

Prospectus



Prospectus

*Pan African University
Life and Earth Sciences Institute*
(PAULESI)

Acknowledgement

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**INSTITUTE OF LIFE AND EARTH SCIENCES
(Including Health and Agriculture)
PAN AFRICAN UNIVERSITY
UNIVERSITY OF IBADAN, IBADAN**

1. Forward

Availability and acquisition of sound education especially at the tertiary level has remained a mirage to most African countries. The situation is further compounded by unavailability of quality and globally competitive institutions among the existing ones on the continent. The initiative of the African Union Commission (AUC) in coming up with the idea of a continental university is therefore commendable and should be given the maximum support for it to achieve the intended goals of nurturing quality and exemplifying excellence in the education sector within Africa.

The main theme of the Pan African University Institute of Life and Earth Science (including Health and Agriculture) PAULESI, falls within the framework of the millennium development goals (MDG) since the impact on the African economies is expected to be significantly driven by progress in science and technology. Most of the global economies are heavily driven by progress in science and technology. As the pioneer institute, the right foundation blocks have to be set to ensure an enduring legacy for posterity. The right attitude and the right vigour should be maintained to achieve the desired goals. This implies lots of sacrifice that will be expected from both staff and students.

Students within the PAU are expected to be minimally bilingual therefore students are to undergo language programme for the first six months of arriving on campus with students from Anglophone countries learning French and those from Francophone background moderating English. The students are therefore implored to seize the opportunity to make use of the best situation by been devoted to work and being law abiding.

This Prospectus has been prepared to serve as a veritable source of information. In some instances the knowledge required on some issues may not be sufficiently provided. Students may have to consult other sources of information in order to have the complete knowledge on the programmes. The prospectus provides information concerning issues on admission requirements, award of degree and the course content for the different programmes. All the students are expected to critically study the contents of this book so as to have a full grasp of the programme they are pursuing.

Abatan Matthew O.
Director



1. MASTERS PROGRAMMES

Aim and Objectives

2.1. Duration of Training

Not less than eighteen months and not more than three (3) academic years.

1.2. Programme Structure

To specify the courses offered per semester and the Course Units earned per course. Most programmes have recess terms, in addition to the two semesters, for greater focus on the practical aspects of the programmes, such as internship, teaching practice, survey projects, field attachments, industrial training, etc.

2.3. Course Units

- a) The programmes shall be conducted on Course Unit (CU) basis;
- b) One CU is equivalent to one contact hour a week over a semester or a series of weeks of at least 15 contact hours;
(A semester contains 17 weeks, 15 of teaching/ study/practice and two weeks of examinations).

- c) One contact hour is equivalent to one hour of a lecture /tutorial/ seminar, or two hours of practicals.
The total Course Units required at the end of a Semester must be at least 15.
The Course Units required at the end of a year must be at least 30.

2.4. Course Work and Research requirements

- a) A candidate shall not be permitted to formally start on research work unless he/she has attended a minimum of at least 2/3 of the courses offered in the first year of course work.
- b) All masters' degree programme students are also required to present at least one seminar before completing their degree programme.
- c) A candidate for the Masters degree shall undertake a research project with the guidance of at least two supervisors appointed by the Institute Board and approved by the Senate out of which one should be Principal Supervisor
- d) The Masters candidate shall present a Thesis in accordance with the general rules and regulations pertaining to all Masters Degrees submitted to the PAU.

2.5. Award

The degree of a Master of the relevant programme, shall be awarded to a candidate who has accumulated a minimum of 30 CU for the courses passed; and has successfully fulfilled the requirements of the thesis and passed the oral examination.

2.6. Oral Examination

An oral examination is compulsory for Masters Students. The oral examination for Masters Students is a closed one conducted by the appointed panel only. Oral examiners shall identify the areas to be covered during the oral examination and the kind of questions to be discussed in the examination. The panel shall examine the knowledge base on the subject matter or the research.

