
T1 Nice to know	C1 Recognise or place	S1 Only theory
T2 Of some relevance	C2 Tentative diagnosis	S2 Theory and seen or have demonstrated
T3 Advisable to know	C3 Diagnose and refer	S3 Apply/perform (under supervision)
T4 Essential knowledge for future clinical practice/to achieve the outcome	C4 Diagnose and treat	S4 Routine performance

General

A one-day symposium will be held on the subject.

STUDY UNITS**STUDY UNIT 1: PRINCIPLES**

<u>Level</u>	<u>Sub-outcomes</u>
T4	Philosophy of Science and Research
T4	Choice of Research design
T4	Obtaining funds
T4	Research protocol
T4	Ethical considerations
T4	Information systems

STUDY UNIT 2: EPIDEMIOLOGICAL METHODS

<u>Level</u>	<u>Sub-outcomes</u>
T4	Epidemiological methods
T4	Principles <ul style="list-style-type: none"> - Classifications - Definitions
T4	Survey and screening
T4	Repeatability, validity, specificity and sensitivity
T4	Epidemiological studies

STUDY UNIT 3: STATISTICAL METHODS

<u>Level</u>	<u>Sub-committee</u>
T3	Statistical method
T3	Variables, measurement and data points
T3	Classification of data
T3	Conclusion, presentation of data
T3	Probability calculation
T3	Normal distribution
T3	Pilot study
T3	Comparative statistics
T3	Correlation or regression
T3	Statistical association and causal association

STUDY UNIT 4: ASSIMILATION OF DATA

<u>Level</u>	<u>Sub-outcomes</u>
T4	Graphic presentation
T4	Computer processing
T4	Report, presentations and posters
T4	Publications

STUDY UNIT 5: REVIEW OF ARTICLE

<u>Level</u>	<u>Sub-outcomes</u>
T4	Is the methodology correct? Will the outcomes of the article make a difference in the way it is currently managed?

STUDY UNIT 6: PROTOCOL AND PROJECT PLANNING

STUDY UNIT 7: VANCOUVER SYSTEM OF REFERENCE

Level Sub-outcomes

T4 Correct usage

STUDY UNIT 8: PROTOCOL EXERCISE**STUDY UNIT 9: ASSIGNMENTS****ASSESSMENT CRITERIA**

All protocols and projects will be approved by the promotor.

REFERENCES

1. Writing your first clinical research protocol.
C Aldous
P Rheeder
T Esterhuizen
Juta
2. Research methods in physical activity.
JR Thomas
JK Nelson
SJ Silverman
Human Kinetics

SPORTS NUTRITION

COURSE CODE: DTE 880

AIM

After completing the module, the student must be able to communicate with authority on basic nutrition, as well as to apply the nutrition principles in a sport context.

EMBEDDED KNOWLEDGE

Qualified medical doctor. Actively involved in sport, whether as participant and/or team doctor and/or administrator.

OUTCOMES

Critical outcomes

The student must be able to

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made.
- Work effectively with others as a member of a team, group, organisation, community.
- Collect, analyse, organise and critically evaluate information in a sport nutrition context.
- Communicate effectively in a sport nutrition context using visual, mathematical and/or language skills in the modes of oral and/or written persuasion.
- Use science and technology effectively and critically in a sport nutrition context, showing responsibility towards the environment and health of others.

Specific outcomes

The student must be able to:

- Diagnose and handle clinical problems in a nutrition context (whether self or by the necessary referral)
- Speak with authority on basic nutrition in a sport context.
- Integrate knowledge and apply it in a multi-disciplinary environment.

