

FACULTY OF AGRICULTURE, ENGINEERING  
& NATURAL SCIENCES

**School of Military Science**



**UNAM**  
UNIVERSITY OF NAMIBIA



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**FACULTY OF AGRICULTURE,  
ENGINEERING & NATURAL SCIENCE**

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**SCHOOL OF MILITARY SCIENCE**

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## NOTE

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Regulations and curricula for 2023 may be amended without prior notice. General regulations and information appear in the **General Information and Regulations and Fees Prospectus**.

Although the information contained in this School prospectus has been compiled as accurately as possible, Council and Senate accept no responsibility for any errors and omissions, which may occur. The University retains the right to amend any regulation or condition without prior notice.

The information is correct up to 30 October 2022.

The fact that particulars of a specific course or field of study have been included in this School Prospectus does not necessarily mean that such programme, subject, or course will be offered in 2023 or any consecutive year.

This School Prospectus must be read in conjunction with the **General Information and Regulations and Fees Prospectus**.

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## CONTENTS

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<b>NOTE</b>	<b>2</b>
<b>CONTENTS</b>	<b>3</b>
<b>SCHOOL PREAMBLE</b>	<b>6</b>
<b>ACADEMIC YEAR 2023</b>	<b>7</b>
<b>DUE DATES FOR THE 2023 ACADEMIC YEAR</b>	<b>8</b>
<b>A. STRUCTURE AND PERSONNEL OF THE FACULTY</b>	<b>9</b>
<b>A.1. OFFICE OF THE EXECUTIVE DEAN</b>	<b>9</b>
<b>B. STRUCTURE AND PERSONNEL OF THE SCHOOL</b>	<b>9</b>
<b>B.1. OFFICE OF THE ASSOCIATE DEAN</b>	<b>9</b>
<b>B.2. ACADEMIC DEPARTMENTS</b>	<b>11</b>
<b>C. QUALIFICATIONS OFFERED BY THE SCHOOL</b>	<b>12</b>
<b>C.1. UNDERGRADUATE PROGRAMMES</b>	<b>12</b>
<b>C.2. POSTGRADUATE PROGRAMMES</b>	<b>12</b>
<b>C.3. GENERAL REGULATION PERTAINING TO UNDERGRADUATE STUDIES</b>	<b>13</b>
C.3.1. DURATION OF STUDY	13
C.3.2. EXEMPTIONS	13
C.3.3. CLASS ATTENDANCE	13
C.3.4. PRACTICALS	13
C.3.5. CURRICULUM	13
C.3.6. COURSES, CREDITS AND CONTACT HOURS	13
C.3.7. CURRICULUM COMPILATION	13
<b>C.4. STUDENT REGISTRATION</b>	<b>13</b>
C.4.1. UNIVERSITY CORE CURRICULUM	13
C.4.2. UNIVERSITY CORE CURRICULUM COURSE DESCRIPTIONS	14
C.4.3. SERVICE COURSES FROM SCHOOL OF SCIENCE	20
C.4.4. POSTGRDUATE PROGRAMME SERVICE MODULES	23
<b>D. DEPARTMENT OF AERONAUTICS AND ASTRONAUTICS</b>	<b>24</b>
<b>D.1. DEPARTMENTAL REGULATIONS</b>	<b>24</b>
D.1.1. ADMISSION REQUIREMENTS	24
D.1.2. ARTICULATION OPTIONS	25
D.1.3. DURATION OF STUDY	25
D.1.4. MODE OF DELIVERY	25
D.1.5. ASSESSMENT CRITERIA	25
D.1.6. QUALITY ASSURANCE ARRANGEMENTS	25
D.1.7. RE-ADMISSION REGULATIONS	26

D.1.8.	ADVANCEMENT AND PROGRESSION RULES	26
D.1.9.	REQUIREMENTS FOR QUALIFICATION AWARD	26
D.1.10.	CAREER OPPORTUNITIES	27
<b>D.2.</b>	<b>BACHELOR OF SCIENCE IN AERONAUTICAL SCIENCE HONOURS TABLE FOR ALL MODULES</b>	<b>27</b>
<b>D.3.</b>	<b>BACHELOR OF SCIENCE IN AERONAUTICAL SCIENCE HONOURS 34BSAS COURSE DESCRIPTIONS</b>	<b>29</b>
<b>E.</b>	<b>DEPARTMENT OF MILITARY STUDIES</b>	<b>38</b>
<b>E.1.</b>	<b>REGULATION PERTAINING TO UNDERGRADUATE STUDIES</b>	<b>38</b>
E.1.1.	ADMISSION REQUIREMENTS	38
E.1.2.	ARTICULATION OPTIONS	38
E.1.3.	DURATION OF STUDY	38
E.1.4.	MODE OF DELIVERY	39
E.1.5.	ASSESSMENT CRITERIA	39
E.1.6.	QUALITY ASSURANCE ARRANGEMENTS	39
E.1.7.	RE-ADMISSION REGULATIONS	39
E.1.8.	ADVANCEMENT AND PROGRESSION RULES	40
E.1.9.	REQUIREMENTS FOR QUALIFICATION AWARD	40
E.1.10.	CAREER OPPORTUNITIES	40
E.1.11.	BACHELOR OF SCIENCE IN MILITARY GEOGRAPHY TABLE FOR ALL MODULES	41
E.1.12.	BACHELOR OF SCIENCE IN MILITARY GEOGRAPHY COURSE DESCRIPTIONS	43
<b>E.2.</b>	<b>POSTGRADUATE PROGRAMMES</b>	<b>48</b>
E.2.1.	POSTGRADUATE DIPLOMA IN SECURITY AND STRATEGIC STUDIES -1 YEAR FULL-TIME	48
E.2.2.	ADMISSION REQUIREMENTS	48
E.2.3.	ADDITIONAL ADMISSION	48
E.2.4.	DURATION OF STUDY	48
E.2.5.	MODE OF DELIVERY	48
E.2.6.	ASSESSMENT CRITERIA	48
E.2.7.	MINIMUM REQUIREMENTS FOR RE-ADMISSION INTO THE SCHOOL/PROGRAMME	48
E.2.8.	ADVANCEMENT AND PROGRESSION RULES	49
E.2.9.	REQUIREMENTS FOR QUALIFICATION AWARD	49
E.2.10.	ARTICULATION ROUTES	49
E.2.11.	POSTGRADUATE DIPLOMA IN SECURITY AND STRATEGIC STUDIES TABLE OF ALL MODULES	49
E.2.12.	POSTGRADUATE DIPLOMA IN SECURITY AND STRATEGIC STUDIES MODULE DESCRIPTIONS	50
<b>E.3.</b>	<b>MASTER OF SECURITY AND STRATEGIC STUDIES</b>	<b>53</b>
E.3.1.	ADMISSION REQUIREMENTS	53
E.3.2.	ADDITIONAL SELECTION CRITERIA	53
E.3.3.	DURATION OF STUDY	53
E.3.4.	MODE OF DELIVERY	53
E.3.5.	ASSESSMENT CRITERIA	53
E.3.6.	MINIMUM REQUIREMENTS FOR RE-ADMISSION INTO THE SCHOOL/PROGRAMME	53
E.3.7.	ADVANCEMENT AND PROGRESSION RULES	54
E.3.8.	REQUIREMENTS FOR QUALIFICATION AWARD	54
E.3.9.	ARTICULATION ROUTES	54
E.3.10.	MASTER OF SECURITY AND STRATEGIC STUDIES TABLE OF ALL MODULES	54
E.3.11.	MASTER OF SECURITY AND STRATEGIC STUDIES MODULE DESCRIPTOR	55
<b>F.</b>	<b>DEPARTMENT OF NAUTICAL SCIENCE</b>	<b>58</b>
<b>F.1.</b>	<b>ADMISSION REQUIREMENTS</b>	<b>58</b>
F.1.1.	RE-ADMISSION REGULATIONS	59
F.1.2.	ADVANCEMENT AND PROGRESSION RULES	59
F.1.3.	ARTICULATION OPTIONS	59

F.1.4.	ASSESSMENT CRITERIA	59
F.1.5.	REQUIREMENTS FOR QUALIFICATION AWARD	59
F.1.6.	CAREER OPPORTUNITIES	59
F.1.7.	BACHELOR OF SCIENCE IN NAUTICAL SCIENCE TABLE FOR ALL MODULES	60
F.1.8.	BACHELOR OF SCIENCE IN NAUTICAL SCIENCE COURSE DESCRIPTIONS	62
<b>OLD CURRICULUM</b>		<b>67</b>
<b>G. OLD UNDERGRADUATE PROGRAMMES AND POSTGRADUATE PROGRAMMES</b>		<b>68</b>
<b>G.1.</b>	<b>BACHELOR OF SCIENCE IN MILITARY SCIENCE (ARMY) HONOURS</b>	<b>69</b>
G.1.1.	BACHELOR OF SCIENCE IN MILITARY SCIENCE (ARMY) HONOURS TABLE OF EQUIVALENCES	71
<b>G.2.</b>	<b>BACHELOR OF SCIENCE IN MILITARY SCIENCE (AERONAUTICAL) HONOURS</b>	<b>72</b>
G.2.1.	BACHELOR OF SCIENCE IN MILITARY SCIENCE (AERONAUTICAL) HONOURS TABLE OF EQUIVALENCES	74
<b>G.3.</b>	<b>BACHELOR OF SCIENCE IN MILITARY SCIENCE (NAUTICAL) HONOURS</b>	<b>76</b>
G.3.1.	BACHELOR OF SCIENCE IN MILITARY SCIENCE (NAUTICAL) HONOURS TABLE OF EQUIVALENCES	78
<b>G.4.</b>	<b>POSTGRADUATE DIPLOMA IN SECURITY AND STRATEGIC STUDIES 21PDSS</b>	<b>79</b>
G.4.1.	POSTGRADUATE DIPLOMA IN SECURITY AND STRATEGIC STUDIES TABLE OF EQUIVALENCES	80
<b>G.5.</b>	<b>MASTER OF ARTS IN SECURITY AND STRATEGIC STUDIES</b>	<b>81</b>
G.5.1.	MASTER OF ARTS IN SECURITY AND STRATEGIC STUDIES TABLE OF EQUIVALENCES	82

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## SCHOOL PREAMBLE

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### Vision

The vision of the **School of Military Science** is to be a Centre of Excellence in developing knowledge and expertise in the fields of military history and military law, aeronautical science, nautical science and security and strategic studies in Namibia and the SADC Region.

### Mission

The **School of Military Science** is mandated to equip graduates with requisite skills and offer solid preparation for professional careers in military leadership as well as in public environment in the areas of commanding, analysis, research, consulting and analysis in the defence and national security.

The school fulfils the following functions in order to carry out its mandate:

- equip graduates with appropriate knowledge and skills and prepare them for a variety of careers according to national, regional and international needs
- carry out innovative research and disseminate knowledge that will benefit the national, regional and international contexts
- encourage growth in the adoption and use of contemporary military and civilian techniques and technologies for the benefit of the Namibian Defence Force
- provide variety of research and advisory services to the Ministry of Defence
- foster relationships with the stakeholders and industrial partners
- contribute to the social and economic development of Namibia

## ACADEMIC YEAR 2023

<b>FIRST SEMESTER:</b>	
12 January	University Opens
24 January	Academic staff resumes office duties
30 January	Lectures commence for CORE SEMESTER – New Curriculum Students) (Until 3 March)
15 February	Lectures commence for FIRST SEMESTER – Old Curriculum Students (Until 17 May)
06 March	Lectures commence for FIRST SEMESTER – New Curriculum Students (Until 7 June)
04 May	Long Week for students commence (Until 7 May)
08 May	Classes resume after long weekend
17 May	Lectures end for the FIRST SEMESTER – Old Curriculum Students
22 May	First opportunity examinations commence – Old Curriculum Students (Until 9 June)
7 June	Lectures end for the SEMESTER 1– New Curriculum Students
9 June	First opportunity examinations end – Old Curriculum Students
12 June	First opportunity examinations commence – New Curriculum Students (Until 23 June)
12 June	Second opportunity examinations commence – Old Curriculum Students (Until 27 June)
23 June	First opportunity examinations end – New Curriculum Students
26 June	Second opportunity examinations commence – New Curriculum Students (Until 5 July)
27 June	Second opportunity examinations end – Old Curriculum Students
05 July	Second opportunity examinations end – New Curriculum Students
07 July	End of first semester
10 July – 14 July	Mid-year Break

<b>SECOND SEMESTER</b>	
19 July	Lectures commence for SECOND SEMESTER – Old curriculum Students (until 13 October)
24 July	Lectures commence for SECOND SEMESTER – New Curriculum Students (until 20 October)
04 September	Second semester BREAK starts for New Curriculum Students (Until 10 September)
06 September	Second semester BREAK starts for Old Curriculum Students (Until 10 September)
08 September	Institutional Holiday
11 September	Lectures resume after second semester break
13 October	Lectures end for SECOND SEMESTER – Old Curriculum Students
18 October	First opportunity examinations commence – Old Curriculum Students (Until 7 November)
20 October	Lectures end for SECOND SEMESTER – New Curriculum students
26 October	First opportunity examinations commence – New Curriculum Students (Until 10 November)
07 November	First Opportunity Examinations end – Old Curriculum Students
08 November	Second Opportunity Examinations commence – Old Curriculum Students (Until 24 November)
10 November	First Opportunity Examinations end – New Curriculum Students
13 November	Second opportunity examinations commence – New Curriculum Students (Until 24 November)
24 November	Second Opportunity Examinations end
01 December	End o SECOND SEMESTER
15 December	End of ACADEMIC YEAR
12 January 2024	University opens (2024 academic year)
24 January 2024	Academic staff resumes office duty



## DUE DATES FOR THE 2023 ACADEMIC YEAR

DATE	GENERAL DATES
20 January	Last day for registration of senior students – Faculty of Health Sciences and Veterinary Medicine
31 January	Last day for appeals (Semester 2 and Double modules of Regular and Supplementary/Special examinations of November 2022)
03 February	Last day for application of retention of continuous assessment (CA) mark and to sit for Promotional Examinations Last day for late registration of new curriculum students (Late fee payable)
08 February	Last day for schools to approve the retention of continuous assessment (CA) mark and promotional examination applications
10 February	Last day for application of module(s) exemptions – New Curriculum Students
17 February	Last day for registration of senior students (Late fee payable) Last day for application of module(s) exemptions – Senior Students Last day for approval of module(s) and qualification changes – Senior Students
22 February	Promotion Examination
24 February	Last day for approval of module(s) exemptions – New Curriculum Students
10 March	Last day for approval of module(s) exemptions – Senior Students
12 April	Last day to change offering types and examinations centres – distance students
30 April	Last day to submit thesis for the October 2024 graduation
04 August	Last day for appeals (First and second opportunity examinations of the First Semester 2023)
31 August	Last day to submit outstanding documentation
12 September	Last day to change offering types and examinations centres – distance students
31 October	Last day to submit thesis for the April 2024 graduation
DATE	CANCELLATION DUE DATES
28 April	Last day to cancel Semester 1 modules
29 September	Last day to cancel Semester 2 modules
29 September	Last day to cancel Double modules (module that extends over one academic year)
DATE	FINANCE DUE DATES
6 February	Last day to cancel Core Semester modules with 100% credit
15 February	Last day to cancel Core Semester modules with 50% credit
1 March	Last day to cancel Semester 1 and year modules with 100% credit – Old Curriculum Students
20 March	Last day to cancel Semester 1 and year modules with 100% credit – New Curriculum Students
29 March	Last day to cancel Semester 1 modules with 50% credit – Old Curriculum Students
17 April	Last day to cancel Semester 1 modules with 50% credit – New Curriculum Students
7 July	Last day to cancel year modules with 50% credit – Old and New Curriculum Students
2 August	Last day to cancel Semester 2 modules with 100% credit – Old Curriculum Students
9 August	Last day to cancel Semester 2 modules with 100% credit – New Curriculum Students
1 September	Last day to cancel Second Semester modules with 50% credit – All Students

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## A. STRUCTURE AND PERSONNEL OF THE FACULTY

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### A.1. OFFICE OF THE EXECUTIVE DEAN

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#### EXECUTIVE DEAN

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## B. STRUCTURE AND PERSONNEL OF THE SCHOOL

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### B.1. OFFICE OF THE ASSOCIATE DEAN

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#### ASSOCIATE DEAN

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## B.2. ACADEMIC DEPARTMENTS

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Senior Lecturer: Dr. R. O Iroanya: B. Sc, (Nnamdi Azikiwe University, Awka, Nigeria); BA. (Hons)(University of Pretoria, MSocSci, EHES, Paris); &(MASci, Linköping University, Sweden); (MSS), (University of Pretoria, PhD (University of Pretoria, South Africa)

Lecturer: Dr. S Ndapulamo: DLGS (UNAM), BPMM (Hons.) (UNAM), MPA (UNAM), PhD (University of South Africa)

Lecturer: Dr. L. V. Shaamhula: Bsc Population Studies and Geography (UNAM), MA (Northwest University), PhD (Stellenbosh University).

Lecturer: Ms. M. M. Mpuka: MSc (University of Leicester UK), MPhil (University of Pretoria, SA)

Lecturer: Ms. C. B. Simataa: Bsc (Hons) (UNAM), MSc. (JSS University, India)

Staff Development Fellow: Mr. B. T. Tshelakgosi, Bsc. (Hons) (UNAM)

Staff Development Fellow: Mr. A. Justinu. BSc (Army)(Hons) (UNAM), MA (UNAM)

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Lecturer: Mr. P. Imanuel; PDHE (UNAM); DIP Aviation Safety (IATA); BSc (University Saad Dahlab of Blida (Algeria); MSc (University Saad Dahlab of Blida(Algeria)

Lecturer: Dr W.P.Kiburu; BSc Physics (Hons) (JKUAT, Kenya); MAS (ERAU, USA); PhD (Azteca University,Mexico), DBA(UCN, Nicaragua)

Staff Development Fellow: Mr Sam S Nangolo; BSc. in Military Science (Aeronautical) Honours (UNAM)

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Senior Lecturer: Vacant

Lecturer: Vacant

Lecturer: Mr. A.P. Geyser, BSc. Military Science (SUN, South Africa), MA, Military Geography (SUN, South Africa).

Lecturer: Maj. T. Kathindi BSc (Mi), MSc (National university of science and Technology (Misis)

Staff development fellow: Capt. J.J Claassen; B. Naval Science (NAB)

Staff Development Fellow: Mr. J. Kapiti; BSc. Nautical Science, Honours (UNAM)

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## C. QUALIFICATIONS OFFERED BY THE SCHOOL

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The School may award the following degrees:

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### C.1. UNDERGRADUATE PROGRAMMES

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IN 2023 THE FIRST YEAR STUDENTS WILL REGISTER FOR THE FOLLOWING QUALIFICATIONS

<b>CODE</b>	<b>DEGREE</b>	<b>MINIMUM DURATION</b>
<b>34BSAS</b>	Bachelor of Science in Aeronautical Honours	4 years full-time
<b>34BSMG</b>	Bachelor of Science in Military Geography	3 years full-time
<b>34BSNS</b>	Bachelor of Science Nautical in Science	3 years full-time

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### C.2. POSTGRADUATE PROGRAMMES

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**POSTGRADUATE PROGRAMME**

<b>21 PDSS</b>	Postgraduate Diploma in Security and Strategic Studies	1 year full-time
<b>21 MASS</b>	Master of Security and Strategic Studies	2 years full-time

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### C.3. GENERAL REGULATION PERTAINING TO UNDERGRADUATE STUDIES

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#### C.3.1. DURATION OF STUDY

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All Bachelor of Science degree programmes cannot be completed in less than three (3) years. All Bachelor of Science Honours degree programmes cannot be completed in less than four (4) years. All Bachelor of Science Honours degrees must be completed within six (6) years of full-time study, unless special permission is granted for this period to be exceeded.

#### C.3.2. EXEMPTIONS

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UNAM will give exemptions for equivalent courses taken at other tertiary institutions but the exemptions shall not exceed 50% of the programme of the Bachelor of Science degree. See the General Information & Regulations Prospectus and Fees Prospectus.

#### C.3.3. CLASS ATTENDANCE

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In order to be admitted to examinations, students are required to attend at least **80%** of the lectures and to complete the required elements that make up the continuous assessment mark. Refer to the **General Information and Regulations Prospectus**.

#### C.3.4. PRACTICALS

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Attendance of practical sessions is compulsory.

#### C.3.5. CURRICULUM

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#### C.3.6. COURSES, CREDITS AND CONTACT HOURS

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One contact hour is equivalent to one **(1)** lecture period on the timetable of the School of Military Science.  
A **full semester course** is taught at four **(4)** contact hours per week over one semester, i.e. **56** contact hours per semester.  
A **half - course** is taught at two **(2)** contact hours per week over one semester, i.e. **28** contact hours per semester.  
A **double-course** extends over one academic year at four **(4)** periods per week and terminates in an examination at the end of the year. (For the composition of a curriculum a double module is regarded as equal to two courses)  
Refer to the relevant programmes (to determine the credits and contact hours of any particular course).

#### C.3.7. CURRICULUM COMPILATION

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To be awarded a Bachelor's degree by the School, a student must pass all the courses prescribed for each curriculum combination of all the degree programmes. A student may be required to select the courses offered by a specific department, in accordance with Faculty of Agriculture, Engineering and Natural Sciences and School regulations.

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### C.4. STUDENT REGISTRATION

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#### C.4.1. UNIVERSITY CORE CURRICULUM

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All students register for the following courses:

YEAR	CODE	COURSE NAME
1	U34O3FS	Skills portfolio
1	U3583AL	Academic Literacy I
1	U3420CN	National and Global Citizenship
1	U3583DD	Digital Literacy
1	U3420EM	Ethics and morality
1	U3520LP	LeadershipSkills
2	U3420PJ	Project management
2	U3420RT	Entrepreneurship
2	U3420SE	Sustainability and Environmental Awareness
2	U3520TH	Critical Thinking
2	U3683LB	Academic Literacy II
2	W3600MG	CWIE preparation: 8
3	W37001c	Workplace attachment

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## C.4.2. UNIVERSITY CORE CURRICULUM COURSE DESCRIPTIONS

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### YEAR 1

#### CORE SEMESTER ONE COURSES

U3403FS	SKILLS PORTFOLIO
<b>Module Title:</b>	<b>SKILLS PORTFOLIO</b>
<b>Module Code</b>	U3403FS
<b>NQF Level</b>	4
<b>Notional Hours</b>	N/A
<b>Contact Hours</b>	None
<b>Additional learning requirements</b>	None
<b>NQF Credits</b>	NCB
<b>(Co-requisites)/Pre-requisites</b>	None
<b>Compulsory/Elective</b>	Compulsory
<b>Semester Offered</b>	Core Semester 1
<b>Module Content: UNIT 1: Attitude and Motivation</b>	
Focus on students becoming more aware of their own personal attitudes, behaviors and interests through the self-reflective process. Identify that negatively impact the academics as well as exploring new approaches to dealing with the negative factors. Class attendance and participation, procrastination, self-reliance, discipline, accountability and getting into healthy habits	
<b>UNIT 2: Academic Planning and Goal Setting</b>	
Reassessing needs and values to identify the steps required to reach a personal vision. Proactive approach towards learning, Self-regulated learning, and realistic personal and academic goal setting. Being receptive to learning and exploring who you are and who you could become through the development of greater knowledge and awareness about yourself.	
<b>UNIT 3: Learning styles</b>	
Focusing on understanding the students' personal approach to learning through the introduction to different learning styles, the dynamics of the learning process, preferred learning styles and strategies that describe and strengthen their learning style.	
<b>UNIT 4: Study Methods and Skills</b>	
Creating healthy study habits, learning styles and techniques, effective study methods and skills including note taking, memory and reading, public speaking, and critical thinking. Identify ways to avoid procrastination	
<b>UNIT 5: Time Management</b>	
The importance of Time Management; using and organizing student time effectively, time as a precious commodity; using and organizing student time effectively, planning, decision making and prioritization, setting boundaries and saying No, building a system and diligently following it.	
<b>UNIT 6: Assessment Preparation</b>	
Basic test taking and Examination preparation, organizing academic workload, setting of daily realistic study goals, use of diagrams and flowcharts, managing and using time effectively during assessment, the importance of staying physically active, the importance of study groups, discipline during examination.	
<b>UNIT 7: Mental well-being</b>	
Understanding mental health in relation to academics, signs and indicators of poor mental health, commonly experienced mental health challenges at UNAM, psychosocial stressors as triggers for mental health problems, perpetuating factors of mental health problems, where and how to seek professional help, coping strategies; for self and others, how to maintain and promote holistic mental wellbeing.	
<b>UNIT 8: Interposal Communication</b>	
Effective communication skills, Verbal and Non-verbal communication, listening skills, problem solving, assertiveness, negotiation skills, practicing empathy in communication, self-confidence, receptiveness to feedback, building trust, teamwork, leadership.	
<b>UNIT 9: Financial matters and management</b>	
Assist students with financial literacy in relation to student life, budgeting, discuss available finance options and assistance, equipping students with skills to seek financial assistance and managing their financial resources.	
<b>UNIT 10: Student Violence</b>	
diverse types of violence that may cause or are intended to cause harm which can be physical, psychological, sexual, verbal or passive in nature. The contrasting individual roles in violence on campuses, the myths, forms, and consequences of violence, and how to stop and prevent violence.	
<b>UNIT 11: Career Planning and Development</b>	
Defining and selecting career goals and exploring different strategies in achieving identified goals, continued soft skills training, decision making, interests, personality, aptitudes, and abilities as one progresses through life.	
<b>Learning and Teaching Strategies/Activities</b>	
<b>Lectures:</b> Presentation on theoretical foundations and concepts of the Skills Portfolio module	
<b>Discussion forums (seminars):</b> Reflecting on own contexts, experiences and sharing perspectives	
<b>Collaborative learning:</b> Group learning and activities	
<b>Inquiry:</b> Carrying out research to explore and understand scenarios and problems relating to self	
<b>Portfolio writing:</b> Writing reflective learning journals related to the Skills Portfolio module	
<b>Presentations and demonstrations:</b> Practical presentation of outcomes of various and skills utilized.	
<b>Student Assessment Strategies</b> Reflective journal/ portfolio	

<b>U3583AL</b>	<b>ACADEMIC LITERACY I</b>
<b>Module Title:</b>	<b>ACADEMIC LITERACY I</b>
<b>Module Code</b>	U3583AL
<b>NQF Level</b>	5
<b>Notional Hours</b>	80
<b>Contact Hours</b>	4 lecture hours per week for one semester
<b>Additional learning requirements</b>	None
<b>NQF Credits</b>	8
<b>(Co-requisites)/Pre-requisites</b>	None
<b>Compulsory/Elective</b>	Compulsory
<b>Semester Offered</b>	Core Semester 1

**Module Content:** The module will cover study skills, reading, listening, speaking and writing, referencing, language usage and text organisation.