2.7. Grading Standards

The following marks shall be adopted for all:

Distinction	80%+
Merit	70- 79%
Pass	50- 69%
Fail	Below 50%

The pass grade point per course is 2.0

- (a) No credit unit shall be awarded for any failed course.
- (b) Progression through the course shall be assessed in one of three categories
 - (a) Normal Progression- This occurs when a student passes all courses taken
 - (b) Probationary – This is a warning and occurs if:
 - (i) A student fails a core/compulsory course, or
 - (ii) A student obtains a grade point average (GPA) or a cumulative grade point average (CGPA) of less than 2.0
 - (c) Discontinuation – A student shall be discontinued from the programme for one of the following reasons:
 - (i) Receiving two probations on the same core/compulsory course
 - (ii) Receiving two consecutive probation based on GPA or CGPA
 - (c) Retaking/Repeating a course:

There shall be no supplementary examination in any course of the programme. However, a student may retake any course when it is offered again in order to:

- (i) Pass if the student had failed it before.
- (ii) Improve the grade if the first pass grade was low.
- (d) Thesis: The thesis shall conform to the standing guidelines and regulations of the Pan African University on higher degrees.
 - (i) A candidate shall submit a research proposal to the Faculty Higher Degree Committee before the end of the second semester of the first year. He/She will only be allowed to proceed for research upon satisfactory defence of the proposal
 - (ii) At least three months before a thesis is to be presented, a candidate shall give notice in writing to the University, indicating the title of the Thesis and the actual date of submission.
 - (iii) The thesis shall be examined following guidelines of University of Ibadan by at least three examiners (two internal and one external).
 - (iv) A thesis submitted for the degree must be satisfactory with regard to form and literary presentation; it must also include a full bibliography of the material used in the preparation.
 - (v) The candidate will be required to submit three copies of the thesis accompanied by a declaration to the satisfaction of the Senate stating that it has not been submitted for a degree at any other University.
 - (vi) Approval of thesis- To obtain final approval of a thesis, the

candidate shall satisfy the examiners by a written thesis and viva voce. The recommendation of the committee will be communicated to the School of Graduate Studies with a clear recommendation for award of the degree or otherwise.

- (vii) Revision of a Thesis – A candidate, who fails to satisfy the examiners, may resubmit a revised thesis in accordance with the guidance of the viva voce committee. The revision must be submitted within six months after notification.

2.8. Award of Degrees

A letter of award of the degree shall be processed by the Directorate of Graduate Studies and Scholarships (DGSS) of the PAU only when the examiners have certified in writing and with signatures that the candidate presented a meritorious thesis and passed the oral examination. Where a candidate has to make corrections on the thesis as recommended by the examinational panel, the letter of award of the degree shall only be processed when the candidate has made the corrections to the satisfaction of the examiner who was entrusted by the oral examination panel to oversee the corrections. The Principal Supervisor shall write to the Director of the DGSS certifying that he/she was satisfied with the corrections.

Three copies of the thesis, in acceptable binding with a hard black cover, endorsed by the student and supervisor(s) shall be presented to the DGSS. In addition, the oral examination report shall be made available to the DGSS before the award letter is prepared.

Only those candidates who will have received their letters of award shall be eligible for inclusion in the book of graduating students and to attend the graduation ceremony.

2.9. JOINT AWARDS

Definition

Joint award qualification in a University system refers to an award that ensues from jointly executed teaching, supervision and examination or all such multiple responsibilities involving more than one unit in a given university, for instance the PAU, and other relevant and recognized Universities.