The level of competence required of a student varies from 1 to 4 as explained in the following table:

Theory/Knowledge	Clinical Pictures	Skills list
T1 Nice to know	C1 Recognise or place	S1 Only theory
T2 Of some relevance	C2 Tentative diagnosis	S2 Theory and seen or have demonstrated
T3 Advisable to know	C3 Diagnose and refer	S3 Apply/perform (under supervision)
T4 Essential knowledge for future clinical practice/to achieve the outcome	C4 Diagnose and treat	S4 Routine performance

STUDY UNITS

STUDY UNIT 1: ENERGY SUBSTRATES

<u>Level</u>	<u>Sub-outcomes</u>
T4	Describe the following core concepts in order to bring out the exact meaning of each: <ul style="list-style-type: none"> - Energy (requirements, factors, expenditure, sources) - Energy metabolism - Energy substrates - Energy systems - Basal metabolism vs. basal metabolic rate - Aerobic vs. anaerobic energy expenditure - VO_2 max - Respiratory quotient (RQ) (R-value)
T4	Give a structured, systematic overview of the various energy systems, with reference to biochemical processes in order to elicit the influence of the duration and intensity of exercise on the metabolic processes.

STUDY UNIT 2: CARBOHYDRATES, PROTEINS AND FATS AS ENERGY SUBSTRATES

<u>Level</u>	<u>Sub-outcomes</u>
T4, S2	Discuss carbohydrates, proteins and fats as energy substrates. Distinguish in your answer between the various forms of each substrate, e.g. in the case of carbohydrates you should differentiate between glucose and fructose as substrate. Apply this in a sport context.

STUDY UNIT 3: MICRONUTRIENTS

<u>Level</u>	<u>Sub-outcomes</u>
T3	State your spontaneous view about vitamin and mineral supplementation amongst sports people.
T4	Evaluate your view critically using the given literature.
S2	Make recommendations regarding vitamin and mineral supplementation for sports people.

STUDY UNIT 4: ALCOHOL AND SPORTS PERFORMANCE

<u>Level</u>	<u>Sub-outcomes</u>
T4	Influence of alcohol on energy metabolism
T4	The nutritional implications of alcohol consumption for sports people
S2	Recommendations to sports people regarding alcohol consumption

STUDY UNIT 5: SPORTS-RELATED NUTRITIONAL PROBLEMS

<u>Level</u>	<u>Sub-outcomes</u>
T4	Causes and management of nutritional anaemias and osteoporosis.
T4	Advantages and limitations (within the nutritional context) of exercise for the diabetic.
S2	Advice to a newly-diagnosed diabetic (Type I) in respect of participation in an exercise programme
S2	Advice to a diabetic (Type II) in respect of participation in an exercise programme.

ASSESSMENT CRITERIA

All above-mentioned study units will be evaluated by means of

1. Self-assessment:
Self-study of the subjects, not only from prescribed text books, but also from most recent articles.
Seminars
3. Co-students:
Discussions among each other during contact time in February/May/
August/September.
3. Examinations:
Theory
Orals
Case studies

READING MATERIALPrescribed text book:

Williams MH, Rawson ES, Branch JD. Nutrition for health, fitness and sport. 11th Ed. McGraw-Hill: St Louis. 2017

Articles:

Position of the academy of nutrition and dietetics, dietitians of Canada and the ACSM. Nutrition and Athletic Performance. J Acad Nutr Diet. 2016;116(3):501-528

Mountjoy M, Sundgot-Borgen J, Burke L, Carter S, Constantini N et al. The IOC consensus statement: beyond the Female Athlete Triad – Relative Energy Deficiency in Sport (RED-S). Br J Sport Med. 2014;48:491-497.

ACSM Position Stand: The female athlete triad. Med Sci Sports Exerc. 2007;1867-1882.

Burke LM. Practical Issues in Evidence-based use of Performance Supplements: Supplement Interactions, Repeated Use and Individual Responses. Sports Med. 2017;47(1):79-100.

SPORTS PARTICIPATION AND MANAGEMENT

COURSE CODE: Part of SGN 800 (Sports Medicine)

AIM

After completing the 5 study units, the student must be able to communicate with authority on the subjects, as well as to handle specific conditions as indicated.

EMBEDDED KNOWLEDGE

Qualified medical doctor. Actively involved in sport, whether as participant and/or team doctor and/or administrator.

OUTCOMES

a) Critical outcomes

The student must be able to:

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made
- Work effectively with others as a member of a team, group, organisation, community
- Organise and manage oneself and one's activities responsibly and effectively
- Collect, analyse, organise and critically evaluate information
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion
- Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

b) Specific outcomes

The student must be able to:

- Diagnose and handle clinical problems (whether by self or by the necessary referral)
- Speak with authority on sports participation and management.
- Integrate knowledge and apply it in a multi-disciplinary environment.