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<b>U3420CN</b>	<b>NATIONAL &amp; GLOBAL CITIZENSHIP</b>
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<b>Module Title:</b>	<b>NATIONAL &amp; GLOBAL CITIZENSHIP</b>
<b>Module Code</b>	<b>U3420CN</b>
<b>NQF Level</b>	<b>4</b>
<b>Notional Hours</b>	<b>20</b>
<b>Contact hours</b>	1 lecture hour per week for one semester
<b>Additional Learning Requirements</b>	None
<b>NQF Credits</b>	<b>2</b>
<b>(Co-requisites)/Prerequisite</b>	None (University Core Module)
<b>Compulsory/Elective</b>	Compulsory
<b>Semester Offered</b>	Core Semester 1

**Module Content: UNIT 1: Constitution and its Importance:** What is a constitution; Functions of a constitution; What it contains; Constitution and democracy

**UNIT 2: Global Citizenship:** The meaning of global citizenship; Importance of global awareness; World issues of concern to global citizens.

**UNIT 3: Civic Engagement:** What do we mean by civic engagement; Dimensions of civic engagement; Indicators of civic engagement; Promoting civic engagement. **UNIT 4: Globalization:** Understanding globalization; Cultural construction of neoliberal globalization; Major players; Major domains; Major Issues; Futures of Globalization. **UNIT 5: Intercultural Communication:** Dealing with difference; Levels of culture; Stereotypes and generalizations; Intercultural communication Processes. **UNIT 6: Sustainable Development Goals and individual action:** Introduction to SDGs; Contributing to achievement of SDGs through action.

**Student Assessment Strategies:** Assessment will be based on Continuous Assessment.

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<b>U3420SE</b>	<b>SUSTAINABILITY &amp; ENVIRONMENTAL AWARENESS</b>
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<b>Module Title:</b>	<b>SUSTAINABILITY &amp; ENVIRONMENTAL AWARENESS</b>
<b>Module Code</b>	U3420SE
<b>NQF Level</b>	4
<b>Notional Hours</b>	20
<b>Contact hours</b>	2 lecture hours per week for one semester whereby the first 3 weeks is followed by mini-project for the remainder of the semester (total of 10 hours on this aspect)
<b>Mode of Delivery</b>	Blended: Face to face and Online
<b>Additional Learning Requirements</b>	Mini-project to create awareness, champion environmental cause or address an environmental issue in their immediate environment.
<b>NQF Credits</b>	2
<b>(Co-requisites)/Prerequisite</b>	None
<b>Compulsory/Elective</b>	Compulsory
<b>Semester Offered</b>	Core Semester 1

Continuous assessment of **100%** - Assessment will be done by completing online pop-up quizzes; and developing their online portfolios of personal action as response to tasks assigned in class.

**Module Content:Sustainability:** finite nature of elements constituting the Earthly environment, resilience and fragility of the natural environment; three distinct perspectives on sustainability: sustained yield of resources, sustained abundance and diversity of species and ecosystems, sustained economic and social development key themes in defining sustainability: (i) the human perspective, (ii) considerations of fairness and (iii) issues of scale concepts of inter- and intra-generational equity (fair and just distribution of resources), sustainable community. **Natural resources:** role of soil, water and minerals in supporting life on Earth; health and interdependence of ecosystems within the biosphere; dependence of human beings on natural resources for sustenance and livelihoods; **Solutions to environmental sustainability challenges:** simple inexpensive interventions aimed at reducing wastage of resources and generation of wastes through exhaustive use, reuse, recycling and refurbishing of products.

**Student Assessment Strategies :**The module will be evaluated using 100% continuous assessment. Student will be assessed based on class discussions and debates on striking a balance between socio-economic development and environmental sustainability citing real life major national projects. Students will be placed in groups based on a logical criterion that ensures mixing interspersing of students from academic discipline and programmes in each group. Groups will be expected to take on a particular environmental issue plaguing their immediate surroundings to highlight and champion. Each group will tackle one issue



through either clean-up campaigns, awareness raising campaigns, community education campaigns, advocacy or devising a simple solution to the problem. A minimum pass mark for the module is 50%.

U3583DD	DIGITAL LITERACY
<b>Module Title:</b>	<b>DIGITAL LITERACY</b>
<b>Module Code</b>	U3583DD
<b>NQF Level</b>	5
<b>Notional Hours</b>	80
<b>Contact hours</b>	4 Lecture hours per week for one semester
<b>Additional Learning Requirements</b>	None
<b>NQF Credits</b>	8
<b>(Co-requisites)/Prerequisite</b>	None
<b>Compulsory/Elective</b>	Compulsory
<b>Semester Offered</b>	Core Semester 1

**Module Content:**  
**Digital Proficiency:** ICT-based devices (laptops, tablets, smartphones, desktop computers, digital instruments and equipment); a mouse, keyboard, touch screen, voice control and other forms of input; screens, audio headsets and other forms of output; digital capture devices; University digital learning systems and a range of personal digital services such as social media, cloud storage services, sharing sites. **Digital Productivity:** Basic productivity software (text editing, presentation, spreadsheets, image editing); email and other digital communication services; Internet or cloud or institutional shared spaces for Organising, managing and backing up digital files; software/apps and services suitable for learning-related tasks; digital tools fit learning and managing learning time. **Information Literacy:** search engines, indexes or tag clouds; wikis, blog posts, scholarly journals, e-books and the open web; file spaces and folders, bookmarks, reference management software and tagging; copyright, and digital citizenship issues **Data and Media Literacy:** Digital data using spreadsheets and other media; data security and privacy; digital media messages – text, graphics, video, animation, audio and multimedia. **Digital Creation and Innovation:** digital materials (video, audio, stories, presentations, infographics); new digital tools for learning in digital settings. **Digital Communication, Collaboration and Participation:** digital communication; differences between media, norms of communicating in different spaces; false or damaging digital communications; collaborative tools and online environments; online networks **Digital Learning and Development:** digital learning opportunities; digital learning resources; digital tools/materials for organising, planning and reflecting on learning (mind-mapping, note-taking, e-portfolio/ learning journal/ blog). **Digital Identity and Wellbeing:** online profiles for different networks (personal, professional, academic); digital reputation; managing personal data and privacy; digital CV or portfolio of work; digital technologies for personal development; online etiquette; wellbeing and safety online; internet addiction; cyberbullying and other damaging online behaviour. **Individual assessment tasks:** Assignment: information literacy assignment; Test x 2: **Practical:** Digital proficiency, Data and Media literacy: **No written examination**

## YEAR 2

<b>U3683AL</b>	<b>ACADEMIC LITERACY II</b>
<b>Module Title:</b>	<b>ACADEMIC LITERACY II</b>
<b>Module Code</b>	U3683LB
<b>NQF Level</b>	6
<b>Notional Hours</b>	80
<b>Contact hours</b>	4 lecture hours per week for one semester
<b>Additional Learning Requirements</b>	None
<b>NQF Credits</b>	8
<b>(Co-requisites)/Prerequisite</b>	U3583AL
<b>Compulsory/Elective</b>	Compulsory
<b>Semester Offered</b>	Core Semester 2

**Module Content:** The module is designed for students enrolled in a bachelor's degree, which requires them to do basic research, read and listen to specific academic material, produce specific written texts and give academic presentations. The module thus, focuses on enhancing academic reading, academic vocabulary, writing, listening and speaking.

**Student assessment strategies:** The module will be continuous assessment based. Assessment will include written tests, individual and group assignments, portfolio assessments and oral presentations.

<b>U3420PJ</b>	<b>PROJECT MANAGEMENT SKILLS</b>
<b>Module Title:</b>	<b>PROJECT MANAGEMENT SKILLS</b>
<b>Module Code</b>	U3420PJ
<b>NQF Level</b>	5
<b>Notional Hours</b>	20
<b>Contact hours</b>	2 lecture hours per week for the first two weeks and field-based practical for the remaining four weeks.
<b>Mode of Delivery</b>	Blended: face-to-face and online
<b>Additional Learning Requirements</b>	The field-based practical to be undertaken in the immediate environment of the student.
<b>NQF Credits</b>	2
<b>(Co-requisites)/Prerequisite</b>	None
<b>Compulsory/Elective</b>	Compulsory
<b>Semester Offered</b>	Core Semester 2

**Module Content:** This module consist of two components: **The first component** is a two weeks theory covering the **concepts** (project vs programme) and the **phases of project life cycle ( project initiation and planning:** work breakdown, development of SMART indicators, estimation of activity duration, efforts, and costs, scheduling of activities, identification of critical path, setting of milestones, stakeholder identification and categorization, stakeholder engagement, initial risk identification, and development of the initial project plan; **project implementation & management:** forming the project team, managing people, resources allocation, responsibilities allocation, quality assurance, leadership style and project liaison; **project monitoring and control:** progress reporting and communication, quality control, time management, budget and cost management, risk management and mitigation; **project closure and evaluation:** project evaluation, project auditing process and the closure process, and final project report). **The second component** is a four-week **field-based practical** where students participate in a real-life project in their immediate environment. Students are strictly required to apply the project management approach during the field-based practical.

**Student Assessment Strategies:** Student assessment will be 100% continuous assessment based on weekly project progress reports (50%) and the final project report (50%). A minimum pass mark for the module is 50%.

U3420TH	CRITICAL THINKING
<b>Module Title:</b>	<b>CRITICAL THINKING</b>
<b>Module Code</b>	U3420TH
<b>NQF Level</b>	5
<b>Notional Hours</b>	20
<b>Contact hours</b>	1 hour practical session per week interfaced with limited online engagement
<b>Mode of Delivery</b>	Blended: Face to face and online
<b>Additional learning requirements</b>	None
<b>NQF Credits</b>	2
<b>(Co-requisites)/Prerequisite</b>	None
<b>Compulsory/Elective</b>	Compulsory
<b>Semester Offered</b>	Core Semester 2

**Module Content:**The module will cover: **Definition of critical thinking:** striving for understanding; to have an inquisitive yet open-minded and flexible approach to exploring ideas, the ability to evaluate information and draw clear conclusions based on the evidence at hand. **Core critical thinking skills:** explain, infer, analyse, evaluate, problem solving, self-reflect. **deductive and inductive reasoning:** inductive reasoning- move from the specific to the general, deductive reasoning-moving from the general to specific. **Construction of argument:** construct statements that combine reasoning with evidence to support an assertion or argument. **Problem analysis:** define problem, determine the root causes of problem, develop alternative solutions to problem, implement solution, evaluate outcome. **Reflective learning:** asking open questions, reflect on answers, writing reflective learning essays, thinking about other's answers, asking "why" questions. **Understanding fallacies:** what is a fallacy? description of various fallacies, identifying a fallacy in an argument, explaining a fallacy to an opponent in an argument.

**Student Assessment Strategies:** 100% Continuous assessment (1 reflective learning essay, 1 problem solving activity).

U3420RT	ENTREPRENEURSHIP SKILLS
<b>Module Title:</b>	<b>ENTREPRENEURSHIP SKILLS</b>
<b>Module Code</b>	U3420RT
<b>NQF Level</b>	5
<b>Notional Hours</b>	20
<b>Contact hours</b>	2 lecture hours per week for one semester
<b>Mode of Delivery</b>	Blended: Face to face and online
<b>Additional learning requirements</b>	None
<b>NQF Credits</b>	2
<b>(Co-requisites)/Prerequisite</b>	None
<b>Compulsory/Elective</b>	Compulsory
<b>Semester Offered</b>	Core Semester 2

**Module Content: Definition and scope of entrepreneurship and entrepreneur;** Entrepreneur's environment; Characteristics of entrepreneurs; Basic concepts of entrepreneurship; Forms of entrepreneurship; **The role of entrepreneurship;** The entrepreneurial process; **The entrepreneurial mind set;** Decision-making skills; Creativity, innovation and entrepreneurship; Critical thinking skills; Problem solving skills; Business and personal goal-setting skills; Negotiation skills, Communication skills, Assertiveness skills, Interpersonal skills, Cognitive skills; **Transferable skills,** Practical application of entrepreneurial skills; Starting a new business; Managing a business start-up; Growing an entrepreneurial venture; Marketing skills; Managing people; Record keeping; networking skills; Time management skills; Change management skills; Entrepreneurship success stories in the global context.

**Student Assessment Strategies:** The module will be assessed using 100% continuous assessment.

## YEAR 2

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<b>T3602NS</b>	<b>CWIE PREPARATIONS</b>
<b>Module Title:</b>	<b>CWIE prep</b>
<b>Module Code:</b>	<b>T3602NS</b>
<b>NQF Level:</b>	<b>6</b>
<b>Notional Hours:</b>	<b>80</b>
<b>NQF Credits:</b>	<b>8</b>
<b>Contact Hours:</b>	<b>Up to 2 lectures per week for one semester.</b>
<b>Pre-requisites:</b>	<b>None</b>
<b>Course Assessment:</b>	Continuous assessment (100% of the final mark) consisting of a combination of tests and quizzes, assignments, and a CWIE portfolio. A final mark of 50% is required to pass this course.
<b>Course description:</b>	Professional behaviour, work-readiness, diligence & work ethics. Active searching for a CWIE situation with the aid of UNAM and the School.

## YEAR 3

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<b>W3700IC WORKPLACE ATTACHMENT</b>	
<b>Module Title:</b>	<b>WORKPLACE ATTACHMENT</b>
<b>Module Code:</b>	<b>W3700IC</b>
<b>NQF Level:</b>	<b>7</b>
<b>Notional Hours:</b>	<b>40</b>
<b>Contact hours:</b>	<b>Six (6) weeks in June/July break, 40 hours per week practical sessions = 240 hours</b>
<b>NQF Credits:</b>	<b>24</b>
<b>Prerequisite:</b>	<b>None</b>
<b>Course Assessment:</b>	100% Continuous Assessment made up of Army Service Assessment (10%); Lecturer Assessment (10%); Daily Logbook (30%); Final Report (25%), Presentation (25%).
<b>Course Description:</b>	During this workplace attachment, students will work under Army supervision at a level of soldier rank and will undertake at least six weeks of internship at an appropriate army services for hand-on practical training. Students will maintain a logbook of daily activities and will be required to submit a comprehensive final report for assessment at the beginning of the following semester. During internship, students will be visited at their place by their Lecturers.

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**C.4.3. SERVICE COURSES FROM SCHOOL OF SCIENCE**

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<b>S3511PG</b>	<b>General Physics I</b>
<b>Module Title:</b>	<b>GENERAL PHYSICS I</b>
<b>Module Code</b>	<b>S3511PG</b>
<b>NQF Level</b>	<b>5</b>
<b>Notional Hours</b>	<b>140</b>
<b>Contact Hours</b>	<b>Up to 4 lecture periods per week for one semester. One practical/tutorial session per week for 1 semester.</b>
<b>NQF Credits</b>	<b>14</b>
<b>Pre-requisites</b>	<b>Entry requirements</b>

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**Course Assessment:** Continuous assessment (50% of the final mark) consisting of a combination (or subset) of the following written and/or online assessments: Test(s) and quiz (es) – at least a minimum of 3 hours in total; Assignments – at least a minimum of 3 notional hours in total. Practical reports and tutorial tests – at least 10 notional hours in total; A continuous assessment mark of 40% is required to gain exam admission. One examination with minimum duration of 3-hours (50% of the final mark). A subminimum of 40% in the examination is required to pass, irrespective of the final mark. A final mark of 50% is required to pass this course.

**Course description:** Mechanics: Units, Physical Quantities, and Vectors; Motion Along a Straight Line; Motion in Two or Three Dimensions; Newton's Laws of Motion; Applying Newton's Laws; Work and Kinetic Energy; Potential Energy and Energy Conservation; Momentum, Impulse, and Collisions; Rotation of Rigid Bodies; Dynamics of Rotational Motion; Equilibrium and Elasticity; Fluid Mechanics; Gravitation; Periodic Motion. Waves & Acoustics: Mechanical Waves; Sound and Hearing. Thermodynamics: Temperature and Heat; Thermal Properties of Matter; The First Law of Thermodynamics; The Second Law of Thermodynamics. Practical: Experimental techniques, reading, measuring, uncertainty/error estimation, tabulation of data, graphing, elementary hypothesis verification, practical report writing.

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**S3512PG GENERAL PHYSICS II**

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<b>Module Title:</b>	<b>GENERAL PHYSICS II</b>
<b>Module Code:</b>	<b>S3512PG</b>
<b>NQF Level:</b>	<b>5</b>
<b>Notional Hours:</b>	<b>140</b>
<b>Contact Hours:</b>	<b>Up to 4 lecture periods per week for one semester. One practical/tutorial session per week for 1 semester.</b>
<b>NQF Credits:</b>	<b>14</b>
<b>Pre-requisites:</b>	<b>S3511PG General Physics I)</b>

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**Course Assessment:** Continuous assessment (50% of the final mark) consisting of a combination (or subset) of the following written and/or online assessments: Test(s) and quiz(es) – at least a minimum of 3 hours in total. Assignments – at least a minimum of 3 notional hours in total; Practical reports and tutorial tests – at least 10 notional hours in total. A continuous assessment mark of 40% is required to gain exam admission. One examination with minimum duration of 3-hours (50% of the final mark). A subminimum of 40% in the examination is required to pass, irrespective of the final mark. A final mark of 50% is required to pass this course.

**Course description: Electromagnetism:** Electric Charge and Electric Field; Gauss's Law; Electric Potential; Capacitance and Dielectrics; Current, Resistance, and Electromotive Force; Direct-Current Circuits; Magnetic Field and Magnetic Forces; Sources of Magnetic Field; Electromagnetic Induction; Inductance; Alternating Current; Electromagnetic Waves. Optics: The Nature and Propagation of Light; Geometric Optics; Interference; Diffraction. Modern Physics: Relativity; Photons: Light Waves Behaving as Particles; Particles Behaving as Waves; Quantum Mechanics I: Wave Functions; Quantum Mechanics II: Atomic Structure; Molecules and Condensed Matter; Nuclear Physics; Particle Physics and Cosmology. Practical: More formal error propagation graphical representation of errors, interpreting errors, and their use in elementary hypothesis verification.

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**S3511MC CALCULUS I**

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<b>Module Title:</b>	<b>CALCULUS I</b>
<b>Module Code</b>	<b>S3511MC</b>
<b>NQF Level</b>	<b>5</b>
<b>Notional Hours</b>	<b>120</b>
<b>NQF Credits</b>	<b>12</b>
<b>Prerequisite</b>	<b>None</b>
<b>Contact hours</b>	<b>4 lecture hours + 1 tutorial session per week for one semester</b>
<b>Course Assessment:</b>	Assessment will be based on CA (50%) and formal exam (50%). The CA will be compiled from three written class tests (summative assessment). Those may be supplemented by a suitable take-home assignment (formative assessment) and short online quizzes at the discretion of the lecturer.

**ModuleContent: Theory of functions:** What is a function? Injective, surjective, bijective functions, images and preimages, Operations on functions, inverses, maximal domains, examples, graph transformations; **Sequences and limits:** What is a sequence? Subsequence, boundedness, convergence, Cauchy sequences, limits and their computation, limit of a function approaching a point. **Continuity:** Definition(s) – sequential and epsilon-delta -intermediate value theorem, examples. **Differentiation:** Velocity and acceleration, tangents; definition of the derivative, differentiation and continuity, differentiation rules (sum, product, quotient and chain rules, derivative), the derivatives of polynomial, rational, exponential, trigonometric functions, discussion of a function graph, local extrema, points of inflection, asymptotic behaviour. **Theory of infinite series:** definition, absolute and conditional convergence, examples, comparison test, root and quotient tests. **Power series:** Radius and interval of convergence, Taylor's theorem, Taylor polynomials, Taylor/Maclaurin series expansions of a function at a point; the Taylor series of exponential and trigonometric functions.

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**S3512MC**

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**CALCULUS II**

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<b>Module Title:</b>	<b>CALCULUS II</b>
<b>Module Code</b>	<b>S3512MC</b>
<b>NQF Level</b>	<b>5</b>
<b>Notional Hours</b>	<b>120</b>
<b>Contact hours</b>	<b>4 lecture hours + 2 tutorial hours per week for one semester</b>
<b>Additional learning requirements</b>	<b>None</b>
<b>NQF Credits</b>	<b>12</b>
<b>(Co-requisites)/Prerequisite</b>	<b>None</b>
<b>Compulsory/Elective</b>	<b>Compulsory</b>
<b>Semester Offered:</b>	<b>2</b>

**Module Content: Integration of real valued functions:** Definite and indefinite Riemann integrals, antiderivatives, the Law of Differential Calculus, integrable functions, integration by parts, substitution; the area under a curve, convergence criteria for improper integrals. **Differential calculus in  $\mathbb{R}^p$ :** partial derivatives of real-valued functions, Schwarz's theorem, examples; differentiable functions  $\mathbb{R}^p \rightarrow \mathbb{R}^q$ , the derivative differentiation rules (sum, product, chain rules), directional derivative and gradient. **Taylor expansion:** Local extrema, mean value theorems, Taylor's theorem for real-valued functions, first and second order Taylor formulas. **The Riemann integral over a compact interval in  $\mathbb{R}^p$ :** Definition, examples, Fubini-Tonelli theorem, integrability criteria.

**Student Assessment Strategies:** Continuous assessment (50% of the final mark) consisting of a minimum of 3 (three) tests, And A continuous assessment mark of at least 40% is required for exam admission.

- One examination with minimum duration of 3-hours (50% of the final mark). A subminimum of 40% in the examination is required to pass, irrespective of the final mark. A final mark of 50% is required to pass this course.

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**S3511SF FUNDAMENTALS OF STATISTICS**

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<b>Module Title:</b>	<b>FUNDAMENTALS OF STATISTICS</b>
<b>Module Code:</b>	<b>S3511SF</b>
<b>NQF Level:</b>	<b>5</b>
<b>Notional Hours:</b>	<b>120</b>
<b>Contact Hours:</b>	<b>4 lecture periods per week for one semester. 1 tutorial session per week for 1 semester.</b>
<b>NQF Credits:</b>	<b>12</b>
<b>Pre-requisites:</b>	<b>None</b>
<b>Course Assessment:</b>	Continuous assessment (50% of the final mark) consisting of a combination (or subset) of the following written and/or online assessments: Test(s) and quiz(es) – at least a minimum of 3 hours in total; Assignments – at least a minimum of 3 notional hours in total; Tutorial tests – at least 10 notional hours in total; A continuous assessment mark of 40% is required to gain exam admission. One 3-hour examination (50% of the final mark). A subminimum of 40% in the examination is required to pass, irrespective of the final mark. Continuous Assessment (at least two tests, two tutorial test and two assignments) 50%; Examination 50% (1x3 hour Examination paper). A final mark of 50% is required to pass this course.

**Course Description:** Data types: categorical, continuous, numerical; Measurement scales: Nominal, ordinal, interval, ratio; Data sources: primary, secondary; Descriptive Statistics: graphical (histogram, bar charts, pie charts, frequency polygons, stem-and-leaf plots, box and whiskers plot) and numerical (frequency tables, cross-tabulations) summaries; Identifying outliers; Measures of central tendency; Measures of dispersion; Measure of position; Basic Set Theory, Basic probability concepts: Random variables; Probability distributions: Bernoulli, Binomial, Exponential, Poisson, Normal, Standard Normal.

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**S3532DI INTRODUCTION TO DIGITAL ELECTRONICS**

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<b>Module title:</b>	<b>INTRODUCTION TO DIGITAL ELECTRONICS</b>
<b>Code:</b>	S3532DI
<b>NQF level:</b>	5
<b>Contact hours:</b>	4 lecture hours + 3 practical session per week for one semester.
<b>Credits:</b>	14
<b>Course assessment:</b>	Continuous assessment 50% (Tests and Assignments): Examination 50% (1 x 3 hour examination paper)
<b>Prerequisites:</b>	<b>None</b>

**Module description:** This module covers; Fundamental Digital concepts: Number Systems and Codes; Representation of Numbers in the computer and Computer Arithmetic, different types of Number systems and codes and their conversions; Combinational Logic Analysis and Design: logic gates, Boolean algebra, logic simplification, combinational logic functions (including arithmetic circuits, encoders and decoders, multiplexers and demultiplexers, comparators, parity checkers and generators). Sequential Logic Analysis and Design: Latches, flip-flops, counters, shift registers. Design of Digital Systems. Logic gate circuitry: TTL, CMOS, ECL, logic levels, propagation delay, fan-out, power dissipation, noise margin, logic family interfacing.

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**S3611PE ELECTRONICS**

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<b>Module Title:</b>	<b>ELECTRONICS</b>
<b>Module Code:</b>	<b>S3611PE</b>
<b>NQF Level</b>	<b>6</b>
<b>Notional Hours</b>	<b>160</b>
<b>NQF Credits</b>	<b>16</b>
<b>Contact Hours</b>	<b>Up to 4 lecture periods per week for one semester. One practical/tutorial session per week for 1 semester.</b>
<b>Pre-requisites</b>	<b>(S3512PG: General Physics II)</b>
<b>Module Assessment:</b>	Continuous assessment (100% of the final mark) consisting of a combination (or subset) of tests and/or quizzes assignments, practical and/or project reports and/or presentations and/or designed and built circuits, as part of an assessment portfolio (at least 6 gradable items). Continuous assessment (100% of the final mark) consisting of a combination (or subset) of tests and/or quizzes, data analysis reports, numerical coding assignments, and CAS assignments, as part of an assessment portfolio (at least 6 gradable items). A final aggregate mark of 50% is required to pass this course.