2.10. Joint Award Certificate

- (i) The name of the joint award degree shall be endorsed by the partner universities and both official languages (if different) shall be used on the award certificate by mutual consent.
- (ii) The joint Award certificate shall bear both/all the logos of the collaborating universities side by side, a lead statement of the awarding bodies in the partner universities, the title of the degree (and class, if applicable), candidate's name, date of award and signature of the relevant university authorities. The quality of paper used shall be agreed upon and the relevant university seals shall be embossed.
- (iii) The graduating candidate shall receive the joint award only once at a graduation ceremony in a partner university of his/her choice. However, the names of the candidate shall be included in the graduation lists of both the partner universities and the candidate shall be free to attend both graduation ceremonies

3.0

**MASTER OF SCIENCE
(Veterinary Vaccine Production & Quality Control)
&
MASTER OF SCIENCE IN AVIAN MEDICINE**



3.1 Master of Science (Msc) Veterinary Vaccine Production and Quality Control

Course syllabus

Course Title	Core/Required/Elective/	Hours of Lecture	Hours of Practical	Total Hour	Course Unit
FIRST SEMESTER					
PVP711 Advanced Bacteriology	C	15	90	105	3
PVP713 Advanced Virology	C	15	90	105	3
PVP715 Molecular Biology	R	30	0	30	2
PVP717 Mycology	R	15	90	105	3
PVP719 Advanced Immunology	C	30	45	75	3
PVP 701 Microbes in our Environment	E	15	45	60	2
PVP721 Advanced Parasitology	R	15	45	75	2
	TOTAL				18
Course Title	Core/Required/Elective/	Hours of Lecture	Hours of Practical	Total Hour	Course Unit
SECOND SEMESTER					
PVP710 Vaccinology & Vaccine Quality Control	C	15	45	60	2

PVP712 Viral Vaccine Production	C	30	45	75	3
PVP714 Bacterial Vaccine Production	C	30	45	75	3
PVP 716 Quality Management System & Laboratory Animal Management	C	30	45	75	3
PVP718 Research Methods and Experimental Design	R	30	0	30	2
PVP722 Handling and Shipment of Dangerous Goods / Cold Chain	R	30	0	30	2
PVP 702 Laboratory Biosafety and Biosecurity	R	15	45		2
PVP704Vaccine Registration Process	R	30	0	30	2
	TOTAL				19

Course Title	Core/Required/Elective/	Hours of Lecture	Hours of Practical	Total Hour	Course Unit
THIRD SEMESTER					
PVP721 Internship in Veterinary Vaccine Production and Quality Control	C	0	270	270	6
	TOTAL				6

Course Title	Core/Required/Elective/	Hours of Lecture	Hours of Practical	Total Hour	Course Unit
FOURTH SEMESTER					
PVP720 Seminar:	C	30	0	30	2
PVP724 Project:	C	0	270		6
	TOTAL				8

3.2 Veterinary Vaccine Production and Quality Control Courses

S/no.	Course Code	Course Title	Credit Unit	Course Status
1	PVP710	Vaccinology and Quality Control of Vaccines	2	C
2	PVP711	Advanced Bacteriology	3	C
3	PVP712	Viral Vaccine Production	3	C
4	PVP713	Advanced Virology	3	C
5	PVP714	Bacterial Vaccine Production	3	C
6	PVP715	Molecular Biology	2	R
7	PVP716	Quality Management System and Laboratory Animal Management	3	R
8	PVP717	Advanced Mycology	3	R
9	PVP718	Research Methods and Experimental Design	2	R
10	PVP719	Advanced Immunology	3	C
11	PVP720	Seminar	2	C
12	PVP721	Internship in Vaccine Production	6	C
13	PVP722	Handling and Shipping of Dangerous Good/ Cold Chains	2	R

14	PVP724	Project:	6	C
15	PVP701	Microbes in our Environment	2	E
16	PVP702	Laboratory Biosafety and Biosecurity	2	R
17	PVP 703	Advanced Parasitology	2	R
18	PVP 704	Vaccine Registration Process	2	R

3.3 PVP710 VACCINOLOGY [3 C.U]

Course description

This course will involve series of lectures on vaccine, vaccine development and its use.

Course purpose

This course will provide students with in-depth knowledge on vaccine development and mechanism of vaccine protection.