The level of competence required of a student varies from 1 to 4 as explained in the following table:

Theory/Knowledge	Clinical Pictures	Skills list
T1 Nice to know	C1 Recognise or place	S1 Only theory
T2 Of some relevance	C2 Tentative diagnosis	S2 Theory and seen or have demonstrated
T3 Advisable to know	C3 Diagnose and refer	S3 Apply/perform (under supervision)
T4 Essential knowledge for future clinical practice/to achieve the outcome	C4 Diagnose and treat	S4 Routine performance

STUDY UNITS**STUDY UNIT 1: BASIC CONCEPTS**

<u>Level</u>	<u>Sub-outcomes</u>
T3	Sport
T3	Recreation
T3	Management
T3	Sport management
T3	Effective
T3	Appropriateness

STUDY UNIT 2: THE ROLL OF SPORT IN THE MODERN SOCIETY

<u>Level</u>	<u>Sub-outcomes</u>
T3	Sport as an international industry
T3	Development of <u>Sport management</u>
T3	Sport structures

STUDY UNIT 3: BASIC PRINCIPLES OF SPORT MANAGEMENT

<u>Level</u>	<u>Sub-outcomes</u>
T3	Management rolls and responsibilities
T3	Management levels
T3	Resources
T3	Philosophic principles

STUDY UNIT 4: THE MANAGEMENT PROCESS

<u>Level</u>	<u>Sub-outcomes</u>
T4	Planning
T4	Organisation
T4	Leadership (activating)
T4	Control
T4	Decision making
T4	Communication
T4	Motivation
T4	Co-ordinating
T4	Delegating
T4	Disciplining

STUDY UNIT 5: LEADERSHIP AND EVALUATION

<u>Level</u>	<u>Sub-outcomes</u>
T4	Styles
T4	Characteristics
T4	Quality First

ASSESSMENT CRITERIA

All above-mentioned study units will be evaluated by means of

1. Self-assessment:
 - Self-study of the subjects, not only from prescribed textbooks, but also from most recent articles.
 - Seminars
2. Co-students:
 - Discussions among each other during contact time in February/May/August/September.

3. Examinations:
 - Theory
 - Orals
 - Case studies

REFERENCES

1. Bollaert, L (1997)
Sport and Fitness Management in Belgium
2. De Lange, P (1998)
The Games Cities Play: The staging of the greatest socio-economic event in the world. The Olympic Games – From Athens 1896 to Athens 2004.
3. Kroon, J (1990)
Algemene Bestuur (2nd edition)
Haum-Tertiary
4. Leonard, WM (1993)
A Sociological Perspective of Sport (4th edition)
MacMillan
5. Oosthuizen, PPJ (2001)
Saamgestelde aantekeninge in Sportbestuur
Universiteit va Pretoria
6. Pistorius, CWI (1989)
Die bestuursproses vir 'n gimnasium
SA Trimgym Aerobic and Fitness Federation & Institute for Sport Research University of Pretoria

SPORTS PRACTITIONERS

COURSE CODE: Part of SGN 802 and SGN 800 (Sports Medicine)

AIM

After completing the 7 study units, the student must be able to communicate with authority on the subjects, as well as to handle specific conditions as indicated.

EMBEDDED KNOWLEDGE

Qualified medical doctor. Actively involved in sport, whether as participant and/or team doctor and/or administrator.

OUTCOMES

a) Critical outcomes

The student must be able to

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made.
- Work effectively with others as a member of a team, group, organisation, community.
- Organise and manage oneself and one's activities responsibly and effectively
- Collect, analyse, organise and critically evaluate information.
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion.
- Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

b) Specific outcomes

The student must be able to:

- Diagnose and handle clinical problems (whether by self or by the necessary referral)
- Speak with authority on sports medical subjects
- Integrate knowledge and apply it in a multi-disciplinary environment

The level of competence required of a student varies from 1 to 4 as explained in the following table:

Theory/Knowledge	Clinical Pictures	Skills list
T1 Nice to know	C1 Recognise or place	S1 Only theory
T2 Of some relevance	C2 Tentative diagnosis	S2 Theory and seen or have demonstrated
T3 Advisable to know	C3 Diagnose and refer	S3 Apply/perform (under supervision)
T4 Essential knowledge for future clinical practice/to achieve the outcome	C4 Diagnose and treat	S4 Routine performance

STUDY UNITS**STUDY UNIT 1: MUSCLE CRAMPS**Level Sub-outcomes

- T4 Know applicable theoretical information, including the physiological background and possible causes
- C4 Apply the principles of handling muscle cramps, both prophylactically and in the acute phase.