**Module description:** Theory: Semi-conductor theory, intrinsic, p & n type doping, extrinsic semiconductors, conduction processes. Semiconductor diodes and diodes applications, devices transistors, biasing of transistors, load line and the Q-point and its stability; Small signal equivalent circuits and frequency response; p-n-p-n devices, thyristors, diacs and triacs, IC's, logic operation of integrated circuits; Operational amplifier characteristics, Op-amps practical applications, electronic control circuits and feedback concept. Digital circuits, analogue circuits, hybrid (digital plus analogue) circuits; Standard logic functions and gates - AND, OR, NOT, NAND, NOR, XOR, XNOR; truth tables; Boolean theorems; laws and rules; truth tables; Boolean algebra and simplification of basic logic network circuits; Basic combinational logic circuits, flip-flops and their applications. Practical: Soldering, designing, building and testing circuits, using multi-meters and oscilloscopes

S3611PW	WAVES & OPTICS
<b>Module Title:</b>	<b>WAVES &amp; OPTICS</b>
<b>Module Code</b>	<b>S3611PW</b>
<b>NQF Level</b>	6
<b>Notional Hours</b>	160
<b>Contact Hours</b>	4 lecture hours + 1 tutorial per week for one semester.
<b>Additional learning requirements</b>	None
<b>NQF Credits</b>	16
<b>(Co-requisites)/Pre-requisites</b>	(S3511PG, S3512PG)
<b>Compulsory/Elective</b>	Compulsory
<b>Semester Offered</b>	1
<p><b>Module Content:</b> <b>Linear oscillations:</b> Classical SHM; Damped SHM; Driven (forced) SHM). <b>Wave motion:</b> 1D waves; Harmonic waves; Phase &amp; phase velocity; Superposition; Complex representation; Phasors and wave addition; Plane waves; 3D differential wave equation; Spherical waves; Cylindrical waves. <b>Propagation of light:</b> Rayleigh scattering; Reflection &amp; refraction; Fermat's principle. <b>Geometrical Optics:</b> Lenses; Stops; Mirrors; Prisms; Optical systems; Wavefront shaping &amp; adaptive optics; Gravitational lensing. <b>Superposition of waves:</b> Addition of waves of the same and different frequencies. <b>Polarisation:</b> Nature of polarised light; Polarisers; Scattering and polarisation; Polarisation by reflection. <b>Diffraction:</b> Fraunhofer diffraction; Fresnel diffraction. <b>Practical:</b> Mandatory use of word processors and computational tools learned in Fundamentals of Statistical Computing and linear regression and estimating errors on slope (<math>m \pm \sigma_m</math>) &amp; <math>y</math>-intercept (<math>c \pm \sigma_c</math>) to produce practical reports, focus on labs in the field of waves and optics.</p> <p><b>Student Assessment Strategies:</b> Continuous assessment (50% of the final mark) consisting of a combination (or subset) of the following written and/or online assessments: Test(s) and quiz(es) – at least a minimum of 3 hours in total Assignments – at least a minimum of 3 notional hours in total Practical reports – at least 20 notional hours in total A continuous assessment mark of 40% is required to gain exam admission. One examination with minimum duration of 3-hours (50% of the final mark). A subminimum of 40% in the examination is required to pass, irrespective of the final mark. A final mark of 50% is required to pass this course.</p>	

S3601PC	COMPUTER METHODS
<b>Module title:</b>	<b>COMPUTER METHODS</b>
<b>Code:</b>	<b>S3601PC</b>
<b>NQF level:</b>	8
<b>Contact hours:</b>	2 lecture periods per week for one semester. One practical/tutorial session every second week for 1 semester
<b>Credits:</b>	16
<b>Course assessment:</b>	Continuous assessment (100% of the final mark) consisting of a combination (or subset) of tests and/or quizzes, data analysis reports, numerical coding assignments and/or presentations, as part of an assessment portfolio (at least 4 gradable items). A final aggregate mark of 50% is required to pass this course.
<b>Prerequisites:</b>	<b>(S3512PC: Statistical &amp; Numerical Methods in Physics)</b>
<p><b>Module description:</b> This module covers; GNU/Linux: OS; Working set of commands, GUI; Python interactive environments: IPython, Jupyter Notebooks and/or JupyterLab; Intermediate Python; File I/O; Matplotlib &amp; SciPy; Presentation and report writing; Program output; Use self-contained coding and report writing software; Producing publication quality graphs and visualisations; Introduction to automatic referencing systems; Introduction to <math>\LaTeX</math> and Bib<math>\TeX</math>.</p>	

#### C.4.4. POSTGRDUATE PROGRAMME SERVICE MODULES

U3583AL	Academic Writing for Postgraduate Students
<b>Module Title:</b>	<b>Academic writing for Postgraduate Students</b>
<b>Code:</b>	<b>U3583AL</b>
<b>NQF Level:</b>	<b>8</b>
<b>Contact hours:</b>	4 lecture hours per week
<b>Credits:</b>	<b>18</b>
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a minimum of 3 (three) assessments
<b>Examination</b>	<b>50%</b> (3 hours examination paper)
<b>Prerequisites:</b>	None
<p><b>Module description:</b> Empower students with skills and knowledge to access and critique academic sources and to synthesize information from these sources to assist them in the substantiation and development of their own claims when writing academic papers in their respective fields of specialization</p>	



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## D. DEPARTMENT OF AERONAUTICS AND ASTRONAUTICS

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Aeronautical Science focuses on the world of aviation with the emphasis on the technological aspects of both military and civil aviation. The aeronautical science modules have been developed with the needs of active aviation personnel in mind. The focus is on the principals and theories, which provide insight into aspects and issues of current and future importance.

The Namibia's Vision 2030 process called for identification and analysis of the problems the country faced as a nation, and one of the major elements identified as a national issue was of the human resources and, institutional and capacity building (Namibia planning Commission 2021). Namibia National Commission indicated that the demand for qualified human resources, including aviation professionals in Namibia was high; and was to become more intense in the future as a result of projected economic growth. The Aeronautical Science modules in this programme have been designed with the 4th Industrial revolution in mind; and particularly in the aviation industry where safety levels are so high.

The programme addresses the following national Sustainable Development Goals (SDGs):

**No poverty:** The program educational objectives are intended to produce versatile aviation/aerospace graduates who are successful in their chosen career path. The graduates will be able to obtain positions, which require detailed technical knowledge and skills in the operation and management of aircrafts and airports, and hence reducing poverty.

**Quality education:** With outcomes that encompass knowledge, skills and attitudes, and positive participation in local, national and international society. **Climate action:** Aviation industry being a major contributor of greenhouse gases, various concepts aimed at reducing the emission and building climate resilience are explored

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### D.1. DEPARTMENTAL REGULATIONS

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#### D.1.1. ADMISSION REQUIREMENTS

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To qualify for admission to the Bachelor of Science in Aeronautical Science Honours, an applicant shall satisfy the following minimum requirements:

##### **ADMISSION REQUIREMENTS BASED ON NAMIBIAN SCHOOL LEAVING CERTIFICATES 2021 ONWARDS**

**Candidates must be in possession of a valid Namibian Senior Secondary Certificate (NSSC) with EITHER:**

**A pass in five (5) different subjects with:**

- (a) Mathematics and Physics on NSSCAS level with an average "d" or higher;
- (b) 3 subjects on NSSCO level with a C or higher, one of which should be Biology or Chemistry and;
- (c) English must be at minimum C at NSSCO level.

**OR A pass in five(%) different subjects with:**

- (a) 3 subjects on NSSCAS level with an average d or higher; specifically Mathematics & Physics, and, preferably Biology or Chemistry;
- (b) 2 subjects on NSSCO level with a D or higher;
- (c) English must be at minimum C at NSSCO level.

##### **Admission criteria based on Namibian School Leaving Certificates prior to 2021**

Candidates in possession of a valid Namibian Senior Secondary Certificate (NSSC) issued prior to 2021 (only) and has a pass in 5 different subjects, as outlined below, can enroll in the Extended mode of this programme:

**A pass in five different subjects as follows:**

- (a) 2 subjects on higher level (NSSCH) with a 4 or higher;
- (b) 3 subjects on ordinary level (NSSCO) with a C or higher;
- (c) English, Mathematics and Physical Science must be with a minimum C on NSSCO.

**OR A pass in five different subjects as follows:**

- (a) 3 subjects on higher level (NSSCH) with a 4 or higher;
- (b) 2 subjects on ordinary level (NSSCO) with a D or higher;
- (c) additionally, **English, Mathematics and Physical Science** must be with a minimum C on NSSCO.

**OR** Candidates must be Namibian Defence Force (NDF) officers at the rank of 2nd Lt. – Capt. /equivalent. The candidate must be recommended by the Ministry of Defence and Veteran Affairs (MODVA)

##### **Extended enrollment**

Candidate that qualify for admission to the university but lack the appropriate subjects on NSSCAS (or grade) as outlined above for admission to the programme, can opt to enroll for the **Extended mode** which will take one year longer than this programme.

Candidate in possession of a valid Namibian Senior Secondary Certificate (NSSC) issues prior to 2021 (only) and has a pass in 5 different subjects, as outlined below can enroll in the Extended mode of this program under the following conditions:

**A pass in five (5) different subjects with:**

- (a) Two (2) subjects on NSSCH with a 4 or higher;
- (b) Three (3) subjects on NSSCO with a C or higher, and additionally,
- (c) English, Mathematics and physical science must be with a minimum C on NSSCO

**OR A pass in five (5) different subjects with:**

- (a) Three(3) subjects on NSSCH with a 4 or higher
- (b) Two (2) subjects on NSSCO with a C or higher, and additionally,
- (c) English, Mathematics and Physical Science must be with a minimum C on NSSCO.

## ALTERNATE PATHWAYS TO ADMISSION

### Mature Age Entry Scheme (MAE)

Candidates aspiring for admission to the **Bachelor of Science in Aeronautical Science programme** can do so through the Mature Age Entry Scheme under the following conditions:

- Be at least 25 years old on the 1st day of the academic year in which admission is sought
- Have at least completed Senior Secondary education, and
- Have proof of at least 5 years aviation/aerospace related work experience

**Additionally, such a candidate will sit for Four (4) Mature Age Entry examination papers covering the topics of:**

- **English Proficiency, General Knowledge, Mathematics Ability, and Physical Science**

A **50%** average of all papers is required with no paper score below **40%**

### Recognition of Prior Learning

Another way of entering the programme is through **Recognition of Prior Learning (RPL)** according to the UNAM RPL policy. Depending on the content of a qualifying candidate's RPL portfolio, placement in the programme can be accomplished at the discretion of the Head of Department and/or Programme Coordinator into either *Normal* or *Extended* Mode of this programme.

**Note: Obtaining the minimum number of points however, does not necessarily ensure admission.**

**Admission is based on places available in the programme and is awarded based on merit.**

## ADDITIONAL SELECTION CRITERIA

(a) The selection of candidates will be done based on the highest points on the UNAM evaluation scale, guided by matters of equity as outlined by UNAM and national policies (such as gender and regional representation).

(b) A placement test will be administered to the potential eligible candidates, whereby 60% passing mark will be required.

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### D.1.2. ARTICULATION OPTIONS

Bachelor of Science in Aeronautical Science (Honours) may serve as the entry point for relevant Postgraduate Diplomas and Master's Programmes.

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### D.1.3. DURATION OF STUDY

The **Bachelor of Science in Aeronautical Science Honours degree programme** cannot be completed in less than three (3) years. However, it must be completed within a period of six (6) years of full-time study, unless special permission is granted for this period to be exceeded.

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### D.1.4. MODE OF DELIVERY

**Bachelor of Science in Aeronautical Science Honours degree programme** is offered on a mode(s) of delivery face-to-face, blended,. The mode of delivery consists of a combination of lectures, tutorials, lab practicals, research projects and industrial attachments. In order to be admitted to examinations, students are required to attend at least **80%** of the lectures and to complete the required elements that make up the continuous assessment marks. Attendance of practical and tutorial classes is compulsory for all courses that have these components.

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### D.1.5. ASSESSMENT CRITERIA

**Unless stated otherwise in the module descriptor, the following shall apply:**

**For modules assessed with Continuous Assessment (CA) and Examination,**

- A minimum CA Mark of **40%** is required to gain entrance into the relevant module examination. Continuous assessment will come from: class tests, assignments, presentations, practical/laboratories and field drills and reports
  - The final mark for each module will be calculated using a ratio of CA mark: Exam mark of **50: 50** and
  - In order to pass a module, a minimum final mark of **50%** shall be required.
  - Notwithstanding the above, a subminimum of at least **40%** will apply to the Exam Mark.
- To qualify for a Supplementary Exam a final mark of **45 – 49%** is required
- A candidate must obtain a sub-minimum of **40%** in the examination to pass a module.

**For 100% Continuous Assessment modules, a final aggregate mark of 50% shall be required to pass.**

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### D.1.6. QUALITY ASSURANCE ARRANGEMENTS

**The quality of the programme will be monitored by using the following methods:**

- Soliciting regular feedback from stakeholders (alumni and external examiners).
- Feedback from the student-lecturer's evaluations, workplace attachments and school advisory board.
- A mentorship programme will be implemented for students in this programme.
- Through monitoring of student performance, at risk students will be identified for possible intervention.
- Tracer studies shall be conducted to evaluate the viability and relevance of the programme and to obtain feedback from our graduates on their experience with respect to employment and further studies.
- All 1st-year modules shall be moderated **internally**, and all 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> year modules shall be moderated both **internally and externally**.
  - For modules with examinations, examination papers, memoranda and scripts shall be moderated.
  - For **100%** continuous assessment modules, at least **50%** of the assessments shall be moderated as per guideline above.
- The programme shall be reviewed, and prescribed materials updated every **five (5) years**, or earlier, if the need arises.
- To comply with the Namibia Qualifications Authority Act no. 29 of 1996 as well as the Higher Education Act no. 26 of 2003, the programme shall be submitted to the NQA for registration on the NQF and to the NCHE for accreditation.

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### **D.1.7. RE-ADMISSION REGULATIONS**

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#### **NORMAL ENROLLMENT**

To be re-admitted to the School of Military Science, a student must have successfully completed the following minimum number of credits as indicated below:

- 64 credits** (of which **24** must be non-core) by the end of the first year of registration
- 147 credits** (of which 38 must be non-core) by the end of the second year of registration
- 238 credits** by the end of the third year of registration
- 320 credits** by the end of the fourth year of registration
- 424 credits** by the end of the fifth year of registration
- 521 credits** by the end of the sixth year of registration

The programme must be completed after a maximum of 5 years of registration **EXTENDED ENROLMENT**

#### **Extended enrolment**

The following re-admission regulations will apply to students enrolled for the **Extended programme**:

To be re-admitted to the School of Science, a student must have successfully completed the following minimum number of credits as indicated below:

- 32 credits** (of which **12** must be non-core) by the end of the **first year** of registration
- 105 credits** (of which **36** must be non-core) by the end of the **second year** of registration
- 190 credits** by the end of the **third year** of registration
- 260 credits** by the end of the **fourth year** of registration
- 391 credits** by the end of the **fifth year** of registration
- 456 credits** by the end of the **sixth year** of registration
- 521 credits** by the end of the **seventh year** of registration

The **Bachelor of Science in Aeronautical Science Honours** must be completed after a maximum of 6 years of registration

Further to the above all **First Year modules** must be passed before one can register for any **Third Year module**.

A student will not be **re-admitted** into the School of Military Science if he/she has not passed the above courses.

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### **D.1.8. ADVANCEMENT AND PROGRESSION RULES**

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#### **PASS REQUIREMENTS**

##### **NORMAL ENROLLMENT**

A student advances to the subsequent academic year of study when the following conditions have been met:

- Year 1 to Year 2: At least **86** credits including the entire core.
- Year 2 to Year 3: **All first-year** credits in addition to at least **86 second-year** credits
- Year 3 to Year 4: **All first and second-year** credits in addition to at least **80 third-year credits**

##### **Extended enrolment**

A student advances to the subsequent academic year of study when the following conditions have been met in terms of the **Extended Programme year structure**:

- Year 1 to Year 2: At least **46** credits
- Year 2 to Year 3: **All first-year** credits in addition to at least **48 second year** credits
- Year 3 to Year 4: **All second-year** credits and at least **60 third year** credits
- Year 4 to Year 5: **All first, second and third-year** credits in addition to at least **68 fourth-year** credits

A student who fulfilled the re-admission regulations but **could not advance to the next academic year must first register for all failed modules**. Subject to **pre-requisites**, such a student **may then add modules of the subsequent academic year**, provided that the total number of registered credits **does not exceed** the prescribed number of credits of the current academic year by more than **20%**.

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### **D.1.9. REQUIREMENTS FOR QUALIFICATION AWARD**

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This qualification will be awarded to people credited with a minimum of 521 credits, and who have met the requirements in addition to all the compulsory and electives courses prescribed for this Degree programme.

## D.1.10. CAREER OPPORTUNITIES

Graduate would have an opportunity to work in the field of:

- Flight operations
- Air traffic control services
- Aeronautical information services
- Meteorological services
- Airport management
- Aviation safety and security
- Aviation administration and
- Aircraft incidents & accidents investigation services

## D.2. BACHELOR OF SCIENCE IN AERONAUTICAL SCIENCE HONOURS TABLE FOR ALL MODULES

**Qualification: BSc in Aeronautical Science Honours 34BSAS**

Students opting for a BSc in Aeronautical Science Honours must take all the following compulsory and electives courses:

### YEAR 1

SEMESTER	MODULE NAME	COURSE CODE	CREDITS	PRE-REQUISITES	CO-REQUISITES
<b>Year 1 Core Semester 1</b>					
1	Skills Portfolio	U3403FS	NCB	None	None
1	Academic Literacy I	U3583AL	8	None	None
1	National and Global Citizenship	U3420CN	2	None	None
1	Sustainability and Environmental Awareness	U3420SE	2	None	None
1	Matrices and Complex Numbers	T3520AN	4	None	None
1	Concepts of Air Navigation	T3520AN	4	None	None
1	Digital Literacy	U3583DD	8	None	None
<b>Year 1 Semester 1</b>					
1	General Physics I	S3511PG	14	None	None
1	Aviation History	T3511AH	12	None	None
1	Calculus I	S3511MC	12	None	None
1	Fundamentals of Statistics	S3511SF	12	None	None
<b>Year 1 Semester 2</b>					
2	General Physics II	S3512PG	14	None	S3511PG
2	Calculus II	S3512MC	12	None	S3511MC
2	Introduction to Physical Geography	T3532MG	14	None	None
2	Principles of Flight I	T3512AF	14	None	None
<b>Total Credits</b>			<b>128</b>		

### YEAR 2

SEMESTER	MODULE NAME	COURSE CODE	CREDITS	PRE-REQUISITES	CO-REQUISITES
<b>Year 2 Core Semester 1</b>					
1	Academic Literacy II	U3683LB	8	None	None
1	Project Management Skills	U3420PJ	2	None	None
1	Critical Thinking	U3520TH	2	None	None
1	Entrepreneurship Skills	U3420RT	2	None	None
1	Human Factors	T3640AR	2	None	None
1	Military Law	T3620MS	8	None	None
1	General Aviation Operations	T3620AS	8	None	None
<b>Year 2 Semester 1</b>					
1	Electronics	S3611PE	16	None	S3512PG
1	Waves & Optics	S3611PW	16	None	S3511PG& S3512PG
1	Flight Physiology	T3641AY	7	T3521AF	None
1	Principles of Flight II	T3611AF	16	T3521AF	T3641AY
<b>Year 2 Semester 2</b>					
2	Crew Resource Management in Aviation	T3612AC	16	None	T3641AY
2	CWIE PREP	T3602NS	8	None	None
2	Aviation Navigation GNSS	T3652AN	14	T3611AF	None
2	Aviation Safety	T3672AS	14	None	T3641AY
<b>Total Credits</b>			<b>135</b>		

**YEAR 3**

SEMESTER	MODULE NAME	COURSE CODE	CREDITS	PRE-REQUISITES	CO-REQUISITES
<b>Year 3 Core Semester 1</b>					
1	Workplace Attachment	W3700IC	24	T3602NS	None
<b>Year 3 Semester 1</b>					
1	Aviation-Aerospace Security Issues	T3721AA	8	T3612AF	None
1	Airport Planning and Management	T3731AB	16	None	None
1	Aviation Management	T3751AC	16	None	None
1	Military Psychology	T3731MG	8	None	None
1	Aviation Meteorology	T3701AM	8	None	None
<b>Year 3 Semester 2</b>					
2	Military Management & Leadership	T3752MG	16	None	None
2	Aviation Environmental Science	T3732AE	16	None	None
2	Aviation Ethics	T3722AD	8	None	None
2	Aviation Laws and Regulations	T3702AE	8	T3612AF	None
2	Aircraft Turbine Engine Operation	T3732AF	16	T3612AF	None
<b>Total Credits</b>			<b>120</b>		

**YEAR 4**

SEMESTER	MODULE NAME	COURSE CODE	CREDITS	PRE-REQUISITES	CO-REQUISITES
<b>Year 4 Core Semester 1</b>					
1	Research Methodology & Proposal	T3810AR	22	None	None
<b>Year 4 Semester 1</b>					
1	Advanced Aircraft Performance	T3831AA	20	T3732AF	None
1	Atmospheric Science	T3821AS	10	T3712AE	None
1	Unmanned Aircraft Systems	T3851AU	20	T3712AE	None
<b>Year 4 Semester 1 &amp; 2</b>					
1 & 2	Research Project	T3813AP	8	T3810AR	None
<b>Year 4 Semester 2</b>					
2	Aviation Logistics	T3812AL	20	T3751AC	None
2	Human Resources in Aviation	T3832AH	20	T3751AC	None
2	Corporate Aviation Operation	T3842AC	10	T3731AB	None
<b>Total Credits</b>			<b>138</b>		

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### D.3. BACHELOR OF SCIENCE IN AERONAUTICAL SCIENCE HONOURS 34BSAS COURSE DESCRIPTIONS

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#### First Year Modules

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<b>T3520AN</b>	<b>CONCEPTS OF AIR NAVIGATION</b>
<b>Course Title:</b>	<b>Concepts of Air Navigation</b>
<b>Code:</b>	<b>T3520AN</b>
<b>NQF Level:</b>	<b>5</b>
<b>Contact hours:</b>	2 lecture hours per week for one semester
<b>Credits:</b>	<b>4</b>
<b>Course Assessment:</b>	<b>100% of the final mark</b> of tests, quizzes and assignments.
<b>Examination</b>	<b>None</b>
<b>Prerequisites:</b>	None
<b>Course description:</b> <b>Air Navigation:</b> The understanding of Magnetic Compass; Heading and Track. <b>Geographical concept:</b> The understanding of True North; Magnetic North; Compass North; Magnetic declination (variation); Compass deviation; Heading; Drift and Track. <b>Chart plotting:</b> Time estimation in reference to ground speed.	
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<b>T3511AH</b>	<b>AVIATION HISTORY</b>
<b>Course Title:</b>	<b>Aviation History</b>
<b>Code:</b>	<b>T3511AH</b>
<b>NQF Level:</b>	<b>5</b>
<b>Contact hours:</b>	4 lecture hours + 1 tutorial hour per week for one semester
<b>Credits:</b>	<b>14</b>
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a minimum 3 (three) tests, quizzes and assignments
<b>Examination</b>	<b>50%</b> (1x 2 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description:</b> <b>Aviation timeline:</b> Aviation myths and legends; Balloons; Ornithopters or early helicopters. <b>Aviation pioneers: The Wright Brothers. Aviation before and during World War I:</b> aerostats, aerodynes. <b>Aviation during and after World War II:</b> the evolution of aerodynes, concept of the jets and NG. <b>Barnstormers and racers:</b> First flights across the Atlantic; the pathfinders of aviation. <b>The era of the jet aircraft. Space exploration. Airships:</b> types of airships. The history of airlines: different airlines from various continents. <b>History of national air forces:</b> Namibian Air Force. <b>Flying boats; Aviation technology and development.</b>	
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<b>T3532MG</b>	<b>INTRODUCTION TO PHYSICAL GEOGRAPHY</b>
<b>Course Title:</b>	<b>Introduction to Physical Geography</b>
<b>Code:</b>	<b>T3532MG</b>
<b>NQF Level:</b>	5
<b>Contact hours:</b>	4 lecture hours + 3 practical hours per week for one semester
<b>Credits:</b>	<b>14</b>
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 4 gradable items).
<b>Examination</b>	<b>50%</b> (1x 3 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description:</b> <b>The earth:</b> Movements and seasons; Basic facts and mappings. <b>The varieties of surface form:</b> How surface form develops; plains; surfaces rougher than plains; the margins of the land. <b>Introduction to climate:</b> Air temperature and solar energy; the circulation of the atmosphere; winds and pressure; precipitation. <b>Hydrosphere:</b> Namibian weather and climate; Climatological data; Synoptic weather charts and climogrammes. <b>Atmospheric disturbances:</b> Air masses and fronts. <b>Classification of climates and their distribution: The tropical humid climates;</b> The dry climates; Humid mesothermal climates; Humid microthermal; Polar and highland climates. <b>Water and the seas:</b> The waters of the land; Natural vegetation and soils.	
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<b>T3512AF</b>	<b>PRINCIPLES OF FLIGHT I</b>
<b>Course Title:</b>	<b>Principles of Flight I</b>
<b>Code:</b>	<b>T3512AF</b>
<b>NQF Level:</b>	5
<b>Contact hours:</b>	4 lecture hours + 2 practical hours per week for one semester
<b>Credits:</b>	14
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 4 gradable items).
<b>Examination</b>	<b>50%</b> (1x 3 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description:</b> <b>Basic of aerodynamics:</b> Subsonic aerodynamics and transonic aerodynamics. <b>Air navigation:</b> Basics of navigation; Aircraft performance; Flight planning and monitoring. <b>Radio navigation:</b> Radio aids; Basic radar principles; Self-contained and external-referenced navigation systems. <b>Flight instruments:</b> Air data instruments; Gyroscopic instruments; Magnetic compass; Power plant and system monitoring instruments. <b>Aviation Meteorology:</b> The flight hazards and meteorological information; Ice accretion; Visibility; Frontal analysis; Synoptic charts and upper level weather charts; Thermodynamics.	

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## Second Year Modules

<b>T3640AR</b>	<b>HUMAN FACTORS</b>
<b>Course Title:</b>	<b>Human Factors</b>
<b>Code:</b>	<b>T3640AR</b>
<b>NQF Level:</b>	6
<b>Contact hours:</b>	2 lecture hours per week for one semester
<b>Credits:</b>	2
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 3 gradable items).
<b>Examination</b>	<b>50%</b> (1x 2 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description: Definitions concepts and history:</b> Aviation Human Factors, management and the organization. <b>Human performance in aviation operations:</b> Fatigue and stress and how to manage them, Human information processing and operational decision-making, Human error and threat management. <b>Threat and Error Management (TEM) in flight operations:</b> air traffic control and cabin operations. <b>Resource management training:</b> on the flight deck and in air traffic control. <b>Automation in the workplace, The design of Standard Operating Procedures (SOPs)</b> and checklists, An introduction to Safety Management Systems.	
<b>T3620MS</b>	<b>MILITARY LAW</b>
<b>Course Title:</b>	<b>Military Law</b>
<b>Code:</b>	<b>T3620MS</b>
<b>NQF Level:</b>	6
<b>Contact hours:</b>	2 lecture hours per week for one semester
<b>Credits:</b>	8
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 3 gradable items).
<b>Examination</b>	<b>50%</b> (1x 3 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description: General introduction to the study of law:</b> The nature and essence of the law; Classification of the Namibian law; Sources of law; Jurisprudence in general. <b>Military Law:</b> Introduction and application; Jurisdiction of civil courts; Establishment of military courts; Military offences; Convening authorities; Different military courts and its jurisdiction; Boards of inquiry; Preliminary investigations (PI) and military police investigations; Pre-trial procedures; Redress of wrongs. <b>Military courts:</b> Determining the trial court; Duties of the court and officials; Procedures; Rights of the accused; Recording of proceedings; Sentencing; Confirmations and reviews; right to the review of proceedings; State of emergency in terms of the Namibian Constitution. <b>Defence Act relating to being on service:</b> Status of Force Agreements (SOFA); Memorandum of Understanding (MoU); Conduct of visiting forces. <b>Historical background of International Humanitarian Law (IHL):</b> The Geneva Conventions Act 2003 and International Humanitarian Laws; Crimes against humanity; War crimes; command responsibilities.	
<b>T3620AS</b>	<b>GENERAL AVIATION OPERATIONS</b>
<b>Course Title:</b>	<b>General Aviation operations</b>
<b>Code:</b>	<b>T3620AS</b>
<b>NQF Level:</b>	6
<b>Contact hours:</b>	2 lecture hours per week for one semester
<b>Credits:</b>	8
<b>Course Assessment:</b>	<b>100% of the final mark of tests, quizzes and assignments.</b>
<b>Examination</b>	<b>None</b>
<b>Prerequisites:</b>	None
<b>Course description: General Aviation (GA):</b> A historical perspective, scope of General Aviation. <b>The Fixed Base Operator:</b> Backbone of General Aviation. <b>Managing a Fixed Base Operation:</b> Financial Planning and control; The role of GA Marketing; Marketing Research. <b>Transportation needs assessment. Value analysis:</b> Costs versus benefits; Methods of acquiring a business aircraft. <b>Promotion and sales:</b> sales management.	
<b>T3641AY</b>	<b>FLIGHT PHYSIOLOGY</b>
<b>Course Title:</b>	<b>Flight Physiology</b>
<b>Code:</b>	<b>T3641AY</b>
<b>NQF Level:</b>	6
<b>Contact hours:</b>	2 lecture hours + 1 practical hour per week for one semester
<b>Credits:</b>	8
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 4 gradable items).
<b>Examination</b>	<b>50%</b> (1x 3 hours examination paper)
<b>Prerequisites:</b>	T3521AF
<b>Course description: Atmospheric Physics:</b> Human physiology; the circulatory system; oxygen and respiration. <b>The Nervous system:</b> Ear; hearing and balance; eye and vision. <b>Gas law:</b> Hypoxia; illusions and disorientation. <b>Flying and Health:</b> Sleep and fatigue; drugs, alcohol and human stresses. <b>High altitude and speed flight.</b>	

<b>T3611AF</b>	<b>PRINCIPLES OF FLIGHT II</b>
<b>Course Title:</b>	<b>Principles of Flight II</b>
<b>Code:</b>	<b>T3611AF</b>
<b>NQF Level:</b>	6
<b>Contact hours:</b>	4 lecture hours + 2 practical hours per week for one semester
<b>Credits:</b>	16
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 4 gradable items).
<b>Examination</b>	<b>50%</b> (1x 3 hours examination paper)
<b>Prerequisites:</b>	T3512AF
<b>Course description: Flight performance and planning:</b> Multi-engine gas turbine; Take-off; Cruise; Descent; Landing; Weight and balance; Flight planning and monitoring. <b>Practical:</b> Flight simulation. <b>Human factors:</b> Human information processing; Human behavior; Threat & error management.	
<b>T3612AC</b>	<b>CREW RESOURCE MANAGEMENT IN AVIATION</b>
<b>Course Title:</b>	<b>Crew Resource Management in Aviation</b>
<b>Code:</b>	<b>T3612AC</b>
<b>NQF Level:</b>	6
<b>Contact hours:</b>	4 lecture hours + 1 practical hour per week for one semester
<b>Credits:</b>	16
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 4 gradable items).
<b>Examination</b>	<b>50%</b> (1x 3 hours examination paper)
<b>Prerequisites:</b>	(T3641AY)
<b>Course description: Human error and reliability in crew resource management in aviation:</b> Types of error; Human factor mishap; and threat. <b>Error management:</b> Error chain; Prevention and detection; Safety culture; Standing operation procedures (SOPs) and organizational factors. <b>Stress:</b> Acute stress responses; Workload and fatigue. <b>Situational awareness:</b> Detection; Processing; Action; Complacency; Risk management; Situational awareness and automation management. <b>Decision-making:</b> Skill based; Rule based and knowledge-based decisions. <b>Effective communications:</b> Inquiry; Advocacy and assertiveness; Conflict resolution; Feedback and critique. <b>Leadership:</b> Team behavior and synergy.	
<b>T3602NS</b>	<b>CWIE PREPARATION</b>
<b>Course Title:</b>	<b>CWIE Preparation</b>
<b>Code:</b>	<b>T3602NS</b>
<b>NQF Level:</b>	6
<b>Contact hours:</b>	2 lecture hours per week for one semester.
<b>Credits:</b>	8
<b>Course Assessment:</b>	<b>100% of the final mark of tests and quizzes, assignments, and a CWIE portfolio.</b>
<b>Examination</b>	<b>None</b>
<b>Prerequisites:</b>	None
<b>Course description: Professional behaviour, work-readiness, diligence &amp; work ethics. Active searching for a CWIE situation with the aid of UNAM and the School.</b>	
<b>T3652AN</b>	<b>AVIATION NAVIGATION GNSS</b>
<b>Course Title:</b>	<b>Aviation Navigation GNSS</b>
<b>Code:</b>	<b>T3652AN</b>
<b>NQF Level:</b>	6
<b>Contact hours:</b>	4 lecture hours + 1 practical hour per week for one semester
<b>Credits:</b>	16
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 4 gradable items).
<b>Examination</b>	<b>50%</b> (1x 3 hours examination paper)
<b>Prerequisites:</b>	T3611AF
<b>Course description: Introduction to Global Navigation Satellite System (GNSS):</b> How position is determined by the GNSS; GNSS Errors. <b>GNSS Correction Methods (Augmentation):</b> Differential Global Navigation Satellite System (DGNSS); Real time Kinematics (RTK); Satellite Based Augmentation System (SBAS); Random autonomous integrity monitoring (RAIM). GNSS Current Trends and the Future. <b>GNSS Architecture:</b> American NAVSTAR - Global Positioning System (GPS); Russian Global Navigation Satellite System (GLONASS); Chinese BeiDou Navigation Satellite System (BDS); European GALILEO; <b>Other Satellite Navigation Systems:</b> Indian Regional Navigation Satellite System (IRNSS); Japanese Quasi-Zenith Satellite System (QZSS). <b>Global Navigation Satellite Systems (GNSS) Aviation Applications (Practicals)</b>	



<b>T3672AS</b>	<b>AVIATION SAFETY</b>
<b>Course Title:</b>	<b>AVIATION SAFETY</b>
<b>Code:</b>	<b>T3672AS</b>
<b>NQF Level:</b>	6
<b>Contact hours:</b>	4 lecture hours + 1 practical hour per week for one semester
<b>Credits:</b>	16
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 4 gradable items).
<b>Examination</b>	<b>50%</b> (1x 3 hours examination paper)
<b>Prerequisites:</b>	(T3641AY)
<b>Course description: Introduction and regulatory bodies:</b> Organizational /institutional roles and safety reporting systems. <b>Human Factors:</b> Mechanical and human factors analysis; Human factors. <b>Ground Safety:</b> Aviation ground operations environment, Aircraft mishaps, Aircraft hazards, Ground support equipment and hazardous material. <b>SMS:</b> Systems management; Risk management theory. <b>Flight safety:</b> Flight safety statistics; Air traffic control; Managing flight safety. <b>Aircraft Accident and incidents investigation procedures:</b> Accident investigation procedures and preventative accident methodology. <b>CRM:</b> Cockpit resource management.	

### Third Year Modules

<b>T3721AA</b>	<b>AVIATION-AEROSPACE SECURITY ISSUES</b>
<b>Course Title:</b>	<b>Aviation-Aerospace Security Issues</b>
<b>Code:</b>	<b>T3721AA</b>
<b>NQF Level:</b>	7
<b>Contact hours:</b>	2 lecture hours + 1 practical hour per week for one semester
<b>Credits:</b>	8
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 3 gradable items).
<b>Examination</b>	<b>50%</b> (1x 2 hours examination paper)
<b>Prerequisites:</b>	T3612AF
<b>Course description: Security techniques:</b> Definition of security concept of security technologies and security measures at airports. <b>ICAO and Namibia NCAA regulations:</b> History; application; ICAO standards; Treaties and international obligations. <b>Terrorism:</b> Terrorist activities and philosophies; Hijacking and piracy. <b>Improvised explosive devices:</b> Types and effect; Searching for IEDs and management of threat. <b>Dangerous goods. Quarantine and customs.</b>	

<b>T3731AB</b>	<b>AIRPORT PLANNING AND MANAGEMENT</b>
<b>Course Title:</b>	<b>Airport Planning and Management</b>
<b>Code:</b>	<b>T3731AB</b>
<b>NQF Level:</b>	7
<b>Contact hours:</b>	4 lecture hours + 1 practical hour per week for one semester
<b>Credits:</b>	16
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 4 gradable items).
<b>Examination</b>	<b>50%</b> (1x 3 hours examination paper)
<b>Prerequisites:</b>	T3612AF
<b>Course description: Airport organization and public relations management. The economic, political and social role of airports.</b> Airport privatization; revenues and costs. <b>Airport requirements:</b> Master plan; Site selection; Layout; Land use; Airfield facilities; Terminal area and building design. <b>Airport financial management:</b> Financing methods and planning.	

<b>T3751AC</b>	<b>AVIATION MANAGEMENT</b>
<b>Course Title:</b>	<b>AVIATION MANAGEMENT</b>
<b>Code:</b>	<b>T3751AC</b>
<b>NQF Level:</b>	7
<b>Contact hours:</b>	4 lecture hours + 1 practical hour per week for one semester
<b>Credits:</b>	16
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 4 gradable items).
<b>Examination</b>	<b>50%</b> (1x 3 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description: Air transportation; aviation law; airline management; aviation safety and accident investigation. Airline economics and finance:</b> Principles of macro and micro economics; Principles of management; Financial and managerial accounting. <b>Human capital:</b> Business statistics; Public policy and labour laws. <b>Collective bargaining, dispute resolution and labour relations environment.</b>	

T3731MG	MILITARY PSYCHOLOGY
<b>Course Title:</b>	<b>Military Psychology</b>
<b>Code:</b>	<b>T3731MG</b>
<b>NQF Level:</b>	7
<b>Contact hours:</b>	4 lecture hours + 1 tutorial hour per week for one semester
<b>Credits:</b>	8
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 4 gradable items).
<b>Examination</b>	<b>50%</b> (1x 3 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description: Personality theory and war:</b> Role of personality and personality theory of Jung; Adjustment. <b>Psychology:</b> Maladjustment and adolescent; Transition in military training. <b>Operational psychology:</b> Psychological effects of combat; Post-traumatic stress disorder. <b>Peacekeeping psychology:</b> Model to support soldiers and their dependents; Stressors and prisoner of war. <b>Psychological warfare:</b> Ethics in war operations.	

T3701AM	AVIATION METEOROLOGY
<b>Course Title:</b>	<b>Aviation Meteorology</b>
<b>Code:</b>	<b>T3701AM</b>
<b>NQF Level:</b>	7
<b>Contact hours:</b>	4 lecture hours + 1 tutorial hour per week for one semester
<b>Credits:</b>	8
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 4 gradable items).
<b>Examination</b>	<b>50%</b> (1x 2 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description: Introduction:</b> Atmosphere, atmospheric hazards, scientific inquiry, Earth's spheres, composition of the atmosphere, Ozone depletion, vertical structure of the atmosphere. <b>Aviation Weather:</b> The need for Meteorology, General Aviation accidents statistics, sources of aviation weather, Aviation weather problems. <b>Heat &amp; Temperature:</b> Earth-Sun relationship, Energy, Temperature, Heat, Mechanism of heat transfer: Radiation, reflection, scattering, diffusion, the greenhouse effect. Air-Temperature data, the control of temperature: Land & water, Ocean currents, altitude, geographical positioning, cloud cover & albedo, World distribution of temperature, Temperature measurements, Heat stress and wind chill: Indices of human discomfort. <b>Precipitation/Condensation:</b> Cloud formation, cloud classification, Types of fog, Forms of precipitation, precipitation measurement. <b>Air pressure &amp; Winds:</b> Air pressure and winds, Measuring air pressure, Pressure change with altitude, Winds aloft, Surface winds, Wind measurement. <b>Wind &amp; Air Pressure:</b> Applications. <b>Thunderstorms &amp; Tornadoes: Thunderstorms &amp; Tornadoes:</b> Introduction, Thunderstorms, Air mass thunderstorms, severe thunderstorms, Supercell thunderstorms, Lightning and thunder, Tornadoes; Tornadoes forecasting. <b>Hurricane:</b> Profile. <b>Weather analysis and forecasting:</b> Weather analysis: Overview, Weather forecasting using computers, Other weather forecasting methods, forecast accuracy, Satellites in weather forecasting.	

T3752MG	MILITARY MANAGEMENT & LEADERSHIP
<b>Course Title:</b>	<b>Military Management &amp; Leadership</b>
<b>Code:</b>	<b>T3752MG</b>
<b>NQF Level:</b>	7
<b>Contact hours:</b>	4 lecture hours + 1 tutorial hour per week for one semester
<b>Credits:</b>	16
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 4 gradable items).
<b>Examination</b>	<b>50%</b> (1x 3 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description: Leadership processes:</b> Contingent and dynamic; Personal strengths; values; growth opportunities; team; group; vision and professional development plan. <b>Social psychology:</b> Organizational behaviour and group dynamics. <b>Management:</b> General; environment and diversity. <b>Planning:</b> Skills; creative problem solving; strategy and operational processes and organizing skills. <b>Organizing and delegation: management of change: Power;</b> conflict and stress; control of human resources and finance controls in organization.	

<b>T3732AE</b>	<b>AVIATION ENVIRONMENTAL SCIENCE</b>
<b>Course Title:</b>	<b>Aviation Environmental Science</b>
<b>Code:</b>	<b>T3732AE</b>
<b>NQF Level:</b>	7
<b>Contact hours:</b>	4 lecture hours + 1 tutorial hour per week for one semester
<b>Credits:</b>	16
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 4 gradable items).
<b>Examination</b>	<b>50%</b> (1x 3 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description: Aviation and the environment (Introduction):</b> Role of general aviation, facts about Aviation emissions, Aviation Biofuels, Facts on alternative fuels, Technology and the environment, Energy Statistics, NATA environmental initiative, <b>Air Traffic Modernization:</b> The challenges ahead, Goals and Metrics, NextGen Solutions, Clean Sky Joint Technology Initiative, ICAO Initiatives, <b>Earth's two critical features:</b> Our atmosphere, Climate change, Glacial retreat, Global GHG emitters, Global temperature and sea level, Global warming. <b>Aircraft emissions:</b> Multiple environmental challenges, Trade-offs in reducing impacts Noise impacts, Air quality, Global Climate. <b>Global climate:</b> Effects on Aviation, Global climate: Alternative energy, Water quality, Green airports, Environmental footprints, Regulation & compliance, Green energy, Alternative energy, Mobile sources of air pollution, <b>Aircraft emission:</b> Reduction, Airport Infrastructure, <b>Ground Support equipment Sustainable energy sources:</b> Sustainable energy, sources of energy, non-renewable energy, <b>Renewable energy:</b> Solar, Wave, Geothermal, Tidal, Hydroelectric, Biomass energy, Regional air Airport environmental management plan, Legal risks on airport environment. <b>Traffic management initiative:</b> NextGen, Other Regional Initiatives.	
<b>T3722AD</b>	<b>AVIATION ETHICS</b>
<b>Course Title:</b>	<b>Aviation Ethics</b>
<b>Code:</b>	<b>T3722AD</b>
<b>NQF Level:</b>	7
<b>Contact hours:</b>	2 lecture hours + 1 tutorial hour per week for one semester
<b>Credits:</b>	8
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 3 gradable items).
<b>Examination</b>	<b>50%</b> (1x 2 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description: Ethical theories:</b> Dilemmas; decision-making; rights and character. <b>Capitalism and its critics:</b> the business of aviation; issues in responsibility and whistle-blowing in aviation. <b>Racial discrimination against pilots:</b> race; gender and age. <b>Economic favouritism.</b>	
<b>T3702A</b>	<b>AVIATION LAWS AND REGULATIONS</b>
<b>Course Title:</b>	<b>AVIATION LAWS AND REGULATIONS</b>
<b>Code:</b>	<b>T3702A</b>
<b>NQF Level:</b>	7
<b>Contact hours:</b>	2 lecture hours + 1 tutorial hour per week for one semester
<b>Credits:</b>	8
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 3 gradable items).
<b>Examination</b>	<b>50%</b> (1x 2 hours examination paper)
<b>Prerequisites:</b>	T3612AF
<b>Course description: Aviation rules:</b> Administration; aircraft; personnel; airspace; carriage of dangerous goods; aerodrome traffic and noise; aircraft registration and parachuting. <b>Certification:</b> Air operators; adventure aviation; large and medium aeroplanes. <b>Aeronautical information services organizations:</b> Agricultural aircraft operations; aviation training organizations; aircraft maintenance; design; manufacturing and recreation organizations; Aerodromes; aeronautical telecommunication; air traffic and instrument flight procedures; Aviation meteorological service organisations and foreign air transport operators.air traffic and instrument flight procedures; Aviation meteorological service organisations and foreign air transport operators.	
<b>T3732AF</b>	<b>AIRCRAFT TURBINE ENGINE OPERATION</b>
<b>Course Title:</b>	<b>Aircraft Turbine Engine Operation</b>
<b>Code:</b>	<b>T3732AF</b>
<b>NQF Level:</b>	7
<b>Contact hours:</b>	2 lecture hours + 1 tutorial hour per week for one semester
<b>Credits:</b>	8
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 3 gradable items).
<b>Examination</b>	<b>50%</b> (1x 2 hours examination paper)
<b>Prerequisites:</b>	T3612AF
<b>Course description: The gas turbine cycles: Basic principles:</b> performance and efficiency of gas turbine; Effects of turbine temperature; atmospheric conditions on gas turbine. <b>Engine sections:</b> compressor stall and surge in gas turbine.	

## Fouth Year Modules

<b>T3810AR</b>	<b>RESEARCH METHODOLOGY AND PROJECT PROPOSAL</b>
<b>Course Title:</b>	<b>Research Methodology and Project Proposal</b>
<b>Code:</b>	<b>T3810AR</b>
<b>NQF Level:</b>	8
<b>Contact hours:</b>	4 hours of lectures per week
<b>Credits:</b>	14
<b>Course Assessment:</b>	<b>100%</b>
<b>Examination</b>	<b>None</b>
<b>Prerequisites:</b>	None
<p><b>Course description: The nature and need for research</b> in science discipline. <b>Scientific method:</b> Historic overview of research driven scientific progress. <b>Research methods and design:</b> Qualitative and quantitative research methods; experimental; quasi-experimental and non-experimental methods; selection of research topics; writing a research proposal; conducting a literature review; sampling methods; design of questionnaires; interviews and observation techniques; independent and dependent variables; correlation and causation; validity of conclusions; statistical methods of data evaluation and data analysis; methods of presenting data and conclusions. <b>Report writing and ethical considerations</b> in research.</p>	
<b>T3813AP</b>	<b>RESEARCH PROJECT</b>
<b>Course Title:</b>	<b>Research Project</b>
<b>Code:</b>	<b>T3813AP</b>
<b>NQF Level:</b>	8
<b>Contact hours:</b>	4 lecture hours per week for one semester
<b>Credits:</b>	16
<b>Course Assessment:</b>	<b>100%</b>
<b>Examination</b>	<b>None</b>
<b>Prerequisites:</b>	T3810AR
<p><b>Course description: Military/Aviation/Aeronautical science project:</b> An investigation in nature carried out as an individual involving research; literature search; data collection; analysis and presentation. The presentation is expected to include necessary information and to be in accordance with relevant codes of practice.</p>	
<b>T3831AA</b>	<b>ADVANCED AIRCRAFT PERFORMANCE</b>
<b>Course Title:</b>	<b>Advanced Aircraft Performance</b>
<b>Code:</b>	<b>T3831AA</b>
<b>NQF Level:</b>	8
<b>Contact hours:</b>	4 lecture hours + 3 practical hours per week for one semester
<b>Credits:</b>	20
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 4 gradable items).
<b>Examination</b>	<b>50%</b> (1x 3 hours examination paper)
<b>Prerequisites:</b>	T3732AF
<p><b>Course description: Weight and balance.</b> Aerodynamic; engine and propeller performance of aircrafts. <b>Aeroplane trim:</b> Flight envelopes; take-off and field performance; climb; cruise; descent and landing performance of aircrafts. <b>Manoeuvre:</b> Thermostructural and environmental performance. Mission analysis. <b>Aircraft noise:</b> Sources; propagation and flight trajectories.</p>	
<b>T3821AS</b>	<b>ATMOSPHERIC SCIENCE</b>
<b>Course Title:</b>	<b>Atmospheric Science</b>
<b>Code:</b>	<b>T 3821AS</b>
<b>NQF Level:</b>	8
<b>Contact hours:</b>	4 lecture hours + 3 practical hours per week for one semester
<b>Credits:</b>	10
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 4 gradable items).
<b>Examination</b>	<b>50%</b> (1x 3 hours examination paper)
<b>Prerequisites:</b>	T3712AE
<p><b>Course description: Components of Earth System:</b> Hydrologic Cycle; Carbon Cycle; Oxygen in the Earth System. <b>Atmospheric Thermodynamics:</b> Gas Laws; Hydrostatic Equation; First Law of Thermodynamics; Adiabatic Process; Water Vapor in Air; Static Stability; Second Law of Thermodynamics and Entropy. <b>Radiative Transfer:</b> Spectrum of Radiation; Quantitative Description of Radiation, Blackbody Radiation; Physics of Scattering and Absorption; Radiative Transfer in Planetary Atmospheres. <b>Atmospheric Chemistry:</b> Composition of Troposphere Air; Sources; Transport and Sink of Trace Gases; Tropospheric Trace Gases; Tropospheric Aerosol; Air Pollution; Tropospheric Chemical Cycles and Stratospheric Chemistry. <b>Cloud Microphysics:</b> Nucleation of Water Vapor Condensation; Microstructure of Warm Cloud; Growth of Cloud Droplets in Warm Clouds; Microphysics of Cold Clouds.</p>	

<b>T3851AU</b>	<b>UNMANNED AIRCRAFT SYSTEMS</b>
<b>Course Title:</b>	<b>Unmanned Aircraft Systems</b>
<b>Code:</b>	<b>T3851AU</b>
<b>NQF Level:</b>	8
<b>Contact hours:</b>	4 lecture hours + 2 practical hours per week for one semester
<b>Credits:</b>	20
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 4 gradable items).
<b>Examination</b>	<b>50%</b> (1x 3 hours examination paper)
<b>Prerequisites:</b>	T3712AE
<b>Course description: ICAO Regulatory Framework:</b> Pilotless aircraft, Model aircraft Fundamentals, Regulatory framework, Case for harmonization, Safety management. <b>Overview of UAS:</b> History, General concept of operations, UAS Categories, Recent global developments, RPA system concept, UAS potential-civil/military operations, Expected evolution of the UAS civil/Military market, High seas operations, Environmental considerations. <b>Legal Matters:</b> Specific articles and their applicability to UAS. <b>Operations:</b> Aerodynamics, Rules of the air, Collision avoidance, Air traffic services Equipment, ATS/remote pilot communications, Aerodromes, Meteorological service, Security, Safe transport of dangerous goods by air, Search and rescue, Facilitation, Aircraft accident and incident investigation. <b>Aircraft and Systems:</b> Certification, Airworthiness, Remote pilot station(s), Nationality and registration marks, Radio navigation aids and airborne navigation equipment, Surveillance systems, Aeronautical communications, Aeronautical radio frequency spectrum, Aeronautical charts, Environmental protection. <b>Personnel:</b> Personnel licensing; Licensing and training for pilots and other members of the remote crew; Licensing and training for air traffic controllers.	
<b>T3812AL</b>	<b>AVIATION LOGISTICS</b>
<b>Course Title:</b>	<b>Aviation Logistics</b>
<b>Code:</b>	<b>T3812AL</b>
<b>NQF Level:</b>	8
<b>Contact hours:</b>	4 lecture hours + 1 tutorial hour per week for one semester
<b>Credits:</b>	20
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 4 gradable items).
<b>Examination</b>	<b>50%</b> (1x 3 hours examination paper)
<b>Prerequisites:</b>	T3751AC
<b>Course description: Airfreight logistics market overview:</b> The market trend of airfreight volume worldwide, the opportunities and challenges ahead. <b>Air cargo demand:</b> Air commodities and modal choice; characteristics of demand for air cargo; and factors influencing the choice between air and other modes of transport; multi-modal operation; such as air-road and air-sea operations and their rationales. <b>Principle organizations and international policies/regulations of airfreight operations:</b> The international convention; Air Service Agreement; various regulatory and trade organizations. <b>Business models of air cargo carriers:</b> Combination carriers; passenger airlines and integrators; the types of aircrafts and the performance, and cost allocation to airfreight. <b>The contractual relationship of airfreight operations:</b> Airfreight forwarders; concept of consolidation; and air freight rates; types of documents being applied in airfreight; the application of Master Airway Bill and House Airway Bill; consolidation rate calculation; TACT rules and regulations, e.g. TACT rates; General Cargo Rate; Specific Cargo Rate; Class Rate; ULD Rate. <b>Other issues:</b> Airport facility and ground operation; air cargo security and safety.	
<b>T3832AH</b>	<b>HUMAN RESOURCES IN AVIATION</b>
<b>Course Title:</b>	<b>Human Resources in Aviation</b>
<b>Code:</b>	<b>T3832AH</b>
<b>NQF Level:</b>	8
<b>Contact hours:</b>	4 lecture hours + 2 practical hours per week for one semester
<b>Credits:</b>	20
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 4 gradable items).
<b>Examination</b>	<b>50%</b> (1x 3 hours examination paper)
<b>Prerequisites:</b>	T3751AC
<b>Course description: Introduction to Human Resource Management:</b> Job Analysis and the Talent Management Process. <b>Personnel Planning and Recruiting</b> Employee Testing and Selection; Interviewing Candidates; Training and Developing Employees. <b>Performance Management and Appraisal.</b> <b>Labor Relations:</b> Laws and Collective Bargaining in the aviation industry. <b>Managing Aviation Global Human Resources.</b>	

T3842AC	CORPORATE AVIATION OPERATION
<b>Course Title:</b>	<b>Corporate Aviation Operation</b>
<b>Code:</b>	<b>T3842AC</b>
<b>NQF Level:</b>	8
<b>Contact hours:</b>	2 lecture hours per week for one semester
<b>Credits:</b>	10
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a combination (or subset) of tests and quizzes (at least 3 hours in total), assignments and practical reports (at least 4 gradable items).
<b>Examination</b>	<b>50%</b> (1x 3 hours examination paper)
<b>Prerequisites:</b>	T3731AB
<b>Course description: Role, development, and function of corporate aviation management:</b> A Description of Corporate Aviation.	
<b>Evolution of Corporate Aviation:</b> Technology and Progress of Corporate Aviation; The Functions and Development of the Corporate Aviation Manager; Principles to Follow in Corporate Aviation Management; The Aviation Department Structure within the Corporation. <b>Economics:</b> Cost/Benefit Factors. Selecting the Corporate Aircraft: Corporate Flight Operations Management.	
<b>Corporate Aviation Maintenance:</b> Scheduling and Passenger Service. <b>Corporate Aviation Safety:</b> Corporate Aviation Security; Emergency and Pre-Accident Plans. <b>The Future of Corporate Aviation.</b>	

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## **E. DEPARTMENT OF MILITARY STUDIES**

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### **E.1. REGULATION PERTAINING TO UNDERGRADUATE STUDIES**

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#### **E.1.1. ADMISSION REQUIREMENTS**

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The minimum entry requirements for admission into first year **BSc. in Military Geography 3 YEAR FULL TIME** are as follows:

Candidates must be NDF officers of the rank of 2<sup>nd</sup> Lt. – Capt./equivalent. In addition, all candidates must be recommended by the Ministry of Defence and Veteran Affairs (MoDVA). In addition to the admission requirement (1),

#### **ADMISSION BASED ON NAMIBIAN SCHOOL LEAVING CERTIFICATES 2021 ONWARDS**

**EITHER**

##### **A pass in five different subjects as follows:**

- Geography and History on NSSCAS level with an average "d" or Higher.
- 3 Subjects on NSSCO level with a "C" or higher (Mathematics and Physical Science inclusive).
- English must be at minimum "C" at NSSCO level.