STUDY UNIT 2: HEIGHT ABOVE SEA LEVELLevel Sub-outcomes

- T4 Theoretical knowledge on the subject, including:
- Definitions
 - Epidemiology
 - Acclimatisation
 - Associated medical conditions
 - Acute mountain sickness
 - Cerebral edema
 - Pulmonal edema
 - Chronic mountain sickness
 - Subacute mountain sickness
- C3 Correct diagnosis and references of altitude sickness
- T4 To formulate and implement a plan of handling
- Individuals
 - Teams
- T3 Altitude training

STUDY UNIT 3: HYPERBARIC PRESSURE (DEPTH UNDER WATER)Level Sub-outcomes

- T4 Theoretic knowledge on the subject, including
- Physiology
 - Epidemiology
 - Associated medical conditions:
 - Ototrauma
 - Bends disease
 - Contra-indications for scuba diving
- C3 Correct diagnosis of compression illness
- S2 Decompression

STUDY UNIT 4: CHILDREN IN SPORT**4.1 Handling of musculo-skeletal conditions**Level Sub-outcomes

- T4 Anatomical differences between adult and growing bone
- Acute fracture
- Shoulder pain
- Elbow pain
- Wrist pain
- Back pain and postural abnormalities
- Hip pain
- Knee pain
- Foot pain

The assessment level C3/C4 will be applicable for diagnosis and S3/C4 for the handling of all the above-mentioned clinical pictures

4.2 Children with chronic illnessLevel Sub-outcomes

- C4 Asthma
- Epidemiology
 - Pathology

- Special investigations
- Management
- C2 Cystic fibrosis
 - Epidemiology
 - Pathology
 - Special investigations
 - Management
- C4 Diabetes Mellitus
 - Epidemiology
 - Pathology
 - Special investigations
 - Management
- C3 Hemophilia
 - Epidemiology
 - Pathology
 - Special investigations
 - Management
- C3 Epilepsy
 - Epidemiology
 - Pathology
 - Special investigations
 - Management

4.3 Exercise guides for children

Level Sub-outcomes

- T4 Physiological composition of children
- T4 Aerobic vs. Anaerobic exercise programmes
 - Age of onset
 - Advantages and disadvantages
 - Frequency/duration/intensity
- T4 Effective communication with trainers and parents on how much is too much

STUDY UNIT 5: THE AGED AND EXERCISE

5.1 Tissue change due to aging

Level Sub-outcomes

- T4 Changes in muscle
- T4 Changes in bone mass
- T4 Cardiovascular fitness
- T4 Changes in metabolism

5.2 Advantages of exercise in the aged

Level Sub-outcomes

- T4 Risk of exercise
- S3 Exercise guidelines
 - Frequency/duration/intensity
 - Type of exercise (Aerobic vs resistance exercise)

5.2 The use of medicine in the older athlete

Level Sub-outcomes

- T4 B-blockers
- T4 Diureticum
- T4 Other cardiac medicines
- T4 NSAID's
- T4 Anxioliticums
- T4 Insulin and oral hypoglycemic medicines

All the above-mentioned must be explained in consideration of the pharmaco-dynamics and effect on the older athlete's achievement.