**OR**

##### **A pass in five different subjects as follows:**

- 3 Subjects on NSSCAS level with an average "d" or Higher (Geography and History inclusive).
- 2 Subjects on NSSCO level with a D or higher (Mathematics and Physical Science inclusive).
- English must be at minimum C at NSSCO level.

The selection of candidates will be done based on the highest points on the UNAM evaluation scale guided by matters of equity as outlined by national policies (such as Gender and regional representation).

#### **ADMISSION BASED ON NAMIBIAN SCHOOL LEAVING CERTIFICATES PRIOR TO 2021**

Candidates in possession of a valid Namibian Senior Secondary Certificate (NSSC) issued **prior to 2021** (only) and has a pass in 5 different subjects, as outlined below, can enroll in the *Extended mode* of this programme:

**EITHER**

##### **A pass in five (5) different subjects with**

- Two (2) subjects on NSSCH with a 4 or higher,
- Three (3) subjects on NSSCO with C or higher (Geography and History inclusive), and additionally,
- English, Mathematics and Physical Science must be at minimum a C on NSSCO.

**OR**

##### **A pass in five (5) different subjects with**

- Three (3) subjects on NSSCH with 4 or higher,
- Two (2) subjects on NSSCO with C or higher (Geography and History inclusive), and additionally,
- English, Mathematics and Physical Science must be at minimum a C on NSSCO.

#### **Additional Selection Criteria**

**Mature Age Entry Scheme (MAE)** under the following conditions:

Candidates should

- be at least 25 years old on the 1st day of the academic year in which admission is sought,
- have at least completed senior secondary education, and
- have proof of at least 5 years' relevant work experience relevant to the proposed study programme.

Additionally, such candidates will sit for four (4) Mature Age Entry Examination papers, which are covering the topics of **English Proficiency, General Knowledge, Mathematical Ability, and Geography.**

A **60%** average of all the papers is required, with no paper below 50%.

- Another way of entering the programme is through **Recognition of Prior Learning (RPL)** according to the UNAM RPL policy. Depending on the content of a qualifying candidate's RPL portfolio placement in the programme can be accomplished at the discretion of the Head of Department, into either the Normal mode or the Extended mode of this programme.

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#### **E.1.2. ARTICULATION OPTIONS**

Bachelor of Science in Military Geography may serve as entry point for the Bachelor of Science in Military (hons) and other related postgraduate diploma.

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#### **E.1.3. DURATION OF STUDY**

The **Bachelor of Science in Military Geography degree programme** must be completed within a maximum of **5 years** of registration.

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#### **E.1.4. MODE OF DELIVERY**

**Bachelor of Science in Military Geography degree programme** is offered on a mode(s) of delivery face-to-face, blended. The mode of delivery consists of a combination of lectures, tutorials, lab practicals, research projects and industrial attachments. In order to be admitted to examinations, students are required to attend at least **80%** of the lectures and to complete the required elements that make up the continuous assessment marks. Attendance of practical and tutorial classes is compulsory for all courses that have these components.

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#### **E.1.5. ASSESSMENT CRITERIA**

**Unless stated otherwise in the module descriptor, the following shall apply:**

**For modules assessed with Continuous Assessment (CA) and Examination,**

- A minimum CA Mark of **40%** is required to gain entrance into the relevant module examination. Continuous assessment will come from: class tests, assignments, presentations, practical/laboratories and field drills and reports
- The final mark for each module will be calculated using a ratio of CA mark: Exam mark of **50: 50** and
- In order to pass a module, a minimum final mark of **50%** shall be required.
- Notwithstanding the above, a subminimum of at least **40%** will apply to the Exam Mark,  
To qualify for a Supplementary Exam a final mark of **45 – 49%** is required
- A candidate must obtain a sub-minimum of **40%** in the examination to pass a module.

**For 100% Continuous Assessment modules, a final aggregate mark of 50% shall be required to pass.**

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#### **E.1.6. QUALITY ASSURANCE ARRANGEMENTS**

**The quality of the programme will be monitored by using the following methods:**

- A mentorship programme will be implemented for students in this programme.
- Through monitoring of student performance, at risk students will be identified for possible intervention.
- Tracer studies shall be conducted to evaluate the viability and relevance of the programme and to obtain feedback from our graduates on their experience with respect to employment and further studies.
- All 1st-year modules shall be moderated **internally**, and all 2nd- and 3rd-year modules shall be moderated both **internally** and **externally**.
- For modules with examinations, examination papers, memoranda and scripts shall be moderated.
- For **100%** continuous assessment modules, at least **50%** of the assessments shall be moderated as per guideline above.
- Students will be accorded the opportunity to anonymously evaluate the teaching of the module.
- The programme shall be reviewed, and prescribed materials updated every five **(5) years**, or earlier, if the need arises.
- **To comply with the Namibia Qualifications Authority Act no. 29 of 1996 as well as the Higher Education Act no. 26 of 2003, the programme shall be submitted to the NQA for registration on the NQF and to the NCHE for accreditation.**

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#### **E.1.7. RE-ADMISSION REGULATIONS**

##### **NORMAL ENROLLMENT**

To be **re-admitted** into the Bachelor of Science in Military Geography programme for a particular year of registration, a student must have passed the **minimum number** of courses as indicated below:

Normal enrolment:

- **54 credits** (of which 24 must be non-core) by the end of the first year of registration
- **106 credits** (of which 82 must be non-core) by the end of the second year of registration
- **132 credits** by the end of the third year of registration

**The programme must be completed after a maximum of 5 years of registration EXTENDED ENROLMENT**



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### **E.1.8. ADVANCEMENT AND PROGRESSION RULES**

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A student advances to the following academic level of study when at least 2/3 of the modules of the curriculum for a specific year have been passed. If a student passed only 1/3 of the full curriculum of a specific year, he/she may not register for any modules of the following year. In all cases, prerequisites for modules have to be passed before a student can proceed to register for modules that require prerequisites.

Normal enrolment:

- Year 1 to Year 2: At least **78 credits** including the **UNAM Core**
- Year 2 to Year 3: **All first-year credits (128 credits)** in addition to at least **80 for second-year credits**

A student who fulfilled the **re-admission regulations** but could not advance to the next academic year must first register for **all failed modules**. Subject to **pre-requisites**, such a student may then **add modules** of the subsequent academic year, provided that the total number of registered credits does not exceed the prescribed number of credits of the current academic year by more than **20%**.

A student who fulfilled the re-admission regulations but **could not advance to the next academic year must first register for all failed modules**. Subject to **pre-requisites**, such a student **may then add modules of the subsequent academic year**, provided that the total number of registered credits **does not exceed** the prescribed number of credits of the current academic year by more than **20%**.

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### **E.1.9. REQUIREMENTS FOR QUALIFICATION AWARD**

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The Bachelor of Science in Military Geography will be awarded to a candidate with a minimum of **380** credits and who has met the compulsory modules prescribed for this program.

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### **E.1.10. CAREER OPPORTUNITIES**

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Graduates would have an opportunity to work as:

- Military operating environment Officers
- Military Law enforcement
- Historians
- Academic career
- Military Analysts and Policy
- GIS and Remote Sensing
- Cartography
- Civil-Military Relations
- Customs and the Namibian correctional services

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**E.1.11. BACHELOR OF SCIENCE IN MILITARY GEOGRAPHY TABLE FOR ALL MODULES**


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**Qualification: Bachelor of Science in Military Geography 34BSMG**

 Students opting for a **Bachelor of Science in Military Geography** must take all of the following courses:

**YEAR 1**

SEMESTER	MODULE NAME	COURSE CODE	CREDITS	PRE-REQUISITES	CO-REQUISITES
1	Skills Portfolio	U3403FS	NCB	None	None
1	Academic Literacy I	U3583AL	8	None	None
1	Digital Literacy	U3583DD	8	None	None
1	Military Ethics	T3520MG	2	None	None
1	Ethics and Morality	U3420EM	2	None	None
1	National and Global Citizenship	U3420CN	2	None	None
1	Leadership Skills	U3520LP	2	None	None
1	Calculus I	S3511MC	12	None	None
1	General Physics I	S3511PG	14	None	None
1	Concepts and Techniques in Military Geography	T3511MG	12	None	None
1	Fundamentals of Statistics	S3511SF	12	None	None
2	Calculus II	S3512MC	12	S3511MC	None
2	General Physics II	S3512PG	14	S3511PG	None
2	Physical Environment	T3512MG	14	None	None
2	Introduction to Physical Geography	T3532MG	14	None	None
<b>Total Credits</b>			<b>128</b>		

**YEAR 2**

SEMESTER	MODULE NAME	COURSE CODE	CREDITS	PRE-REQUISITES	CO-REQUISITES
1	Academic Literacy II	U3683LB	8	None	None
1	Military Law	T3620MS	8	None	None
1	Entrepreneurship Skills	U3420RT	2	None	None
1	Sustainability and environmental awareness	U3420SE	2	None	None
1	Project management Skills	U3420PJ	2	None	None
1	Critical thinking	U3520TH	2	None	None
2	Electronics	S3611PE	16	None	None
2	Military History	T3611MG	14	None	None
2	Military Human Resource Management	T3641MG	8	None	None
2	Military Topography	T3631MG	8	T3512MG Physical Environment	None
2	Contemporary Political Relations	T3652MG	14	None	None
2	GIS and Remote Sensing I	T3672MG	16	S3512PG General Physics II	None
2	Economics	T3612MG	14	None	None
2	CWIE prep: 8	W3600MG	8	None	None
<b>Total Credits</b>			<b>130</b>		

**YEAR 3**

<b>SEMESTER</b>	<b>MODULE NAME</b>	<b>MODULE CODE</b>	<b>CREDITS</b>	<b>PRE-REQUISITES</b>	<b>CO-REQUISITES</b>
1	Workplace Attachment (6 weeks)	W3700MG	24	None	None
1	Military Psychology	T3731MG	16	None	None
1	GIS and Remote Sensing II	T3751MG	18	T3672MG GIS and Remote Sensing I	
1	Africa and International Political Economy	T3771MG	16	T3652MG Contemporary Political Relations	
2	Geography of Sub-Saharan Africa	T3732MG	16	None	None
2	Military Conduct & Environment	T3772MG	16	None	None
2	Military Management & Leadership	T3752MG	16	None	None
<b>Total Credits</b>			122		

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## E.1.12. BACHELOR OF SCIENCE IN MILITARY GEOGRAPHY COURSE DESCRIPTIONS

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### FIRST YEAR MODULES

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#### T3511MG CONCEPTS AND TECHNIQUES IN MILITARY GEOGRAPHY

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<b>Module Title:</b>	CONCEPTS AND TECHNIQUES IN MILITARY GEOGRAPHY
<b>Module Code</b>	T3511MG
<b>NQF Level</b>	5
<b>Notional Hours</b>	120
<b>Contact hours</b>	4 hours per week for one semester
<b>NQF Credits</b>	12
<b>Prerequisite</b>	None
<b>Course Assessment:</b>	Continuous assessment (Minimum of 3 tests and 2 assignments): 50%. Written examination (1 × 2-hour paper): 50%. Minimum mark to pass the course: 50%.

**Course description:** The origin: nature and traditions of geography. Impact of man on the environment. Population geography: cultural, urban and economic geography. Military geography. Geography of natural resources: regional concept and geography of spatial behaviour.

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#### T3532MG INTRODUCTION TO PHYSICAL GEOGRAPHY

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<b>Module Title:</b>	INTRODUCTION TO PHYSICAL GEOGRAPHY
<b>Module Code:</b>	T3532MG
<b>NQF Level:</b>	5
<b>Notional Hours:</b>	140
<b>Contact hours:</b>	4hours lectures and one practical session per week for one semester. Additional learning requirements: Excursion
<b>NQF Credits:</b>	14
<b>Prerequisite:</b>	None
<b>Course Assessment:</b>	Continuous assessment (Minimum of 2 tests, 3 practical reports and 2 assignments): 50%. Written examination (1 × 2-hour paper): 50%. Minimum mark to pass the course: 50%.

**Course description:** Earth: movements and seasons. Basic facts and mappings. The varieties of surface form: how surface form develops, plains, surfaces rougher than plains, the margins of the land. Introduction to climate: air temperature and solar energy, the circulation of the atmosphere, winds and pressure, precipitation. Hydrosphere, Namibian weather and climate. Climatological data: synoptic weather charts and climogrammes. Atmospheric disturbances: air masses and fronts. Classification of climates and their distribution: the tropical humid climates, the dry climates, humid mesothermal climates, humid microthermal, polar, and highland climates. Water and the seas: the waters of the land. Natural vegetation and soils.

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#### T3512MG PHYSICAL ENVIRONMENT

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<b>Module Title:</b>	PHYSICAL ENVIRONMENT
<b>Module Code:</b>	T3512MG
<b>NQF Level:</b>	5
<b>Notional Hours:</b>	140
<b>Contact hours:</b>	4hours lectures and one practical session per week for one semester. Additional learning requirements
<b>NQF Credits:</b>	14
<b>Prerequisite:</b>	None
<b>Course Assessment:</b>	Continuous assessment (Minimum of 3 tests, 3 practical reports and 2 assignments): 50%. Written examination (1 × 2-hour paper): 50%. Minimum mark to pass the course: 50%.

**Course Descriptions:** Internal structure of the earth: endogenesis of continental, sub-continental and regional scale. Exogenetic processes: weather, mass wasting, fluvial, ground water and karst topography and wind in arid regions. Ocean processes: tides, waves, sea currents, coastal and landform. South African/Namibian geomorphology: landscape, terrain and contour. Stream orders, profiles, slopes and aerial photos

## SECOND YEAR MODULES

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### T3620MS MILITARY LAW

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<b>Module Title:</b>	<b>MILITARY LAW</b>
<b>Module Code:</b>	<b>T3620MS</b>
<b>NQF Level:</b>	<b>6</b>
<b>Notional Hours:</b>	<b>80</b>
<b>Contact hours:</b>	<b>2hours lectures per week for one semester. Additional learning requirements</b>
<b>NQF Credits:</b>	<b>8</b>
<b>Prerequisite:</b>	<b>None</b>
<b>Course Assessment:</b>	Continues assesment (Minimum of three tests and three assignments): 50%. Minimum Mark to pass the module: 50%.

**Course Descriptions:** General introduction to the study of law: The nature and essence of the law; classification of the Namibian law; sources of law; jurisprudence in general. Military Law: Introduction and application; jurisdiction of civil courts; establishment of military courts; military offences; convening authorities; different military courts and its jurisdiction; boards of inquiry; preliminary investigations (PI) and military police investigations; pre-trial procedures; redress of wrongs. Military courts: determining the trial court; duties of the court and officials; procedures; rights of the accused; recording of proceedings; sentencing; confirmations and reviews; right to the review of proceedings. State of emergency in terms of the Namibian Constitution. Defence Act relating to being on service. Status of Force Agreements (SOFA); Memorandum of Understanding (MoU); conduct of visiting forces; Historical background of International Humanitarian Law (IHL), The Geneva Conventions Act, 2003 and International Humanitarian Laws: crimes against humanity; war Crimes; command responsibilities.

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### T3611MG MILITARY HISTORY

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<b>Module Title:</b>	<b>MILITARY HISTORY</b>
<b>Module Code:</b>	<b>T3611MG</b>
<b>NQF Level:</b>	<b>6</b>
<b>Notional Hours:</b>	<b>140</b>
<b>Contact hours:</b>	<b>4 lecture periods per week for the semester.</b>
<b>NQF Credits:</b>	<b>14</b>
<b>Prerequisite:</b>	<b>None</b>
<b>Course Assessment:</b>	Continuous assessment (Minimum of 3 tests and 2 assignments): 50%. Written examination (1 × 3-hour paper): 50%. Minimum mark to pass the course: 50%.

**Course Descriptions:** Introduction to the study of Military History: Basic Concepts in Military History, Military History and Military Professionalism, Evolution of World Military History: Warfare in Antiquity and Medieval Warfare, Warfare in Modern Era, Causes of WW1 and WW2, Continental War Campaigns, War in Imperial Defence, South African Defence Force since 1957 to 1994, the SANDF since 1994, the South African/ Namibian military Historiography, Introduction to War of Resistance and War of Liberation, Integration and Transformation of the NDF since 1990, War and Technology: Revolution in military technology and the influence of Technology on Conventional Warfare.

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### T3641MG MILITARY HUMAN RESOURCES MANAGEMENT

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<b>Module Title:</b>	<b>MILITARY HUMAN RESOURCES MANAGEMENT</b>
<b>Module Code:</b>	<b>T3641MG</b>
<b>NQF Level:</b>	<b>6</b>
<b>Notional Hours:</b>	<b>80</b>
<b>Contact hours:</b>	<b>2hours lectures per week for one semester.</b>
<b>NQF Credits:</b>	<b>8</b>
<b>Prerequisite:</b>	<b>None</b>
<b>Course Assessment:</b>	Continuous assessment (Minimum of 3 tests and 2 assignments): 50%. Written examination (1 × 3-hour paper): 50%. Minimum mark to pass the course: 50%.

**Course Descriptions:** Introduction to the study of Military History: Basic Concepts in Military History, Military History and Military Professionalism, Evolution of World Military History: Warfare in Antiquity and Medieval Warfare, Warfare in Modern Era, Causes of WW1 and WW2, Continental War Campaigns, War in Imperial Defence, South African Defence Force since 1957 to 1994, the SANDF since 1994, the South African/ Namibian military Historiography, Introduction to War of Resistance and War of Liberation, Integration and Transformation of the NDF since 1990, War and Technology: Revolution in military technology and the influence of Technology on Conventional Warfare.

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**T3631MG MILITARY TOPOGRAPHY**

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<b>Module Title:</b>	<b>MILITARY TOPOGRAPHY</b>
<b>Module Code:</b>	<b>T3631MG</b>
<b>NQF Level:</b>	<b>6</b>
<b>Notional Hours:</b>	<b>160</b>
<b>Contact hours:</b>	<b>4 hours lectures and one practical session per week for one semester: Additional learning requirements Excursions</b>
<b>NQF Credits:</b>	<b>16</b>
<b>Prerequisite:</b>	<b>T3512MG Physical Environment</b>
<b>Course Assessment:</b>	Continuous assessment (Minimum of 3 tests and 2 assignments): 50%. Written examination (1 × 2-hour paper): 50%. Minimum mark to pass the course: 50%.

**Course Descriptions:** Topographic maps and projections: distance measurement, symbols, and map coordinates. Global Map projections: different types of projections and the southern and northern hemispheres classifications. Develop digital inter-visibility matrix and terrain profile: steepness of slope and point of variance between two places. Vertical Exaggeration. Calculations and manipulation: using the GIS software "Integration". Digital Terrain Models: development and uses of various DTMS. Soil Classification Model and systems.

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**T3652MG CONTEMPORARY POLITICAL RELATIONS**

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<b>Module Title:</b>	<b>CONTEMPORARY POLITICAL RELATIONS</b>
<b>Module Code:</b>	<b>T3652MG</b>
<b>NQF Level:</b>	<b>6</b>
<b>Notional Hours:</b>	<b>140</b>
<b>Contact hours:</b>	4hours lectures per week for one semester. Additional learning requirements: Field trip
<b>NQF Credits:</b>	<b>14</b>
<b>Prerequisite:</b>	<b>None</b>
<b>Course Assessment:</b>	Continuous assessment (Minimum of 3 tests and 2 assignments): 50%. Written examination (1 × 3-hour paper): 50%. Minimum mark to pass the course: 50%.

**Course Descriptions:** Introductory framework: world events, use of force, international relations. Methodologies in Contemporary Political Relations: Democratic Peace phenomenon, Decision making, international politics and international crises.

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**T3672MG GIS AND REMOTE SENSING I**

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<b>Module Title:</b>	<b>GIS AND REMOTE SENSING I</b>
<b>Module Code:</b>	<b>T3672MG</b>
<b>NQF Level:</b>	<b>6</b>
<b>Notional Hours:</b>	<b>160</b>
<b>Contact hours:</b>	<b>4hours lectures and one practical session per week for one semester</b>
<b>NQF Credits:</b>	<b>16</b>
<b>Prerequisite:</b>	<b>S3512PG General Physics II</b>
<b>Course Assessment:</b>	Continuous Assessment 50% (written Tests, practicals, presentations, Field trips, Assignments and Homework). Written examination 50% (1x 3 Hours Theory paper). Minimum mark to pass the course: 50%.

**Course Description:** Geographic Information Systems: Introduction to information systems and GIS, Functions and Advantages of GIS, Military Applications of GIS: Usage of GIS in the Army, Navy and Maritime Operations and the Air force, GIS layers, Concept of Map: Coordinate System and Projection. GIS Data Representation: Attribute tables, Maps and themes (GIS output). Remote Sensing and its integration in GIS. Remote Sensing basic principles, Remote Sensing platforms and sensors, Basics of Digital image processing: interpretation of remote sensing data, Application of Remote Sensing in Military.

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**T3612MG ECONOMICS**

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<b>Module Title:</b>	<b>ECONOMICS</b>
<b>Module Code:</b>	<b>T3612MG</b>
<b>NQF Level:</b>	<b>6</b>
<b>Notional Hours:</b>	<b>140</b>
<b>Contact hours:</b>	<b>4 Lecture Periods Per Week For One Semester)</b>
<b>Nqf Credits</b>	<b>14</b>
<b>Prerequisite:</b>	<b>None</b>
<b>Course Assessment:</b>	Continuous assessment (Minimum of 3 tests and 2 assignments): 50%. Written examination (1 × 3-hour paper): 50% Minimum mark to pass the course: 50%

**Course description:** Micro-economics: Overview of economic systems. Theory: demand and supply. Elasticity: price, income, demand and supply. Background: utility, consumer equilibrium, budget line. Production theory and cost: basic cost and profit cost, long run and short run cost. Government intervention. Macro-economic: policy objectives and economic analytical models. Public sector: role of government in economy, government intervention and market failure, spending and taxation. Monetary policies: money, financial intermediaries, demand and supply of money, instrument of monetary policy. Defence economics: functions of the defence industry, national and defence budgets, economic warfare, labor economics. Economic systems and thoughts: capitalism, socialism, mixed economy, pre-classical and neo-classical thought. International trade: comparative and absolute advantage. Instrument of trade policy. Exchange: foreign markets, foreign exchange policy or regimes. International finance and debts crisis. Terms of trade: ratio of import and export price. Economic development: measurement of economic growth, business cycle and sources of economic growth.

**THIRD YEAR MODULES**

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**T3731MG MILITARY PSYCHOLOGY**

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<b>Module Title:</b>	<b>MILITARY PSYCHOLOGY</b>
<b>Module Code:</b>	<b>T3731MG</b>
<b>NQF Level:</b>	<b>7</b>
<b>Notional Hours:</b>	<b>160</b>
<b>Contact hours:</b>	<b>4hours lectures per week for one semester</b>
<b>NQF Credits:</b>	<b>16</b>
<b>Prerequisites:</b>	<b>None</b>
<b>Course Assessment:</b>	Continuous assessment (Minimum of 2 tests and 2 assignments): 50%. Written examination (1 × 3-hour paper): 50%. Minimum mark to pass the course: 50%.

**Course Description:** Personality theory and war: role of personality and personality theory of Jung, adjustment psychology: maladjustment and adolescent, transition in military training. Operational psychology: psychological effects of combat, post-traumatic stress disorder. Peacekeeping psychology: model to support soldiers and their dependents, stressors and prisoner of war. Psychological warfare: ethics in war operations.

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**T3771MG AFRICA AND INTERNATIONAL POLITICAL ECONOMY**

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<b>Module Title:</b>	<b>AFRICA AND INTERNATIONAL POLITICAL ECONOMY</b>
<b>Module Code:</b>	<b>T3771MG</b>
<b>NQF Level:</b>	<b>7</b>
<b>Notional Hours:</b>	<b>160</b>
<b>Contact hours:</b>	<b>4hours lectures and one practical session per week for one semester</b>
<b>NQF Credits:</b>	<b>16</b>
<b>Prerequisite:</b>	<b>T3652 Contemporary Political Relations</b>
<b>Course Assessment:</b>	Continuous assessment (Minimum of 3 tests and 2 assignments): 50%. Written examination (1 × 3-hour paper): 50%. Minimum mark to pass the course: 50%.

**Course Description:** Political economy: characteristics of the world economic system, the evolution of the international political economy, Africa's contemporary economic history, internal and external causes of economic decline in Africa. the NEPAD strategy, successful states in the Developing World, U.S.A. foreign aid after September 11, war economies: the U.S.A, China and Africa in contemporary-political economic context. The role of natural resource conflict: Sudan, Angola and Sierra Leone.

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**T3732MG GEOGRAPHY OF SUB-SAHARAN AFRICA**

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**Module Title:** GEOGRAPHY OF SUB-SAHARAN AFRICA  
**Module Code:** T3732MG  
**NQF Level:** 7  
**Notional Hours:** 160  
**Contact hours:** 4hours lectures per week for one semester: Additional learning requirements: Excursion  
**NQF Credits:** 16  
**Prerequisite:** None  
**Course assessment:** Continuous Assessment 50% (written Tests, presentations, Field trips, Assignments and Homework) written examination 50% (1x 3 Hours Theory paper). Minimum mark to pass the course: 50%.

**Course Description:** Landscape: physical and political. Geography: population, medical and urban. Historical background: culture, conflict and change. Agriculture development, human impact on the environment, natural resources, Geographical report writing about the region.

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**T3772MG MILITARY CONDUCT & ENVIRONMENT**

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**Module Title:** MILITARY CONDUCT & ENVIRONMENT  
**Module Code:** T3772MG  
**NQF Level:** 7  
**Notional Hours:** 160  
**Contact hours:** 4hours lectures per week for one semester  
**NQF Credits:** 16  
**Prerequisite:** None  
**Course Assessment:** Continuous assessment (Minimum of 3 tests and 2 assignments): 50%. Written examination (1 × 2-hour paper): 50%. Minimum mark to pass the course: 50%.

**Course Description:** Military actions. Environment: theories and systems. Environmental: management, resources, conflict, urban and related problems. Law: South African and Namibian. Data capturing techniques: sampling techniques, questionnaires and workshops. Data processing and interpretation. Procedure for the environmental impact assessment

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**T3752MG MILITARY MANAGEMENT & LEADERSHIP**

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**Module Title:** MILITARY MANAGEMENT & LEADERSHIP  
**Module Code:** T3752MG  
**NQF Level:** 7  
**Notional Hours:** 160  
**Contact hours:** 4hours lectures per week for one semester  
**NQF Credits:** 16  
**Prerequisite:** None  
**Course Assessment:** Continuous assessment (Minimum of 3 tests and 2 assignments): 50%. Written examination (1 × 2-hour paper): 50%. Minimum mark to pass the course: 50%.

**Course Description:** Leadership processes: Leadership ethics, types and style of leadership, roles and ethics of commander, obedience and order, application of military ethics, code of conduct of the NDF and the Constitution of Namibia. Management: general, environment and diversity. Planning: skills, creative problem solving, strategy and operational processes and organizing skills. Organizing and delegation: management of change, power, conflict and stress, control of human resources and finance controls in organization.

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**T3751MG GIS AND REMOTE SENSING II**

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**Module Title:** GIS AND REMOTE SENSING II  
**Module Code:** T3751MG  
**NQF Level:** 7  
**Notional Hours:** 180  
**Contact hours:** 4hours lectures per week and one 3-hour practical session per week for one semester.  
**NQF Credits:** 18  
**Prerequisite:** T3672MG GIS & Remote Sensing I  
**Course Assessment:** Continuous Assessment 50% (written Tests, presentations, Field trips, Assignments, Homework and practical reports).Written examination 50% (1x 3 Hours Theory paper). Minimum mark to pass the course: 50%.

**Course Description:** Geographic Information Systems: Data entry and preparation (Spatial data collection). Spatial problem analysis: spatial data analysis, Concept of Metadata: Roles of Metadata in GIS. Remote Sensing and its integration in GIS: Overview of advances in satellite technology in the Military, Data acquisition, image formats and conversion. Geometric and Radiometric correction, Digital Image interpretation and analysis, Fundamentals of DEM generation and quality assessment.



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## **E.2. POSTGRADUATE PROGRAMMES**

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### **E.2.1. POSTGRADUATE DIPLOMA IN SECURITY AND STRATEGIC STUDIES - 1 YEAR FULL-TIME**

The one-year **Postgraduate Diploma in Security and Strategic Studies** programme provides graduates with the theoretical and practical context of international political economy and international security as well as practical skills in diplomacy, protocol and negotiation techniques in preparation for a wide range of career choices in international relations. The programme aligns closely with national, regional and international vision of ensuring an atmosphere of peace, security, better life and democracy. Graduates of the programmes can **articulate** into the Master's in Security and Strategic Studies (MASSS) programme.

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### **E.2.2. ADMISSION REQUIREMENTS**

Students may be admitted to this programme if they meet the General Admission Requirements of the University of Namibia and comply with additional requirements as follows:

- Prospective students must be in possession of a **Bachelor's degree** or **an equivalent degree** from the University of Namibia or any other recognised institution of higher learning.
- Prospective students whose academic qualifications are not in the **social sciences** may be required to write a **one-page submission** to articulate the goals of their undertaking the Postgraduate studies, and the School reserves the right to interview applicants.
- **Submission of an application** for admission to the Postgraduate Diploma in Security and Strategic Studies programme does not guarantee admission to the programme.

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### **E.2.3. ADDITIONAL ADMISSION**

Where too many students qualify for the programme and the department can only admit a certain number due to space and capacity limitations, the following criteria will be followed:

Preference will be given to Namibia Defence Force (NDF) sponsored/recommended students. The department will interview and assess prospective students to determine their level of knowledge of national, regional, and global security issues and their ability to conceptualize and analyse issues. Preference will be given to applicants with background in the social sciences.

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### **E.2.4. DURATION OF STUDY**

1 year programme

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### **E.2.5. MODE OF DELIVERY**

Blended mode

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### **E.2.6. ASSESSMENT CRITERIA**

- A minimum CA Mark of **40%** is required to gain entrance into relevant module examination.
- The final mark for each module will be calculated using a ratio of CA mark: Exam mark of **50:50**
- In order to pass a module, a minimum final mark of **50%** is required.

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### **E.2.7. MINIMUM REQUIREMENTS FOR RE-ADMISSION INTO THE SCHOOL/PROGRAMME**

The PGDSSS is a year programme. To be re-admitted to the PGDSSS programme, a student must have successfully completed the following minimum number of credits as indicated below:

- **64 credits** by the end of **the first year** of registration.
- **128 credits** by the end of the **second year** of registration.

The programme must be completed after **a maximum of 2 years** of registration

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**E.2.8. ADVANCEMENT AND PROGRESSION RULES**

The following re-admission regulations will apply to students enrolled for the extended programme: To be re-admitted to the PGDSS programme, a student must have successfully completed the following minimum number of credits as indicated below:

- 64 credits by the end of the first year of registration.
- 128 credits by the end of the second year of registration

The programme must be completed after a maximum of 2 years of registration

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**E.2.9. REQUIREMENTS FOR QUALIFICATION AWARD**

This qualification will be awarded to candidates credited with a minimum of 128 credits, including completion of research project component of the programme.

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**E.2.10. ARTICULATION ROUTES**

A student without a background in the social sciences or whose qualification has been determined by the NQA as not comparable or equivalent to Namibia's Bachelor Honours degree can be admitted into the one-year Postgraduate Diploma in Security and Strategic Studies in order to articulate into the Master's programme.

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**E.2.11. POSTGRADUATE DIPLOMA IN SECURITY AND STRATEGIC STUDIES TABLE OF ALL MODULES**

Qualification: Postgraduate Diploma in Security and Strategic Studies 34PDSS

Students opting for a Postgraduate Diploma in Security and Strategic Studies must take all of the following courses:

**YEAR 1**

SEMESTER	MODULE NAME	COURSE CODE	CREDITS	PRE-REQUISITES/COREREQUISITE	COMPULSORY/ELECTIVE
<b>Year 1 Semester 0</b>					
1	Academic Writing for Post-Graduate Students	U3583AL	0	None	C
1	Research Methodology & Project Proposal	T3810AR	14	None	C
1	Public Policy Analysis	T5800MP	9	None	C
1	The Construct of Security	T5821MC	9	None	C
1	Contemporary World Politics	T5811MC	18	None	C
1	Strategic Studies and Management	T5831MS	18	None	C
1&2	Research Project	T5892MR	8	Research Methodology & Project Proposal	C
1	Security Sector and Democracy	T5852MS	18	None	C
1	Diplomatic Studies	T5872MD	18	None	C
1	Public Safety and Rule of Law	T5842MP	9	None	E
1	Military History	T5862MM	9	None	E
2	Political Economy of Food Security	T5802MP	9	None	E
Total credit					<b>129</b>

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**E.2.12. POSTGRADUATE DIPLOMA IN SECURITY AND STRATEGIC STUDIES MODULE DESCRIPTIONS**

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**T3810AR Research Methodology and Project Proposal**

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**Course Title:** Research Methodology and Project Proposal  
**Code:** T3810AR  
**NQF Level:** 8  
**Contact hours:** 4 lecture hours per week  
**Credits:** 14  
**Course Assessment:** 50% of the final mark consisting of a minimum of 3 (three) assessments  
**Examination** 50% (3 hours examination paper)  
**Prerequisites:** None

**Course description:** This module is designed to address the fundamentals of research in different areas within the context of national development and security. It seeks to inculcate the appropriate skills and knowledge thereby empowering the students to design and undertake research, using expertise gained for the good of the society.

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**T5800MP Public Policy Analysis**

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**Course Title:** Public Policy Analysis  
**Code:** T5800MP  
**NQF Level:** 8  
**Contact hours:** 2 lecture hours per week  
**Credits:** 9  
**Course Assessment:** 50% of the final mark consisting of a minimum of 3 (three) assessments  
**Examination** 50% (3 hours examination paper)  
**Prerequisites:** None

**Course description:** The module seeks to inculcate in students a sense of appreciation of the need and the complexity of the public policy process; and to provide an understanding of policy theories and conceptual framework and rationale. To facilitate academic discussions on policy functions, processes, scope, domains and arena, levels, quality of actors, and the instruments for implementation and evaluation; and the role of public policy in national development and international co-existence.

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**T5821MC The Construct of Security**

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**Course Title:** The Construct of Security  
**Code:** T5821MC  
**NQF Level:** 8  
**Contact hours:** 2 lecture hours per week  
**Credits:** 9  
**Course Assessment:** 50% of the final mark consisting of a minimum of 3 (three) assessments  
**Examination** 50% (3 hours examination paper)  
**Prerequisites:** None

**Course description:** The module seeks to instil in students the ability to appreciate the complexity of state and human security as social constructs; and to provide an evaluation of security and strategic theories as a means of facilitating empirical and academic discussions on policies, processes, scope, and role of state and non-state actors, in human security and development nationally, regionally and globally.

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**T5811MC Contemporary World Politics**

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**Course Title:** Contemporary World Politics  
**Code:** T5811MC  
**NQF Level:** 8  
**Contact hours:** 4 lecture hours per week  
**Credits:** 18  
**Course Assessment:** 50% of the final mark consisting of a minimum of 3 (three) assessments  
**Examination** 50% (3 hours examination paper)  
**Prerequisites:** None

**Course description:** The purpose of this module is to provide students with an understanding of current issues, dynamics and challenges in contemporary international politics.

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<b>T5831MS</b>	<b>Strategic Studies and Management</b>
<b>Course Title:</b>	<b>Strategic Studies and Management</b>
<b>Code:</b>	<b>T5831MS</b>
<b>NQF Level:</b>	<b>8</b>
<b>Contact hours:</b>	4 lecture hours per week
<b>Credits:</b>	<b>18</b>
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a minimum of 3 (three) assessments
<b>Examination</b>	<b>50%</b> (3 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description:</b> The purpose of this module is to provide broader empirical and theoretical approaches to the understanding of conceptual debates, and historical developments in strategic studies and management; the philosophical foundation of defence economics, budgeting, planning and procurement processes.	
<b>T5852MS</b>	<b>Security Sector and Democracy</b>
<b>Course Title:</b>	<b>Security Sector and Democracy</b>
<b>Code:</b>	<b>T5852MS</b>
<b>NQF Level:</b>	<b>8</b>
<b>Contact hours:</b>	4 lecture hours per week
<b>Credits:</b>	<b>18</b>
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a minimum of 3 (three) assessments
<b>Examination</b>	<b>50%</b> (3 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description:</b> The module is designed to expose students to a plethora of security and democratic themes. Security for people, communities and states is essential for sustainable development, democratization and conflict mitigation. Politicised, badly managed or ineffective security bodies and justice systems often create instability and insecurity, largely due to the lack of effective democratic systems.	
<b>T5872MD</b>	<b>Diplomatic Studies</b>
<b>Course Title:</b>	<b>Security Sector and Democracy</b>
<b>Code:</b>	<b>T5872MD</b>
<b>NQF Level:</b>	<b>8</b>
<b>Contact hours:</b>	4 lecture hours per week
<b>Credits:</b>	<b>18</b>
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a minimum of 3 (three) assessments
<b>Examination</b>	<b>50%</b> (3 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description:</b> This module is designed to prepare students with the knowledge and skills required for diplomacy in present and future global dispensations. The knowledge and skills acquired from this module will help the students build a successful diplomatic career within the Ministry of International Relations and Cooperation (MIRCO), international organization or the defence, safety and security sector.	
<b>T5842MP</b>	<b>Public Safety and Rule of Law</b>
<b>Course Title:</b>	<b>Public Safety and Rule of Law</b>
<b>Code:</b>	<b>T5842MP</b>
<b>NQF Level:</b>	<b>8</b>
<b>Contact hours:</b>	2 lecture hours per week
<b>Credits:</b>	<b>9</b>
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a minimum of 3 (three) assessments
<b>Examination</b>	<b>50%</b> (3 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description:</b> The purpose of this module is to provide broad understanding of public safety from policing and crime prevention perspective by addressing crime as a threat to public safety and social order. It focuses on the rule of law and its key principles as a tool that promotes the aspirations of democracy and justice for all.	

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<b>T5862MH</b>	<b>Military History</b>
<b>Course Title:</b>	<b>Military History</b>
<b>Code:</b>	<b>T5862MH</b>
<b>NQF Level:</b>	<b>8</b>
<b>Contact hours:</b>	2 lecture hours per week
<b>Credits:</b>	<b>9</b>
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a minimum of 3 (three) assessments
<b>Examination</b>	<b>50%</b> (3 hours examination paper)
<b>Prerequisites:</b>	None

**Course description:** The module is designed to expose students to a plethora of historical records narrating the history, or advent, of armed conflicts and the impact wars have on societies that engaged in them. Students are to be equipped with appropriate competencies and knowledge in terms of military history of Africa.

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<b>T5882MP</b>	<b>Political Economy of Food Security</b>
<b>Course Title:</b>	<b>Political Economy of Food Security</b>
<b>Code:</b>	<b>T5882MP</b>
<b>NQF Level:</b>	<b>8</b>
<b>Contact hours:</b>	2 lecture hours per week
<b>Credits:</b>	<b>9</b>
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a minimum of 3 (three) assessments
<b>Examination</b>	<b>50%</b> (3 hours examination paper)
<b>Prerequisites:</b>	None

**Course description:** This module is designed to inculcate in the students the, knowledge and analytical skills at the intersection of politics, economics and agriculture. The students will acquire knowledge on how public policies as well as political issues such as globalization, affect food production, food availability, accessibility, and stability in a country.

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### **E.3. MASTER OF SECURITY AND STRATEGIC STUDIES**

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The programme is designed to prepare graduates with appropriate knowledge and skills in defence diplomacy, military leadership, weapon systems, spheres of engagement, strategy, intelligence and translational research necessary for careers in the defence and security sector as a way of ensuring an atmosphere of peace, security, better life and democracy in Namibia and the world. The programme fulfils Sustainable Development Goals (SDGs) number 16- *to promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels.*

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#### **E.3.1. ADMISSION REQUIREMENTS**

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Students may be admitted to this programme if they meet the General Admission Requirements of the University of Namibia and comply with additional requirements below:

- A student must have a good Bachelor Honours degree in the Social Sciences, preferably Political Science, International Relations, Public Administration, and Economics, Sociology, Diplomatic History with at least a C-grade average, from the University of Namibia or equivalent to be admitted directly into the programme.
- A student must have a Postgraduate Diploma in Security and Strategic Studies from the University of Namibia or a comparable level 8 diploma in Political Science, International Relations, Public Administration, and Economics, sociology, Diplomatic History to be admitted directly into the MASSS programme.
- A prospective student may be interviewed and assessed before recommending his/her application to the relevant UNAM structures.

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#### **E.3.2. ADDITIONAL SELECTION CRITERIA**

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Where too many students qualify for the programme and the department can only admit a certain number due to space and capacity limitations, the following criteria will be followed:

The department will interview and assess prospective students to determine their level of knowledge of national, regional, and global security issues and their ability to conceptualize and analyze issues.

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#### **E.3.3. DURATION OF STUDY**

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2 years

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#### **E.3.4. MODE OF DELIVERY**

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Blended mode

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#### **E.3.5. ASSESSMENT CRITERIA**

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- A minimum CA Mark of 40% is required to gain entrance into the relevant module examination.
- In order to pass a module, a minimum final mark of 50% is required.
- The final mark for each module will be calculated using a ratio of CA mark: Exam mark of 50:50
- Notwithstanding the above, a subminimum of at least 40% will apply to the Exam Mark, unless otherwise stated in the individual module descriptor.

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#### **E.3.6. MINIMUM REQUIREMENTS FOR RE-ADMISSION INTO THE SCHOOL/PROGRAMME**

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##### **Normal enrollment**

The MASSS is a two-year programme. To be re-admitted to the School of Military Science, and the MASSS programme, a student must have successfully completed the following minimum number of credits as indicated below:

234 credits by the end of the first year of registration.

258 credits by the end of the second year of registration

The programme must be completed after a maximum of 6 years of registration

##### **Extended enrollment**

The MASSS is a two-year programme. The following re-admission regulations will apply to students enrolled for the extended programme: To be re-admitted to the School of Military Science, and the MASSS programme, a student must have successfully completed the following minimum number of credits as indicated below:

144 credits by the end of the first year of registration.

234 credits by the end of the second year of registration

The programme must be completed after a maximum of 4 years of registration

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**E.3.7. ADVANCEMENT AND PROGRESSION RULES**

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Year 1 to Year 2: At least 168 credits.

Year 2: All first-year credits in addition to at least 48 second year credits

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**E.3.8. REQUIREMENTS FOR QUALIFICATION AWARD**

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This qualification will be awarded to candidates credited with a minimum of 258 credits, including completion of thesis component of the programme.

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**E.3.9. ARTICULATION ROUTES**

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A student without a background in Political Science, International Relations, Public Administration, and Economics, Sociology, or Diplomatic History or whose qualification has been determined by the NQA as not comparable or equivalent to Namibia's Bachelor Honours degree may be required to do the one-year Postgraduate Diploma in Security and Strategic Studies to articulate into the Master's programme.

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**E.3.10. MASTER OF SECURITY AND STRATEGIC STUDIES TABLE OF ALL MODULES**

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**YEAR 1**

SEMESTER	MODULE NAME	COURSE CODE	CREDITS	PRE-REQUISITES/COREREQUISITE	COMPULSORY/ELECTIVE
<b>Year 1 Semester 0</b>					
1	Academic Writing for Post-Students	U3583AL	NCB (18)	None	C
	The Construct of Security	T6910MT	24	None	C
1	Contemporary World Politics	T6930MC	24	None	C
1	Strategic Management	T6901MS	12	None	C
1	African International Relations	T6951MA	24	None	C
1	Research Methodology	T6971MR	24	None	C
	National Security and Development	T6912MN	24	None	C
	Intelligence Culture	T6932MI	24	None	C
	Comparative Foreign Policy	T6902MC	24	None	C
	Strategic Geopolitics	T6911MS	24	None	C
	Thesis	T6972MT	24	None	C
<b>Total credit</b>					<b>252</b>

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**E.3.11. MASTER OF SECURITY AND STRATEGIC STUDIES MODULE DESCRIPTOR**

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**U3583AL Academic Writing for Postgraduate Students**

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**Course Title:** Academic writing for Postgraduate Students  
**Code:** U3583AL  
**NQF Level:** 9  
**Contact hours:** 4 lecture hours per weeks  
**Credits:** 24  
**Course Assessment:** 50% of the final mark consisting of a minimum of 3 (three) assessments  
**Examination** 50% (3 hours examination paper)  
**Prerequisites:** None

**Course description:** Empower students with skills and knowledge to access and critique academic sources and to synthesize information from these sources to assist them in the substantiation and development of their own claims when writing academic papers in their respective fields of specialization

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**T6910MC The construct of Security**

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**Course Title:** The construct of Security  
**Code:** T6910MC  
**NQF Level:** 9  
**Contact hours:** 4 lecture hours per day for 3 weeks  
**Credits:** 24  
**Course Assessment:** 50% of the final mark consisting of a minimum of 3 (three) assessments  
**Examination** 50% (3 hours examination paper)  
**Prerequisites:** None

**Course description:** The purpose of this module is to broaden students' knowledge about security beyond the traditional understanding of the concept as relating mainly to state security to encompass human security as well as societal and environmental security.

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**T6930MC Contemporary World Politics**

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**Course Title:** Contemporary World Politics  
**Code:** T6930MC  
**NQF Level:** 9  
**Contact hours:** 4 lecture hours per day for 3 weeks  
**Credits:** 24  
**Course Assessment:** 50% of the final mark consisting of a minimum of 3 (three) assessments  
**Examination** 50% (3 hours examination paper)  
**Prerequisites:** None

**Course description:** The purpose of this module is to provide students with a critical disposition of competing theories and practices of contemporary world politics, globalization, conflict and security in the international system to and for them to evaluate contemporary issues in world politics. Case studies relevant to understanding of contemporary global security challenges are also explored.

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**T6901MS Strategic Management**

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**Course Title:** Strategic Management  
**Code:** T6901MS  
**NQF Level:** 9  
**Contact hours:** 4 lecture hours per day for 3 weeks  
**Credits:** 24  
**Course Assessment:** 50% of the final mark consisting of a minimum of 3 (three) assessments  
**Examination** 50% (3 hours examination paper)  
**Prerequisites:** None

**Course description:** This module is designed to inculcate in students the best approaches to achieve a competitive advantage and assurances of a long-term success in managing security sector institutions.



<b>T6951MA</b>	<b>African International Relations</b>
<b>Course Title:</b>	<b>African International Relations</b>
<b>Code:</b>	<b>T6951MA</b>
<b>NQF Level:</b>	<b>9</b>
<b>Contact hours:</b>	4 lecture hours per day for 3 weeks
<b>Credits:</b>	<b>24</b>
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a minimum of 3 (three) assessments
<b>Examination</b>	<b>50%</b> (3 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description:</b>	The purpose of this module is to explore pre-colonial and post-colonial international relations of African states and how these experiences impact on national and regional security. The module focuses on the colonial experiences of African states, the struggle for independence and the meaning of statehood in the context of Africa. Other themes include African trade relations, politics, conflicts and cooperation among African states, diplomatic strategies for engaging with global powers, economic crisis and contemporary problems of terrorism and insecurity.
<b>T6971MR</b>	<b>Research Methodology</b>
<b>Course Title:</b>	<b>Research Methodology</b>
<b>Code:</b>	<b>T6971MR</b>
<b>NQF Level:</b>	<b>9</b>
<b>Contact hours:</b>	4 lecture hours per day for 3 weeks
<b>Credits:</b>	<b>24</b>
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a minimum of 3 (three) assessments
<b>Examination</b>	<b>50%</b> (3 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description:</b>	This module is designed to address the fundamentals of research on social issues within the context national development and security. It seeks to inculcate the appropriate skills and knowledge thereby empowering the students to design and undertake research, using expertise gained for the good of the society.
<b>T691MN</b>	<b>National Security and Development</b>
<b>Course Title:</b>	<b>National Security and Development</b>
<b>Code:</b>	<b>T691MN</b>
<b>NQF Level:</b>	<b>9</b>
<b>Contact hours:</b>	4 lecture hours per day for 3 weeks
<b>Credits:</b>	<b>24</b>
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a minimum of 3 (three) assessments
<b>Examination</b>	<b>50%</b> (3 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description:</b>	This module is designed to inculcate in students the relationship between security in its broadened sense and development. Without meaningful development there will be no security and without adequate security there will be no meaningful development. Both are mutually interlinked and reinforcing.
<b>T6932MI</b>	<b>Intelligence Culture</b>
<b>Course Title:</b>	<b>Intelligence Culture</b>
<b>Code:</b>	<b>T6932MI</b>
<b>NQF Level:</b>	<b>9</b>
<b>Contact hours:</b>	4 lecture hours per day for 3 weeks
<b>Credits:</b>	<b>24</b>
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a minimum of 3 (three) assessments
<b>Examination</b>	<b>50%</b> (3 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description:</b>	This module is designed to broaden the students' knowledge of strategic intelligence as a critical component of national security. National security is closely, related to threat perception, and threat perception is in turn largely dependent on sound strategic intelligence. Contemporary theory and practice as far as strategic intelligence is concerned; the question of control over the intelligence process; and the current focus of intelligence agencies and several others are, explored in this module. Specific attention is however, focused on the Namibian situation.

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<b>T6902MC</b>	<b>Comparative Foreign Policy</b>
<b>Course Title:</b>	<b>Comparative Foreign Policy</b>
<b>Code:</b>	<b>T6902MC</b>
<b>NQF Level:</b>	<b>9</b>
<b>Contact hours:</b>	4 lecture hours per day for 3 weeks
<b>Credits:</b>	<b>24</b>
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a minimum of 3 (three) assessments
<b>Examination</b>	<b>50%</b> (3 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description:</b>	This module is designed to inculcate in students the idea about foreign policy formulation and analysis and the ability to compare and contrast the foreign policies of different countries.

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<b>T6911MS</b>	<b>Strategic Geopolitics</b>
<b>Course Title:</b>	<b>Strategic Geopolitics</b>
<b>Code:</b>	<b>T6911MS</b>
<b>NQF Level:</b>	<b>9</b>
<b>Contact hours:</b>	4 lecture hours per day for 3 weeks.
<b>Credits:</b>	<b>24</b>
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a minimum of 3 (three) assessments
<b>Examination</b>	<b>50%</b> (3 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description:</b>	The purpose of this module is to: make the students understand the interplay between geography and politics- how geographic resources influence and determine interactions between states and how politics in turn determine or influence the facts of geography.

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<b>T6972MT</b>	<b>Thesis</b>
<b>Course Title:</b>	<b>Thesis</b>
<b>Code:</b>	<b>T6972MT</b>
<b>NQF Level:</b>	<b>9</b>
<b>Contact hours:</b>	4 lecture hours per day for 3 weeks.
<b>Credits:</b>	<b>24</b>
<b>Course Assessment:</b>	<b>50%</b> of the final mark consisting of a minimum of 3 (three) assessments
<b>Examination</b>	<b>50%</b> (3 hours examination paper)
<b>Prerequisites:</b>	None
<b>Course description:</b>	Students who successfully complete the taught courses shall undertake research project, demonstrating his or her mastery of the subject matter of Security and Strategic Studies

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## F. DEPARTMENT OF NAUTICAL SCIENCE

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### F.1. ADMISSION REQUIREMENTS

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The minimum entry requirements for admission into first year **Bachelor of Science in Nautical Science** are as follows:

Candidates must be NDF officers at the rank of Leading Seaman to Lt. Cmdr./equivalent as recommended by the Ministry of Defence and Veteran Affairs (MoDVA) or general public students.

In addition to the admission requirement

#### ADMISSION BASED ON NAMIBIAN SCHOOL LEAVING CERTIFICATES 2021 ONWARDS

##### EITHER

##### A pass in five different subjects as follows:

- (a) Maths and Physics on NSSCAS level with an average "d" or Higher.
- (b) 3 Subjects on NSSCO level with a "C" or higher (Chemistry or Geography inclusive).
- (c) English must be at minimum "C" at NSSCO level.

##### OR

##### A pass in five different subjects as follows:

- (a) 3 Subjects on NSSCAS level with an average "d" or Higher (Maths and Physics inclusive).
- (b) 2 Subjects on NSSCO level with a D or higher (Chemistry or Geography inclusive).
- (c) English must be at minimum C at NSSCO level.

Complementary subjects: Design and Technology, Mechanics and Technical Drawing

#### ADMISSION BASED ON NAMIBIAN SCHOOL LEAVING CERTIFICATES PRIOR TO 2021

Candidates in possession of a valid Namibian Senior Secondary Certificate (NSSC) issued **prior to 2021** (only) and has a pass in 5 different subjects, as outlined below, can enroll in the *Extended mode* of this programme:

##### EITHER

##### A pass in five (5) different subjects with

- (a) Two (2) subjects on NSSCH with 4 or higher,
- (b) Three (3) subjects on NSSCO with C or higher, and additionally,
- (c) English, Mathematics and Physical Science must be at minimum a C on NSSCO.