STUDY UNIT 6: CHEST WALL SYNDROME

<u>Level</u>	<u>Sub-outcomes</u>
T4	Differential diagnosis, including <ul style="list-style-type: none"> - CVS - Respiratory system - GIT
T4	Special examinations applicable
C3	Management and referral

STUDY UNIT 7: THE TIRED ATHLETE

7.1 Over training syndrome

<u>Level</u>	<u>Sub-outcomes</u>
T4	Development of over training syndrome
C4	Effects of over training
S4	Monitoring of over training
T4	Prevention of over training

7.2 Other causes

<u>Level</u>	<u>Sub-outcomes</u>
C4	Complete history <ul style="list-style-type: none"> - Exercise logbook - Psychological - Dietary logbook - Medical causes
S4	Complete examination
T4	Differential diagnosis, including: <ul style="list-style-type: none"> - Viral disease - Nutritional shortages/imbbalances

STUDY UNIT 8: PRACTICAL SPORTS MEDICINE

8.1 Accompany a Sports Team

<u>Level</u>	<u>Sub-outcomes</u>
S4	Preparation <ul style="list-style-type: none"> - Information on e.g. jet lag - Medical evaluation of team members - Medical bag (see 8.2)
C4	Illnesses <ul style="list-style-type: none"> - Traveler's diarrhoea - Upper respiratory tract infection
C4	Injuries <ul style="list-style-type: none"> - Differences regarding sports type - Prevention - Management
C4	Drug testing

8.2 The Medical Bag

<u>Level</u>	<u>Sub-outcomes</u>
S4	Contents of the medical bag <ul style="list-style-type: none"> - Tablets, injectables - Bandages - Splints, orthotics - Equipment

8.3 Sports Medicine PracticeLevel Sub-outcomes

- T4 Multidisciplinary service existing of
- Doctor
 - Physiotherapist
 - Biokineticist
 - Podiatrist
 - Psychologist
 - Dietician
- S2 Specific procedures e.g. Soft tissue sonar
- S4 Determining of compartment pressure

8.4 StrappingLevel Sub-outcomes

Application of plasters or bandages for specific injuries or prophylactically, including:

- S4 Ankle ligaments
- S3 Achilles tendon
- S4 Knee ligaments
- S3 Shoulder
- S4 AC ligament
- S4 Fingers

STUDY UNIT 9: PODIATRIC EVALUATIONLevel Sub-outcomes

- S3 Biomechanic evaluation of the lower limb
- S2 Shoe review
- T3 Different shoes available, including neutral / anti-pronation
- T3 Orthoses

STUDY UNIT 10: DIVERSE SPORTSLevel Sub-outcomes

- T4 Rugby
- T4 Netball
- T3 Swimming
- T4 Hockey
- T4 Soccer
- T3 Squash
- T4 Tennis
- T4 Golf
- T4 Athletics
- T4 Road running
- T4 Cycling
- T3 Martial arts
- T3 Wrestling
- T3 Extreme sports

ASSESSMENT CRITERIA

All above-mentioned study units will be evaluated by means of

Self-assessment:

Self-study of the subjects, not only from prescribed text books, but also from most recent articles.

Seminars

Co-students:

Discussions among each other during contact time in February/May/

August/September.

Examinations:

- Theory
- Orals
- Case studies
- OSCE

REFERENCESBooks (most recent publications)

2. Clinical Sports Medicine
Bruckner & Khan
McGraw Hill
3. Clinical Sports Medicine
Frontera, Herring, Micheli & Silver
Saunders Elsevier
4. Oxford Textbook of Sports Medicine
Harries et al
Oxford University Press

Journals

1. Clinical Journal of Sports Medicine
2. Physician and Sports Medicine
3. Sports Medicine
4. American Journal of Sports Medicine
5. Medicine and Science in Sports and Exercise
6. British Journal of Sports Medicine
7. International Journal of Science and Medicine in Sport
8. Australian Journal of Science and Medicine in Sport
9. Journal of Sport Rehabilitation
10. Journal of Orthopaedic and Sports Physical Therapy
11. Sports Medicine, Training and Rehabilitation
12. Journal of Orthopaedic and Sports Physical Therapy
13. Sports Medicine, Training and Rehabilitation
14. Journal of Sports Sciences
15. Journal of Bone and Joint Surgery
16. International Journal of Sports Nutrition

Internet

1. www.sportex-medicine.com
2. www.acsm.org
3. www.sportsci.org

SURGICAL DISCIPLINES

COURSE CODE: Part of SGN 802 and 800 (Sports Medicine)

AIM

After completing the 7 study units, the student must be able to communicate with authority on the subjects, as well as to handle specific conditions as indicated.