##### OR

##### A pass in five (5) different subjects with

- (a) Three (3) subjects on NSSCH with 4 or higher,
- (b) Two (2) subjects on NSSCO with C or higher, and additionally,
- (c) English, Mathematics and Physical Science must be at minimum a C on NSSCO.

Complementary subjects: Design and Technology, Mechanics and Technical Drawing

#### Additional Selection Criteria

The selection of candidates will be done based on the highest points on the UNAM evaluation scale guided by matters of equity as outlined by national policies (such as Gender and Regional Representation).

#### Mature Entry Scheme

Candidates should

1. Be at least 25 years old on the 1<sup>st</sup> day of the academic year in which admission is sought,
2. Have at least completed senior secondary education, and
3. Have proof of at least 5 years' relevant work experience relevant to the proposed study programme.

Additionally, such candidates will sit for four (4) Mature Age Entry Examination papers, which are covering the topics of

1. **English Proficiency,**
2. **General Knowledge,**
3. **Mathematical Ability,** and
4. **Physical Science.**
5. A **60%** average of all the papers is required, with no paper below **50%**.

Another way of entering the programme is through **Recognition of Prior Learning (RPL)** according to the UNAM RPL policy. Depending on the content of a qualifying candidate's RPL portfolio placement in the programme can be accomplished at the discretion of the Head of Department, into either the Normal mode or the Extended mode of this programme.

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### **F.1.1. RE-ADMISSION REGULATIONS**

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To be re-admitted into the **Bachelor of Science in Nautical Science** Program for a particular year of registration, a student must have passed the minimum number of credits as indicated below:

#### **Normal enrolment**

55 credits (of which 24 must be non-core) by the end of the first year of registration  
106 credits (of which 82 must be non-core) by the end of the second year of registration  
132 credits by the end of the third year of registration  
186 credits by the end of the fourth year of registration

The programme must be completed within a maximum of 5 years of registration.

#### **Extended enrolment**

32 number of credits (of which 12 must be non-core) by the end of the first year of registration  
92 number of credits (of which 28 must be non-core) by the end of the second year of registration  
120 number of credits by the end of the third year of registration  
164 number of credits by the end of the fourth year of registration  
220 number of credits by the end of the fifth year of registration

The programme must be completed after a maximum of 6 years of registration

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### **F.1.2. ADVANCEMENT AND PROGRESSION RULES**

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A student advances to the subsequent academic year of study when the following conditions have been met in terms of the Programme year structure. In all cases prerequisites for modules have to be passed before a student can proceed to register for modules that require prerequisites.

#### **Normal enrolment**

Year 1 to Year 2: At least 112 credits including the UNAM Core Modules  
Year 2 to Year 3: All first-year credits (128 credits) in addition to at least 87 second-year credits

#### **Extended enrolment**

Year 1 to Year 2: At least 60 credits  
Year 2 to Year 3: All first-year credits in addition to at least 64 second year credits  
Year 3 to Year 4: All second-year credits and at least 54 third year credits

A student who **fulfilled the re-admission regulations** but **could not advance** to the **next academic year** must first register for **all failed modules**. Subject to **pre-requisites**, such a student may then **add modules of the subsequent academic year**, provided that the total number of registered credits **does not exceed the prescribed number of credits of the current academic year** by more than **20%**.

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### **F.1.3. ARTICULATION OPTIONS**

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Bachelor of Science in Nautical Science, serves as the entry point for the Bachelor of Science in Nautical Science (hons) and postgraduate diplomas

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### **F.1.4. ASSESSMENT CRITERIA**

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For modules assessed with Continuous Assessment (CA) and Examination  
Unless otherwise indicated, the relationship between the **CA** mark and the Examination mark is **50:50**

A minimum CA mark of **40%** is required to gain entrance into the relevant module examination.  
The final mark for each module shall be calculated using a ratio of the CA mark: examination mark of 50%:50% and to pass such a module, a minimum final mark of **50%** shall be required.  
Notwithstanding the results of the mark above, a sub-minimum of at least **40%** shall apply to the Exam mark.  
To qualify for a supplementary exam, a final mark of **45-49%** is required, subject to a sub-minimum of 40% in the exam.

For **100%** continuous assessment modules, final mark of **50%** shall be required to pass.

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### **F.1.5. REQUIREMENTS FOR QUALIFICATION AWARD**

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This qualification will be awarded to candidates credited with a minimum of 388 credits and who have met the requirements of the prescribed curriculum and have met all other relevant UNAM requirements.

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### **F.1.6. CAREER OPPORTUNITIES**

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Graduates would have an opportunity to work in areas such as:

1. Maritime Vessel Navigation
2. Naval operations
3. MV Watch Keeping
4. Bridge/Deck personnel
5. Plant and Machinery operations
6. Marine Vehicle maintenance
7. Marine Vehicle surveying

### F.1.7. BACHELOR OF SCIENCE IN NAUTICAL SCIENCE TABLE FOR ALL MODULES

**Qualification: Bachelor of Science in Nautical Science 34BSNS**

Students opting for a **Bachelor of Science in Nautical Science** must take all of the following courses:

#### YEAR 1

SEMESTER	MODULE NAME	COURSE CODE	CREDITS	PRE-REQUISITES	CO-REQUISITES
<b>Year 1 Core Semester 1</b>					
1	Skills Portfolio	U3403FS	NCB	None	None
1	Academic Literacy 1A	U3583AL	8	None	None
1	Digital Literacy	U3583DD	8	None	None
1	Basics of Technical Drawing	T3520NS	2	None	None
1	Ethics and Morality	U3420EM	2	None	None
1	National and Global Citizenship	U3420CN	2	None	None
1	Leadership Skills	U3520LP	2	None	None
<b>Year 1 Semester 1</b>					
1	Calculus I	S3511MC	12	None	None
1	General Physics I	S3511PG	14	None	None
1	Introduction to the Maritime Industry	T3511NS	12	None	None
1	Fundamentals of Statistics	S3511SF	12	None	None
<b>Year 1 Semester 2</b>					
2	Calculus II	S3512MC	12	S3511MC	None
2	General Physics II	S3512PG	14	None	S3511PG
2	International Law of the sea	T3522NS	7	None	None
2	Introduction to Digital Electronics	S3532DI	14	None	None
2	Naval Warfare	T3502NS	7	None	None
	Workplace Attachment I: (6 weeks)		NCB	None	None
<b>Total Credits</b>			<b>128</b>		

#### YEAR 2

SEMESTER	MODULE NAME	COURSE CODE	CREDITS	PRE-REQUISITES	CO-REQUISITES
<b>Year 2 Core Semester 2</b>					
1	Academic Literacy IB	U3683AL	8	None	None
1	Military Law	T3620MS	8	None	None
1	Entrepreneurship Skills	U3420RT	2	None	None
1	Sustainability and environmental awareness	U3420SE	2	None	None
1	Project management Skills	U3420PJ	2	None	None
1	Introduction to Critical thinking	U3520TH	2	None	None
<b>Year 2 Semester 1</b>					
1	Electronics	S3611PE	16	S3512PG	None
<b>CHOOSE ANY ONE</b>					
1	Naval Weapon Systems	T3601NS	8	T3502NS	None
1	Computer Methods	S3601PC		None	None
1	Seamanship	T3631NS	16	T3502NS	None
1	Marine Propulsion	T3651NS	14	T3502NS	None
<b>Year 2 Semester 2</b>					
2	Maritime Navigation I	T3612NS	16	T3631NS	None
2	Ship Stability and Control I	T3632NS	14	T3651NS	None
2	Marine Radio Communications	T3652NS	16	T3631NS	None
2	CWIE Preparation	T3602NS	8	None	None
2	Workplace Attachment 2: (6 weeks)		NCB	None	None
<b>Total Credits</b>			<b>132</b>		

**YEAR 3**

SEMESTER	MODULE NAME	MODULE CODE	CREDITS	PRE-REQUISITES	CO-REQUISITES
<b>Year 3 Core Semester 3</b>					
1	Workplace Attachment (6 weeks)	W3700IC	24	None	None
<b>Year 3 Semester 1</b>					
1	Military Psychology	T3721MG	9	None	None
1	Vessel Auxiliary Machinery	T3711NS	18	T3651NS	None
1	Ship Stability and Control II	T3721NS	9	T3632NS	None
1	Maritime Navigation II	T3731NS	18	T3612NS	None
<b>Year 3 Semester 2</b>					
2	Ship Electrical Power Systems	T3712NS	16	T3711NS	None
2	Material and Process Technology	T3742NS	9	S3512PG	None
2	Ship Design & Performance	T3732NS	16	T3711NS	None
2	Advanced Ship Electronics	T3722NS	9	S3611PE	None
<b>Total Credits</b>			128		
<b>Total Credit BSc Nautical Science</b>			388		

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## F.1.8. BACHELOR OF SCIENCE IN NAUTICAL SCIENCE COURSE DESCRIPTIONS

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### YEAR 1

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#### T3520NS BASICS OF TECHNICAL DRAWING

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**Course title:** BASICS OF TECHNICAL DRAWING  
**Code:** T3520NS  
**NQF level:** 5  
**Contact hours:** 2 hours per week for one semester  
**Credits:** 2  
**Course assessment:** Assessment will be based on CA **(50%)** and formula Exam **(50%)**. The CA will be compiled from three **(3)** written class tests (Summative assessment) and short online quiz at the discussion of the lecturer.  
**Prerequisites:** None  
**Course description:** This module covers; Introduction to Graphic Communication: Artistic drawings, technical drawings, drawing equipment, Lettering and Lines: Guide Lines, spacing of letters, lettering in maps, Geometric Construction: Geometric Nomenclature, Projection: Orthographic projections, Types and priorities of lines, Auxiliary views, Sectional views, Isometric drawing, Dimensioning drawings: Application of Engineering Drawing in Environmental Health Projects: Materials used in a sketch mapping for Field or Office Use.

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#### T3511NS INTRODUCTION TO THE MARITIME INDUSTRY

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**Course title:** INTRODUCTION TO THE MARITIME INDUSTRY  
**Code:** T3511NS  
**NQF level:** 5  
**Contact hours:** 4 hours per week for one semester  
**Credits:** 12  
**Course assessment:** Assessment will be based on CA **(50%)** and formula Exam **(50%)**. The CA will be compiled from three **(3)** written class tests (Summative assessment) and short online quiz at the discussion of the lecturer.  
**Prerequisites:** None  
**Course description:** This module covers; Shipping companies: structure and responsibilities, Ships: types of ships (incl. Offshore vessels) , ship dimensions, hull, machinery, safety equipment, load line and tonnage measurement, The crew: qualification and manning of ships (acc. STCW),The cargo: types of cargo, charter parties and cargo documents, Key maritime organisation and regulations: (IMO, flag states, class societies, ISM, ISPS, etc.), Insurance matters: transport, damage and P&I insurance, Nautical Equipment: RADAR, ECDIS, AIS, GPS (Travel Planning, Route Control, Collision Avoidance, etc.), Career prospects: in the maritime industry.

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#### T3522NS INTERNATIONAL LAW OF THE SEA

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**Course title:** INTERNATIONAL LAW OF THE SEA  
**Code:** T3522NS  
**NQF level:** 5  
**Contact hours:** 2 lecture periods per week for one semester  
**Credits:** 7  
**Course assessment:** Assessment will be based on CA **(50%)** and formula Exam **(50%)**. The CA will be compiled from three **(3)** written class tests (Summative assessment) and short online quiz at the discussion of the lecturer.  
**Prerequisites:** None  
**Course description:** This module covers; United Nations Convention on the law of the Sea: Territorial Sea and Contiguous Zone, Straits used for international navigation, Archipelagic States, Exclusive Economic Zone, Continental Shelf, High Seas, Regime of Islands, Enclosed or semi-enclosed seas, Right of access of land-locked states to and from the sea and freedom of transit, the Area, Protection and the Preservation of the Marine Environment, Marine Scientific Research, Development and transfer of Marine Technology, Settlement of disputes, General Provisions, Final Provisions.

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#### T3502NS NAVAL WARFARE

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**Course title:** NAVAL WARFARE  
**Code:** T3502NS  
**NQF level:** 5  
**Contact hours:** 2 hours per week for one semester  
**Credits:** 7  
**Course assessment:** Assessment will be based on CA **(50%)** and formula Exam **(50%)**. The CA will be compiled from three **(3)** written class tests (Summative assessment) and short online quiz at the discussion of the lecturer  
**Prerequisites:** None  
**Course description:** This module covers; Review of military history: age of Galley Warfare, age of sail, war evolution, age of the battleship. Naval Warfare 20<sup>th</sup> century. Propulsion and technological advances: weapon systems, nuclear power and missiles. Art and science of naval warfare: doctrine and amphibious operations.

## YEAR 2

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### T3631NS SEAMANSHIP

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<b>Course title:</b>	<b>SEAMANSHIP</b>
<b>Code:</b>	T3631NS
<b>NQF level:</b>	6
<b>Contact hours:</b>	4 hours per week for one semester <b>and 3 practical hours per week</b>
<b>Credits:</b>	16
<b>Course assessment:</b>	Assessment will be based on CA <b>(50%)</b> and formula Exam <b>(50%)</b> . The CA will be compiled from three <b>(3)</b> written class tests (Summative assessment) and short online quiz at the discussion of the lecturer.
<b>Prerequisites:</b>	<b>T3501NS</b>
<b>Course description:</b>	This module covers; General ship characteristics: ship equipment, ship maneuvering, anchoring, berthing and unberthing, ship to ship interaction, channel effects and tug use and roles and characteristics of warships. Chart-work: the chart, compasses, common markings on a chart, variation and deviation, tides, Rule of the road, sound signals, steering rules, lights on vessels, buoyage, safety and distress. Introduction to electronic navigation: satellite navigation (GPS), radar, compasses, echo sounder.

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### T3651NS MARINE PROPULSION

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<b>Course title:</b>	<b>MARINE PROPULSION</b>
<b>Code:</b>	T3651NS
<b>NQF level:</b>	6
<b>Contact hours:</b>	4 hours per week for one semester <b>and 2 practical hours per week</b>
<b>Credits:</b>	14
<b>Course assessment:</b>	Assessment will be based on CA <b>(50%)</b> and formula Exam <b>(50%)</b> . The CA will be compiled from three <b>(3)</b> written class tests (Summative assessment) and short online quiz at the discussion of the lecturer
<b>Prerequisites:</b>	<b>T3501NS</b>
<b>Course description:</b>	This module covers; Ships, Propulsion Machinery: Propulsion Devices. Screw Propellers, Propeller In "Open" Water, Propeller "Behind" The Ship, Propulsion Model Experiments, Basics of Thermodynamics: Steam propulsion, Gas Propulsion and ICE.

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### T3612NS MARITIME NAVIGATION I

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<b>Course title:</b>	<b>MARITIME NAVIGATION I</b>
<b>Code:</b>	T3612NS
<b>NQF level:</b>	6
<b>Contact hours:</b>	4 hours per week for one semester <b>and 3 practical hours per week</b>
<b>Credits:</b>	16
<b>Course assessment:</b>	Assessment will be based on CA <b>(50%)</b> and formula Exam <b>(50%)</b> . The CA will be compiled from three <b>(3)</b> written class tests (Summative assessment) and short online quiz at the discussion of the lecturer
<b>Prerequisites:</b>	<b>T3631NS</b>
<b>Course description:</b>	This module covers; Coastal Navigation: charts, projections, distance, direction, speed -, time -, distance calculations, Application of navigation instruments: gyro compass, magnetic compass, sighting devices, GPS, electronic charts, Fixing the ship: plotting of fixes, DRs, EPs, effect of wind, current.

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### T3632NS SHIP STABILITY & CONTROL I

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<b>Course title:</b>	<b>SHIP STABILITY &amp; CONTROL I</b>
<b>Code:</b>	T3632NS
<b>NQF level:</b>	6
<b>Contact hours:</b>	4 hours per week for one semester <b>and 2 practical hours per week</b>
<b>Credits:</b>	14
<b>Course assessment:</b>	Assessment will be based on CA <b>(50%)</b> and formula Exam <b>(50%)</b> . The CA will be compiled from three <b>(3)</b> written class tests (Summative assessment) and short online quiz at the discussion of the lecturer
<b>Prerequisites:</b>	<b>T3651NS</b>
<b>Course description:</b>	This module covers; Forces and moments, Centroids and the centre of gravity, Density and specific gravity, Laws of flotation, Group weights, water draft, air draft and density, Transverse statical stability, Effect of free surface of liquids on stability, TPC and displacement curves, Form coefficients, Simpson's Rules for areas and centroids, Calculating KB, BM and metacentric diagrams, Final KG plus twenty reasons for a rise in G, Angle of list, Moments of statical stability, Increase in draft due to list, Effects of side winds on stability, Load lines and freeboard marks.

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### T3601NS NAVAL WEAPON SYSTEMS

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<b>Course title:</b>	<b>NAVAL WEAPON SYSTEMS</b>
<b>Code:</b>	T3601NS
<b>NQF level:</b>	6
<b>Contact hours:</b>	2 hours per week for one semester
<b>Credits:</b>	8
<b>Course assessment:</b>	Assessment will be based on CA <b>(50%)</b> and formula Exam <b>(50%)</b> . The CA will be compiled from three <b>(3)</b> written class tests (Summative assessment) and short online quiz at the discussion of the lecturer



**Prerequisites:** T3502NS

**Course description:** This module covers; Weapons system overview, energy, radar principles and systems, automatic tracking systems, Track-While-Scan (TWS), electronic scanning and phased array, USS Vincennes, electronic warfare, C4ISR and information warfare. Principles of underwater sound, detection and tracking systems. Military explosives and warheads, fuzing, guidance and control principles. Weapon propulsion and Architecture, launching systems, fire control, mine warfare.

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### T3652NS MARINE RADIO COMMUNICATIONS

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**Course title:** MARINE RADIO COMMUNICATIONS

**Code:** T3652NS

**NQF level:** 6

**Contact hours:** 4 hours per week for one semester **and 3 practical hours per week**

**Credits:** 16

**Course assessment:** Assessment will be based on CA **(50%)** and formula Exam **(50%)**. The CA will be compiled from three **(3)** written class tests (Summative assessment) and short online quiz at the discussion of the lecturer

**Prerequisites:** T3631NS

**Course description:** This module covers; Radio propagation, Marine Communications, Coast Radio and Limited Coast Stations, Power Supplies, Marine Radio Communications Equipment, Digital Selective Calling, Emergency Position Indicating Radio Beacons, Search and Rescue Transponders, Distress Urgency and Safety Communication using radiotelephony, Operating Procedures for routine communications, Maritime communication satellite systems and equipment, GMDSS.

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### T3602NS CWIE PREPARATION

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**Course title:** CWIE PREPARATION

**Code:** T3602NS

**NQF level:** 6

**Contact hours:** 2 lectures per week for one semester

**Credits:** 8

**Course assessment:** Continuous assessment **(100% of the final mark)** consisting of a combination of tests and quizzes, assignments, and a CWIE portfolio. A final mark of **50%** is required to pass this course.

**Prerequisites:** None

**Course description:** This module covers; Professional behaviour, work-readiness, diligence & work ethics. Active searching for a CWIE situation with the aid of UNAM and the School.

## YEAR 3

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### T3731NS MARITIME NAVIGATION II

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**Course title:** MARITIME NAVIGATION II

**Code:** T3731NS

**NQF level:** 7

**Contact hours:** 4 hours per week for one semester **and 3 practical hours per week**

**Credits:** 16

**Course assessment:** Assessment will be based on CA **(50%)** and formula Exam **(50%)**. The CA will be compiled from three **(3)** written class tests (Summative assessment) and short online quiz at the discussion of the lecturer.

**Prerequisites:** T3612NS

**Course description:** This module covers; Fixing papers, electronic navigation aids and compasses, sunrise, sunset, contact tracking on maneuvering boards, Pilotage; command and control and responsibilities of the Captain, - Navigation Officer, - Officer of the Watch, - Operations Room Officer, and contact tracking on maneuvering boards (Relative Velocity problems), Rule of the Road: Introduction to Astro Navigation, Sextant; principles, errors and correcting.

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### T3742NS MATERIAL AND PROCESS TECHNOLOGY

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**Course title:** MATERIAL AND PROCESS TECHNOLOGY

**Code:** T3742NS

**NQF level:** 7

**Contact hours:** 2 lectures per week for one semester **and 2 practical hours per week**

**Credits:** 9

**Course assessment:** Assessment will be based on CA **(50%)** and formula Exam **(50%)**. The CA will be compiled from three **(3)** written class tests (Summative assessment) and short online quiz at the discussion of the lecturer.

**Prerequisites :** S3512PG

**Course description:** This module covers; Classification of Engineering Materials; Engineering properties of materials. Characteristic property of metals; bonding in solids, primary bonds like ionic, covalent and metallic bond, crystal systems, common crystal structure of metals; representations of planes and directions in crystals, atomic packing in crystals, calculation of packing density, voids in common crystal structures and imperfections crystals, heat treatment of metals, alloys, materials testing and materials selection.

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**T3711NS VESSEL AUXILIARY MACHINERY**

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**Course title:** AUXILIARY MACHINERY  
**Code:** T3711NS  
**NQF level:** 7  
**Contact hours:** 4 hours per week for one semester **and 3 practical hours per week**  
**Credits:** 18  
**Course assessment:** Assessment will be based on CA **(50%)** and formula Exam **(50%)**. The CA will be compiled from three **(3)** written class tests (Summative assessment) and short online quiz at the discussion of the lecturer.

**Prerequisites:** T3651NS

**Course description:** This module covers; Engine Room Layout: Lay out of main and auxiliary machinery in engine rooms in different ships. Piping arrangement, Pumps, Evaporators, Fresh Water generators, Deck Machinery, Filters, Heat Exchangers

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**T3721NS MARITIME NAVIGATION II**

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**Course title:** SHIP STABILITY & CONTROL II  
**Code:** T3721NS  
**NQF level:** 7  
**Contact hours:** 4 hours per week for one semester **and 2 practical hours per week**  
**Credits:** 16  
**Course assessment:** Assessment will be based on CA **(50%)** and formula Exam **(50%)**. The CA will be compiled from three **(3)** written class tests (Summative assessment) and short online quiz at the discussion of the lecturer.

**Prerequisites:** T3632NS

**Course description:** This module covers; Trim or longitudinal stability, Stability and hydrostatic curves Combined list and trim, Calculating the effect of free surface of liquids (FSE), Bilging and permeability, Dynamical stability, Angle of loll, True mean draft The inclining experiment plus fluctuations in a ship's lightweight, The calibration book plus soundings and ullages, Ship squat in open water and in confined channels, Heel due to turning, List due to bilging side compartments, The deadweight scale, The Trim and Stability book, Simplified stability information, The stability Proforma, Bending of ships, Strength curves for ships and Bending and shear stresses.

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**T3712NS SHIP ELECTRICAL POWER SYSTEMS**

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**Course title:** SHIP ELECTRICAL POWER SYSTEMS  
**Code:** T3712NS  
**NQF level:** 7  
**Contact hours:** 4 lecture periods per week for one semester **and 2 practical hours per week**  
**Credits:** 16  
**Course assessment:** Assessment will be based on CA **(50%)** and formula Exam **(50%)**. The CA will be compiled from three **(3)** written class tests (Summative assessment) and short online quiz at the discussion of the lecturer.

**Prerequisites:** T3711NS

**Course description:** This module covers; Principles of electric power generation, Transformers, Three-phase induction motor, Alternators.

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**T3732NS SHIP DESIGN & PERFORMANCE**

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**Course title:** SHIP DESIGN & PERFORMANCE  
**Code:** T3732NS  
**NQF level:** 7  
**Contact hours:** 4 hours per week for one semester **and 2 practical hours per week**  
**Credits:** 16  
**Course assessment:** Assessment will be based on CA **(50%)** and formula Exam **(50%)**. The CA will be compiled from three **(3)** written class tests (Summative assessment) and short online quiz at the discussion of the lecturer.

**Prerequisites:** T3711NS

**Course description:** This module covers; Ship Design: Preliminary estimates for new ships: Main Dimensions, Preliminary estimates for group weights for a new ship, Preliminary capacities for a new ship, Approximate hydrostatic particulars, Types of ship resistance, Types of ship speed, Types of power in ships, Power coefficients on ships, Preliminary design methods for a ship's propeller and rudder. Ship Performance: Ship Trials: a typical 'Diary of Events', Ship Trials: speed performance on the measured mile, Ship Trials: endurance and fuel consumption, Ship Trials: maneuvering trials and stopping characteristics, Ship Trials: residual trials, Ship squat in open water and in confined channels, Reduced ship speed and decreased propeller revolutions in shallow waters, The phenomena of Interaction of ships in confined waters and Ship vibration.

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**T3722NS ADVANCED SHIP ELECTRONICS**

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**Course title:** ADVANCED SHIP ELECTRONICS

**Code:** T3722NS

**NQF level:** 7

**Contact hours:** 2 hours per week for one semester **and 3 practical hours per week**

**Credits:** 9

**Course assessment:** Assessment will be based on CA **(50%)** and formula Exam **(50%)**. The CA will be compiled from three **(3)** written class tests (Summative assessment) and short online quiz at the discussion of the lecturer.

**Prerequisites:** **None**

**Course description:** This module covers Semiconductor theory, Bipolar Junction Transistors (BJTs), OP-Amps, Power Amplifiers, and Power Supplies.

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**OLD CURRICULUM**

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## G. OLD UNDERGRADUATE PROGRAMMES AND POSTGRADUATE PROGRAMMES

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### UNDERGRADUATE PROGRAMMES

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CODE	DEGREE	MINIMUM DURATION
21BMSA	Bachelor of Military Science Army Honours	4 years full-time
21BMSR	Bachelor of Military Science Aeronautical Honours	4 years full-time
21BMSM	Bachelor of Military Science Nautical-Mechanical Honours	4 years full-time
21BMSE	Bachelor of Military Science Nautical-Electronics Honours	4 years full-time
21BMSW	Bachelor of Military Science Nautical-Weapon Systems Honours	4 years full-time

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### POSTGRADUATE PROGRAMME

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CODE	DEGREE	MINIMUM DURATION
21 PDSS	Postgraduate Diploma in Security and Strategic Studies	1 year full-time
21 MASS	Master of Arts in Security and Strategic Studies	2 years full-time

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#### MINIMUM REQUIREMENTS FOR RE-ADMISSION

To be re-admitted into the School of Military Science for a particular year of registration, a student must have passed the minimum number of modules as indicated below:

- At least 64 credits by the end of the first year (at least 40% of total credits in Year 1)
- At least 80% of Year 1 credits plus 40% of Year 2 credits by the end of the second year.
- All (100%) Year 1 credits plus at least 80% of Year 2 credits plus at least 40% of Year 3 credits by the end of the third year.
- All (100%) of Year 1 and Year 2 credits plus 80% of Year 3 credits plus 20% of Year 4 credits by the end of the fourth year.

#### ADVANCEMENT AND PROGRESSION RULES

A student advances to the following academic level of study when at least two thirds of the modules of the curriculum for a specific year have been passed. If a student passed only one third of the full curriculum of a specific year, he/she may not register for any modules of the following year. In all cases prerequisites for modules have to be passed before a student can proceed to register for modules that require prerequisites.

##### From Year 1 to Year 2

At least 7 and (1/2) courses (equivalent to 112 credits) prescribed for Year 1

##### From Year 2 to Year 3

All the **first year** modules plus At least 6 courses (equivalent to 96 credits) prescribed for Year 2

##### From Year 3 to Year 4

All **second year** modules plus at least 5 courses (equivalent to 80 credits) prescribed for Year 3

## G.1. BACHELOR OF SCIENCE IN MILITARY SCIENCE (ARMY) HONOURS

### Qualification: BSc. Honours Military Science Army 21BMSA

Students opting for a Military Science (Army) must take all of the following courses:

#### YEAR 1

SEMESTER	MODULE NAME	COURSE CODE	CREDITS	PRE-REQUISITES	CO-REQUISITES
1	English Communication & Study Skills	LCE 3419	16	None	None
1	Basic Mathematics	MAT3511	16	None	None
1	Computer Literacy	CLC3509	8	None	None
1	Analytic Geometry	MAT3501	8	None	None
1	Matrices and Complex Numbers	MAT3521	8	None	None
1	Physics for Physical Sciences I	PHY3511	16	None	None
1	Fundamentals of Information Technology I	CIT3521	8	None	None
2	English for Academic Purposes	LEA3519	16	None	LCE3419
1&2	Contemporary Social Issues	CSI3580	8	None	None
2	Fundamentals of Information Technology II	CIT3512	16	None	CIT3521
2	Precalculus	MAT3512	16	None	None
2	Introduction to Statistics	STS3522	8	None	None
2	Physics for Physical Sciences II	PHY3512	16	None	None
<b>Total Credits</b>			<b>160</b>		

#### YEAR 2

SEMESTER	MODULE NAME	COURSE CODE	CREDITS	PRE-REQUISITES	CO-REQUISITES
1	Calculus I	MAT3611	16	MAT3512	None
1	Numerical Methods with MATLAB	MAT3641	8	MAT3521	None
1	Mechanics and Waves	PHY3651	16	MAT3512 & PHY3511	None
1	Human Resource Management I	ARM3641	8	None	None
1	Concepts and Techniques in Military Geography	ARM3611	16	None	None
1	Physical Environment I	ARM3601	8	None	None
2	Calculus II	MAT3612	16	MAT3512	None
2	Ordinary Differential Equations	MAT3642	8	MAT3521 and MAT3512	None
2	Electromagnetism	PHY3612	16	PHY3512 and MAT3512	None
2	Human Resource Management II	ARM3642	8	ARM3641	None
2	Physical Environment II	ARM3612	16	ARM3601	None
<b>Total Credits</b>			<b>136</b>		

#### YEAR 3

SEMESTER	MODULE NAME	MODULE CODE	CREDITS	PRE-REQUISITES	CO-REQUISITES
1	Electrodynamics	PHY3711	16	PHY3612 & MAT3612	None
1	Military Psychology	ARM3721	8	None	None
1	Military Management	ARM3741	8	None	None
1	Military History	ARM3761	8	None	None
1	Military Conduct and Environment	ARM3711	16	ARM3611	None
2	Research Methodology	AER3732	8	STS3522	None
2	Modern Physics	PHY3752	16	MAT3512 and either PHY3651 or PHY3612	None
2	Africa and International Political Economy	ARM3732	16	None	None
2	Geography of Sub-Saharan Africa	ARM3712	16	ARM3611	None
2	Contemporary Political Relations	ARM3772	16	None	None
<b>Total Credits</b>			<b>128</b>		

**YEAR 4**

<b>SEMESTER</b>	<b>MODULE NAME</b>	<b>MODULE CODE</b>	<b>CREDITS</b>	<b>PRE-REQUISITES</b>	<b>CO-REQUISITES</b>
1&2	Research Project	ARM3810	32	AER3732	None
1	Advanced Electrodynamics	PHY3809	8	PHY3711	None
1	Military Leadership	ARM3831	16	ARM3741	None
1	Economics I	ARM3851	16	None	None
1	Geographical Information Systems	ARM3811	16	ARM3712	ARM3852
2	Nuclear Physics	PHY3802	8	PHY3752	None
2	Economics II	ARM3872	16	ARM3851	None
2	Remote Sensing	ARM3852	16	ARM3712 & ARM3811	None
<b>Total Credits</b>			<b>128</b>		

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**G.1.1. BACHELOR OF SCIENCE IN MILITARY SCIENCE (ARMY) HONOURS TABLE OF EQUIVALENCES**


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For the students of the old programme that need to repeat, the following equivalents are to be used:

Old Module	New Module	Level	Credits
LCE 3419 English Communication & Study Skills			
MAT3511 Basic Mathematics	Old module retained		
CLC3509 Computer Literacy			
MAT350 Analytic Geometry	Old module retained		
MAT3521 Matrices and Complex Numbers	Old module retained		
PHY3511 Physics for Physical Sciences I	S3511PG General Physics I	5	14
CIT3521 Fundamentals of Information Technology I	Old module retained		
CSI3580 Contemporary Social Issues	Old module retained		
LEA3519 English for Academic Purposes	Old module retained		
CIT3512 Fundamentals of Information Technology II	Old module retained		
MAT3512 Pre-Calculus	Old module retained		
STS3522 Introduction to Statistics	Old module retained		
PHY3512 Physics for Physical Sciences II	S3512PG General Physics II	5	14
MAT3611 Calculus I	Old module retained		
MAT3641 Numerical Methods with MATLAB	S3631MN Old module retained	6	14
PHY3651 Mechanics and Waves	Old module retained	6	
ARM3611 Concepts & Techniques in Military Geo	Old module retained		
ARM3601 Physical Environment I	Old module retained		
MAT3612 Calculus II	Old module retained		
MAT3642 Ordinary Differential Equations	S3611MC Calculus III	6	14
PHY3612 Electromagnetism	Old module retained		
ARM3641 Human Resource Management I	T3641MG Military Human Resource Management	6	8
ARM3642 Human Resource Management II	T3641MG Military Human Resource Management	6	8
ARM3612 Physical Environment II	Old module retained		
ARM3721 Military Psychology	T3731MG Military Psychology	7	9
ARM3741 Military Management	T3752MG Military Management & Leadership	7	16
AER3721 Research Methodology	T4800AR Research Methodology and Project proposal	8	14
ARM 3761 Military History	Old module retained		
ARM 3711 Military Conduct & Environment	T3772MG Military Conduct & Environment	7	16
ARM 3732 Africa and International Political Economy	T3771MG Africa and International Political Economy	7	16
ARM3772 Contemporary Political Relations	Old module retained		
ARM 3752 Geography of Sub-Saharan Africa	T3732MG Geography of Sub-Saharan Africa	7	16



## G.2. BACHELOR OF SCIENCE IN MILITARY SCIENCE (AERONAUTICAL) HONOURS

### Qualification: BSc Honours Military Science Aeronautical 21BMSR

Students opting for a Military Science (Aeronautical) must take all of the following courses:

#### YEAR 1

SEMESTER	MODULE NAME	COURSE CODE	CREDITS	PRE-REQUISITES	CO-REQUISITES
1	English Communication & Study Skills	LCE 3419	16	None	None
1	Basic Mathematics	MAT3511	16	None	None
1	Computer Literacy	CLC3509	8	None	None
1	Analytic Geometry	MAT3501	8	None	None
1	Matrices and Complex Numbers	MAT3521	8	None	None
1	Physics for Physical Sciences I	PHY3511	16	None	None
1	Fundamentals of Information Technology I	CIT3521	8	None	None
2	English for Academic Purposes	LEA3519	16	None	LCE3419
1&2	Contemporary Social Issues	CSI3580	8	None	None
2	Fundamentals of Information Technology II	CIT3512	16	None	SCIT3521
2	Precalculus	MAT3512	16	None	None
2	Introduction to Statistics	STS3522	8	None	None
2	Physics for Physical Sciences II	PHY3512	16	None	None
<b>Total Credits</b>			<b>160</b>		

#### YEAR 2

SEMESTER	MODULE NAME	COURSE CODE	CREDITS	PRE-REQUISITES	CO-REQUISITES
1	Calculus I	MAT3611	16	MAT3512	None
1	Numerical Methods with MATLAB	MAT3641	8	MAT3521	None
1	Mechanics and Waves	PHY3651	16	MAT3512 & PHY3511	None
1	Fundamentals of Physical Geography	AER3631	16	None	None
1	Theory of Flight I	AER3621	8	None	None
2	Calculus II	MAT3612	16	MAT3512	None
2	Ordinary Differential Equations	MAT3642	8	MAT3521 and MAT3512	None
2	Electromagnetism	PHY3612	16	PHY3512 & MAT3512	None
2	Theory of Flight II	AER3612	16	AER3621	None
2	Flight Physiology	AER3642	8	None	AER3621
<b>Total Credits</b>			<b>128</b>		

#### YEAR 3

SEMESTER	MODULE NAME	MODULE CODE	CREDITS	PRE-REQUISITES	CO-REQUISITES
1	Electrodynamics	PHY3711	16	PHY3612 & MAT3612	None
1	History of Aviation	AER3721	8	None	None
1	Military Management	ARM3741	8	None	None
1	Military Psychology	ARM3721	8	None	None
1	Airport Planning and Management	AER3751	16	None	None
1	Theory of Flight III	AER3711	16	AER3612 & AER3621	None
2	Modern Physics	PHY3752	16	MAT3612 and either PHY3651 or PHY3612	None
2	Research Methodology	AER3732	8	STS3522	None
2	Aviation Management Principles	AER3702	8	None	ARM3741
2	Aviation Ethics	AER3722	8	None	ARM3721
2	Aviation Laws and Regulations	AER3742	8	None	AER3751
2	Aircraft Turbine Engine Operation	AER3762	8	None	AER3711
<b>Total Credits</b>			<b>128</b>		

**YEAR 4**

<b>SEMESTER</b>	<b>MODULE NAME</b>	<b>MODULE CODE</b>	<b>CREDITS</b>	<b>PRE-REQUISITES</b>	<b>CO-REQUISITES</b>
1&2	Research Project	AER3810	32	AER3732	None
1	Advanced Electrodynamics	PHY3809	8	PHY3711	None
1	Aviation Safety	AER3811	16	None	AER3702
1	Advanced Aircraft Performance	AER3831	16	None	AER3762
1	Crew Resource Management in Aviation	AER3821	8	AER3742	None
2	Nuclear Physics	PHY3802	8	PHY3752	None
2	Aviation Navigation GPS	AER3812	16	AER3742	None
2	Aviation Leadership	AER3822	8	AER3722	None
2	Aviation-Aerospace Security Issues	AER3842	8	AER3722	None
2	Aviation Terrorism and Asymmetrical Warfare	AER3862	8	None	AER3811
<b>Total Credits</b>			<b>128</b>		

## G.2.1. BACHELOR OF SCIENCE IN MILITARY SCIENCE (AERONAUTICAL) HONOURS TABLE OF EQUIVALENCES

For the students of the old programme that need to repeat, the following equivalents are to be used:

Table of equivalents during the phasing in/out period		
	Old course	New course
<b>Year 1</b>		
	LCE 3419: English Communication & Study Skills	No equivalent – old module retained
	CLC3509: Computer Literacy	No equivalent – old module retained
	CIT3521: Fundamentals of Information Technology I	No equivalent – old module retained
	LEA3519: English for Academic Purposes	No equivalent – old module retained
	CSI3580: Contemporary Social Issues	No equivalent – old module retained
	CIT3512: Fundamentals of Information Technology II	No equivalent – old module retained
	STS3522: Introduction to Statistics	No equivalent – old module retained
	PHY3511: Physics for Physical Sciences I	No equivalent – old module retained
	PHY3512: Physics for Physical Sciences II	No equivalent – old module retained
	MAT3511: Basic Mathematics	No equivalent – old module retained
	MAT3512: Pre-calculus	No equivalent – old module retained
	MAT3521: Matrices and Complex Numbers	S3511MS: Mathematics Support I
	MAT3501: Analytic Geometry	No equivalent – old module retained
<b>Year 2</b>		
	MAT3611: Calculus I	No equivalent – old module retained
	MAT3612: Calculus II	No equivalent – old module retained
	PHY3651: Mechanics & Waves	No equivalent – old module retained
	PHY3612: Electromagnetism	No equivalent – old module retained
	MAT3642: Ordinary Differential Equations	S3611MC: Calculus III
	MAT3641: Numerical Methods with MATLAB	No equivalent – old module retained
	AER3621: Theory of Flight I	No equivalent – old module retained
	AER3612: Theory of Flight II	No equivalent – old module retained
	AER3642: Flight Physiology	No equivalent – old module retained
	AER3631: Fundamentals of Physical Geography	No equivalent – old module retained
<b>Year 3</b>		
	PHY3711: Electrodynamics	S3711PE: Electrodynamics
	AER3732: Research Methodology	No equivalent – old module retained
	PHY3752: Modern Physics	S3702PM: Modern Physics
	AER3711: Theory of Flight III	No equivalent – old module retained
	ARM3741: Military Management	Military Management & Leadership
	AER3722: Aviation Ethics	T3722AD: Aviation Ethics
	AER3742: Aviation Laws and Regulations	T3702AE: Aviation Laws and Regulations
	AER3721: History of Aviation	No equivalent – old module retained
	AER3702: Aviation Management Principles	T3751AC: Aviation Management

	ARM3721: Military Psychology	T3731MG: Military Psychology
	AER3751: Airport Planning and Management	T3731: Airport Planning and Management
	AER3762: Aircraft Turbine Engine Operation	T3762AF: Aircraft Turbine Engine Operation
<b>Year 4</b>		
	AER3810: Research Project	T3813AP: Research Project
	AER3811: Aviation Safety	No equivalent – old module retained
	AER3831: Advanced Aircraft Performance	No equivalent – old module retained
	AER3821: Crew Resources Management in Aviation	No equivalent – old module retained
	AER3842: Aviation Aerospace Security Issues	No equivalent – old module retained
	AER3812: Aviation Navigation GPS	No equivalent – old module retained
	AER3822 : Aviation Leadership	No equivalent – old module retained
	AER3862: Aviation Terrorism and Asymmetrical Warfare	No equivalent – old module retained
	PHY3809: Advanced Electrodynamics	No equivalent – old module retained
	PHY3802: Nuclear Physics	No equivalent – old module retained

### G.3. BACHELOR OF SCIENCE IN MILITARY SCIENCE (NAUTICAL) HONOURS

#### Qualification: BSc Honours Military Science Nautical - Mechanics 21BMSM

Students opting for a Military Science (Nautical - Mechanics) must take all of the following courses:

#### YEAR 1

SEMESTER	MODULE NAME	COURSE CODE	CREDITS	PRE-REQUISITES	CO-REQUISITES
1	English Communication & Study Skills	LCE 3419	16	None	None
1	Basic Mathematics	MAT3511	16	None	None
1	Computer Literacy	CLC3509	8	None	None
1	Analytic Geometry	MAT3501	8	None	None
1	Matrices and Complex Numbers	MAT3521	8	None	None
1	Physics for Physical Sciences I	PHY3511	16	None	None
1	Fundamentals of Information Technology I	CIT3521	8	None	None
1&2	Contemporary Social Issues	CSI3580	8	None	None
2	English for Academic Purposes	LEA3519	16	None	LCE3419
2	Fundamentals of Information Technology II	CIT3512	16	None	CIT3521
2	Precalculus	MAT3512	16	None	None
2	Introduction to Statistics	STS3522	8	None	None
2	Physics for Physical Sciences II	PHY3512	16	None	None
<b>Total Credits</b>			<b>160</b>		

#### YEAR 2

SEMESTER	MODULE NAME	COURSE CODE	CREDITS	PRE-REQUISITES	CO-REQUISITES
1	Calculus I	MAT3611	16	MAT3512	None
1	Numerical Methods with MATLAB	MAT3641	8	MAT3521	None
1	Mechanics and Waves	PHY3651	16	MAT3512 & PHY3511	None
1	Propulsion	NAV3661	8	PHY3511	None
1	Seamanship	NAV3601	8	None	None
2	Calculus II	MAT3612	16	MAT3512	None
2	Ordinary Differential Equations	MAT3642	8	MAT3521 and MAT3512	None
2	Electromagnetism	PHY3612	16	PHY3512 & MAT3512	None
2	Ship Stability and Controls	NAV3642	8	None	NAV3601
2	Maritime History	NAV3622	8	None	None
2	Marine Radio Communications	NAV3652	16	CIT3512	None
<b>Total Credits</b>			<b>128</b>		

**YEAR 3**

SEMESTER	MODULE NAME	MODULE CODE	CREDITS	PRE-REQUISITES	CO-REQUISITES
1	Military Psychology	ARM3721	16	None	None
1	Military Management	ARM3741	8	None	None
1	Navigation and Naval Operations	NAV3711	16	NAV3601	None
1	Applied Thermodynamics	NAV3751	16	PHY3512	None
1	Auxiliaries Naval Engines	NAV3731	16	NAV3661	None
2	Research Methodology	AER3732	8	STS3522	None
2	Modern Physics	PHY3752	16	MAT3612 and either PHY3651 or PHY3612	None
2	Advanced Navigation	NAV3742	8	NAV3711	None
2	Vector Analysis	MAT3742	8	MAT3612	None
2	Naval Weapon Systems	NAV3722	8	None	None
2	Ship Design	NAV3762	8	NAV3642	None
<b>Total Credits</b>			<b>128</b>		

**YEAR 4**

SEMESTER	MODULE NAME	MODULE CODE	CREDITS	PRE-REQUISITES	CO-REQUISITES
1&2	Research Project	NAV3810	32	AER3732	None
1	Astro-Navigation	NAV3801	8	NAV3742	None
1	Military Leadership	ARM3831	16	ARM3741	None
1	Material Resistance	NAV3841	8	NAV3751	None
1	Process and Material Technologies	NAV3821	8	PHY3651	None
1	Ship Hydro-Statics and Stability	NAV3871	16	NAV3762	None
2	Nuclear Physics	PHY3802	8	PHY3752	None
2	Naval Warfare	NAV3822	8	None	None
2	Engine Automation and Controls	NAV3862	8	NAV3731	None
2	Applied Electronics	NAV3882	8	PHY3612	None
2	Corrosion and Controls	NAV3802	8	NAV3821	None
<b>Total Credits</b>			<b>128</b>		

### G.3.1. BACHELOR OF SCIENCE IN MILITARY SCIENCE (NAUTICAL) HONOURS TABLE OF EQUIVALENCES

For the students of the old programme that need to repeat, the following equivalents are to be used:

Semester	Old Module Course	New Module Course
<b>Year 1</b>		
1	LCE 3419 English Communication & Study Skills	Old Module Retained
2	LEA3519 English for Academic Purposes	Old Module Retained
1	CLC3509 Computer Literacy	Old Module Retained
1&2	CSI3580 Contemporary Social Issues	Old Module Retained
1	MAT3511 Basic Mathematics	Old Module Retained
1	MAT3501 Analytic Geometry	Old Module Retained
1	MAT3521 Matrices and Complex Numbers	Old Module Retained
2	MAT3512 Pre-Calculus	Old Module Retained
1	PHY3511 Physics for Physical Sciences I	S3511PG General Physics I
2	PHY3512 Physics for Physical Sciences II	S3512PG General Physics II
1	CIT3521 Fundamentals of Information Technology I	Old Module Retained
2	CIT3512 Fundamentals of Information Technology II	Old Module Retained
2	STS3522 Introduction to Statistics	Old Module Retained
<b>Year 2</b>		
1	MAT3611 Calculus I	S3511MC Old Module Retained
1	MAT3641 Numerical Methods with MATLAB	S3631MN Numerical Mathematics
1	PHY3651 Mechanics and Waves	Old Module Retained
2	PHY3612 Electromagnetism	Old Module Retained
1	NAV3661 Propulsion	T3651NS Marine Propulsion
1	NAV3601 Seamanship	T3631NS Seamanship
2	MAT3612 Calculus II	S3512MC Old Module Retained
2	MAT3642 Ordinary Differential Equations	S3611MC Calculus III
2	NAV3642 Ship Stability and Controls	T3632NS Ship Stability and Control I
2	NAV3622 Maritime History	T3502NS Old Module Retained
2	NAV3652 Marine Radio Communications	T3652NS Marine Radio Communications
<b>Year 3</b>		
1	ARM3721 Military Psychology	T3721MS Military Psychology
1	ARM3741 Military Management	T3792MS Military Management & Leadership
1	NAV3711 Navigation and Naval Operations	T3731NS Maritime Navigation II
1	NAV3751 Applied Thermodynamics	Old Module Retained
1	NAV3731 Auxiliaries Naval Engines	T3711NS Vessel Auxiliary Machinery
2	AER3732 Research Methodology	Old Module Retained
2	PHY3752 Modern Physics	S3702PM Modern Physics
2	NAV3742 Advanced Navigation	Old Module Retained
2	MAT3742 Vector Analysis	Old Module Retained
2	NAV3722 Naval Weapon Systems	T3601NS Old Module Retained
2	NAV3762 Ship Design	T3732NS Ship Design & Performance

#### G.4. POSTGRADUATE DIPLOMA IN SECURITY AND STRATEGIC STUDIES 21PDSS

Qualification: Postgraduate Diploma in Security and Strategic Studies s 21PDSS

Course code	Course Title	NQF Level	Pre-requisite	NQF Credits
<b>Semester 1</b>				
UAE 4819	Academic Writing for Postgraduate Students	8	None	NCB
MSS 4811	Research Methodology	8	None	16
MSS 4831	Contemporary World Politics	8	None	16
MSS 4851	National and Human Security	8	None	16
MSS 4871	Democratic Government and the Security Sector	8	None	16
<b>Total Credits Semester 1</b>				<b>64</b>
<b>Semester 2</b>				
MSS 4812	Research Project	8	MSS 4811	16
MSS 4832	Introduction to Public Policy Process	8	None	16
MSS 4852	Strategic Studies and management	8	None	16
<b>ELECTIVES: SELECT ONLY ONE</b>				
MSM 4812	Military History of Africa (capita selecta) (compulsory for members of defence)	8	None	16
MSD 4812	Diplomacy Theory and Practice (compulsory for members from Foreign Affairs.)	8	None	16
MSP 4812	Political Economy of Food Security (compulsory for Agric & Forestry)	8	None	16
MSP 4832	Public Safety and Rule of Law (compulsory for members from Safety & Sec.)	8	None	16
MSI 4812	International, Regional and Sub-Regional Organisations	8	None	16
MSR 4812	Conflict Resolutions	8	None	16
<b>Total Credits Semester 2</b>				<b>64</b>
<b>TOTAL CREDITS</b>				<b>128</b>



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**G.4.1. POSTGRADUATE DIPLOMA IN SECURITY AND STRATEGIC STUDIES TABLE OF EQUIVALENCES**


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For the students of the old programme that need to repeat, the following equivalents are to be used:

Year	Semester	OLD COURSE		EQUIVALENT NEW COURSE	
1	0	UAE4819	Academic Writing for Postgraduate Students	U3583AL	Academic Writing for Post-Graduate Students
1	0	MSS4811	Research Methodology	AER3800 (HONS)	Research Methodology & Project Proposal
1	0	MSS4832	Introduction to Public Policy Process	T5800MP	Public Policy Analysis
1	1	MSS4851	National and Human Security	T5821MC	The Construct of Security
1	1	MSS4831	Contemporary World Politics	T5811MC	Contemporary World Politics
1	1	MSS4852	Strategic Studies and Management	T5831MS	Strategic Studies and Management
1	1/2	MSS4812	Research Project	T5892MR	Research Project
1	2	MSS4871	Democratic Governance and the Security Sector	T5852MS	Security Sector and Democracy
1	2	MSD4812	Diplomatic Theory and Practice	T5872MD	Diplomatic Studies
1	2	MSP4832	Public safety and Rule of Law	T5842MP	Public Safety and Rule of Law
1	2	MSM4812	Military History of Africa	T5862MM	Military History
1	2	MSP4812	Political Economy of Food Security	T5802MP	Political Economy of Food Security

## G.5. MASTER OF ARTS IN SECURITY AND STRATEGIC STUDIES

Qualification: Master of Arts in Security and Strategic Studies 21MASS

### YEAR 1

Course Code	Course Title	NQF Level	NQF Credits	(Co-requisite) / Pre-requisite
UAE 5819	Academic Writing for Postgraduate Students	8	NCB	None
MSS 5911	The State & Human Security	9	24	None
MSS 5931	The Study of Contemporary World Politics	9	24	None
MSS 5951	Strategic Management	9	24	None
<b>Total Credits Semester 1</b>			<b>72</b>	
<b>Year 1 Semester 2</b>				
PAR 5962	Research Methodology	9	12	None
MSS 5912	Comparative Foreign Policy	9	24	None
MSS 5932	National Security and Development	9	24	None
<b>Total credits Semester 2</b>			<b>60</b>	
<b>TOTAL CREDITS YEAR 1</b>			<b>132</b>	

### YEAR 2

MSS 5971	Intelligence Strategy	9	24	None
MSE 5911	Elements of National Power	9	24	None
MSS 5981	Research Paper	9	18	
<b>Total credits Semester 1</b>			<b>66</b>	
MSS 5992	Thesis	9	60	PAR 5962
<b>Total credits semester 2</b>			<b>60</b>	
<b>Total credits Year 2</b>			<b>126</b>	
<b>TOTAL CREDITS FOR THE PROGRAMME</b>			<b>258</b>	

**G.5.1. MASTER OF ARTS IN SECURITY AND STRATEGIC STUDIES TABLE OF EQUIVALENCES**

Year	Semester	Old Course		Equivalent New Course	
1	0	UAE5819	Academic writing for Postgraduate Students	U3583AL	Academic Writing for Post-Students
1	0	MSS5911	The State and Human Security	T6910MT	The Construct of Security
1	0	MSS5931	The Study of Contemporary World Politics	T6930MC	Contemporary World Politics
1	1	MSS5951	Strategic Management	T6901MS	Strategic Management
1	1			T6951MA	African International Relations
1	1	PAR5962	Research Methodology	T6971MR	Research Methodology
1	2	MSS5932	National Security and Development	T6912MN	National Security and Development
1	2	MSS5871	Intelligence Strategy	T6932MI	Intelligence Culture
1	2	MSS5912	Comparative Foreign Policy	T6902MC	Comparative Foreign Policy
2	1	MSE5911	Elements of National Power	T6911MS	Strategic Geopolitics
2	2	MSS5992	Thesis	T6972MT	Thesis

# Prospectus 2023