EMBEDDED KNOWLEDGE

Qualified medical doctor. Actively involved in sport, whether as participant and/or team doctor and/or administrator.

OUTCOMES

a) Critical outcomes

The student must be able to:

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made
- Work effectively with others as a member of a team, group, organisation, community
- Organise and manage oneself and one's activities responsibly and effectively
- Collect, analyse, organise and critically evaluate information
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion
- Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

b) Specific outcomes

The student must be able to:

- Diagnose and handle clinical problems (whether by self or by the necessary referral)
- Speak with authority on surgical disciplines.
- Integrate knowledge and apply it in a multi-disciplinary environment.

The level of competence required of a student varies from 1 to 4 as explained in the following table:

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STUDY UNITS**STUDY UNIT 1: SHOCK AND CARDIOPULMONARY RESUSCITATION**Level Sub-outcomes

C4 Managing the sports person who needs CPR

STUDY UNIT 2: ABDOMINAL INJURIESLevel Sub-outcomes

C3 Correct diagnosis and referral

STUDY UNIT 3: CHEST INJURIESLevel Sub-outcomes

C3 Correct diagnosis and referral

STUDY UNIT 4: UROGENITAL TRAUMALevel Sub-outcomes

C3 Correct diagnosis and referral

STUDY UNIT 5: THE SPORTSMAN AND ORGAN TRANSPLANTSLevel Sub-outcomes

T3 Physiological changes

T3 Side-effects

T3 Medication

T3 Possible complications

T3 Treatments

STUDY UNIT 6: HEAD INJURIES AND THE SPORTSMANLevel Sub-outcomes

C3 Pathological changes

C3 Diagnosis

C3 Management

STUDY UNIT 7: FACIAL INJURIESLevel Sub-outcomes

C3 Soft tissue injuries/lacerations

- Face and scalp (KGM)

- Eye

- Ear

- Oral cavity (KGM)

- Pharynx

Hard tissue injuries/fractures (KGM)

- Mandibula

- Mid-third face

- Upper-third face

- Nose and Naso-ethoidal

- Orbitae

- Teeth

ASSESSMENT CRITERIA

All above-mentioned study units will be evaluated by means of

1. Self-assessment:

Self-study of the subjects, not only from prescribed textbooks, but also from most recent articles.
Seminars

2. Co-students:

Discussions among each other during contact time in February/May/
August/September.

3. Examinations:

Theory

Orals

PATIENT LIST

(This form is available electronically)

STUDENT _____

STUDENT NO _____

Keep a list of all sports- and exercise medicine patients that you treat. The minimum requirement is 80 patients over 2 years.

No.	Diagnose/diagnosis	Datum/date
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PATIENT STUDIES

(This form is available electronically)

STUDENT _____

STUDENT NO _____

YEAR _____

Keep this list updated for all patient reports handed in. The number of the patient on the list must correspond with the patient report that is handed in. Eight patient reports must be handed in per year.

No.	Diagnose/diagnosis	Datum/date
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6.		
7.		
8.		

PATIENT STUDY REPORT
(This form is available electronically)

Patient reports must be 3-4 pages of font 12, single spacing, or 4-6 pages of 1.5-line spacing

STUDENT _____

STUDENT NO _____

PATIENT NO _____

(Must correspond with patient number on patient list)

Diagnosis _____

Date _____

Patient details	Age Gender
Complaint	
Further history: (medical, family, exercise, nutrition, etc.)	
Clinical examination	
Special investigations (including biomechanical evaluation, shoes, x- rays, ECG, etc.)	

Summary	1. Clinical
	2. Personal
	3. Contextual
Problem list formulation	1. Active
	2. Passive
Plan	
Progression	
Discussion (2-4 pages)	

Learning experience and conclusion	

REPORT OF ELECTIVE CLINICAL WORK

(This form is available electronically)

DESCRIPTION OF PRACTICE/EVENT:
DETAILS OF DUTIES:
PLANNING AND PREPARATION:
REPORT: Number of clinical contacts, type, management, overall outcome of event
LEARNING EXPERIENCES: Clinical, management, other.