Course topics

- History of vaccination
- Type of Vaccines
- Pathway to vaccine development
- Mechanism of vaccine protection
- Vaccine construction
- Measurement to immune response to vaccination
- Vaccine efficacy and safety
- Adjuvant in making vaccines immunogenic
- DNA vaccines

3.4 PVP711 ADVANCED BACTERIOLOGY [3 C.U]

Course description

This course will provide an overview of bacteria of Veterinary importance at an advanced level.

Course purpose:

To equip the students with knowledge in bacteriology for use in bacterial vaccine production and quality control.

Course topics

- General principle of bacteria taxonomy
- Classification of bacteria
- Characteristics and structures of bacteria
- Overview of bacterial diseases of animals including zoonosis
- Emerging and re-emerging bacterial diseases of domesticated and wild animals
- Bacterial genetics

- General biochemical background of bacteria.
- Isolation and Identification methods of common bacteria of veterinary importance.
- Pathogenesis of bacterial diseases including molecular basis of host-bacterial relationship.

Recommended text:

- Microbiology by Simon Baker *et al.* Taylor and Francis (Publisher)
- Medical Microbiology by Robert Cruikshank *et al.* Churchill Livingstone Edinburgh
- Text-Book of Bacteriology by Carl Fraenkel. Forgotten Books, 2012
- Journal of Bacteriology

3.5 PVP712 VIRAL VACCINE PRODUCTION[3 C.U]

Course Description

This course will provide a step by step teaching on viral vaccine production.

Course purpose

Students will acquire theoretical knowledge and practical skills in viral vaccine production.

Course topics

- Preparation of seed virus stock
- Generation of viral sub-units and antigens
- Inactivation/Purification of viral antigens
- Formulation of viral vaccine.
- Lyophilisation processes
- Product purity, safety and potency testing.
- Packaging

Recommended text:

Vaccines (Sixth edition). ISBN: 978-1-4557-0090-5 Copyright @ 2017 Elsevier B. V.

The Virus and the Vaccine: Contaminated Vaccine, Deadly Cancers and Government Neglect. ISBN – 13: 978-0312342722: ByDebbie Bookchin& Jim Schumacher

Influenza and Influenza Vaccine: by Raymond A. Strikas, MD, MPH; CDC, (Pink Book) webinar series, September 7, 2016

3.6 PVP713 ADVANCED VIROLOGY [3 C.U]

Course description

This involves teaching of viruses, animal diseases and laboratory methods used for diagnosis.

Course purpose:

To prepare students with knowledge in the manipulation of viruses for vaccine production and quality control.

Course topics

- Understanding the principle and uses of different medium for viral cultivation
- Classification of viruses
- Characteristics and structures of viruses.
- Isolation, cultivation, replication, concentration and purification of viruses.
- Pathogenesis of viral diseases including molecular basis of host-viral relationship
- Serological, molecular and other techniques used for viral identification.

Recommended text

- Fields VIROLOGY. David M. Knipe et al (Editors). By Lippincott Williams & Wilkins.
- A Concise Review of Veterinary Virology D.J. Wise, G.R. Carter and E. F. Flores
- Cunningham, C. H. (latest edition). *A Laboratory Guide in Virology*, 7th ed. Burgess Minneapolis MN.
- Journal of Virology

3.7 PVP714 BACTERIAL VACCINE PRODUCTION [3 C.U]

Course description

To provide the student with detailed processes on bacterial vaccine production

Course purpose

To enable students have theoretical knowledge and practical exposure in bacterial vaccine production

Course topics

- Preparation of seed bacteria stock
- Generation of bacterial sub-units and antigens
- Inactivation/Purification of bacterial antigens
- Formulation of the vaccine.
- Lyophilisation processes
- Product purity, safety and potency testing.
- Packaging and storage

Recommended Text

Bacterial Vaccines: Edited by Rene Germanier, Academic Press

The Vaccine Book: Edited by Barry R. Bloom and Paul-Henri Lambert, Academic Press

Vaccines for Biodefense and Emerging and Neglected Diseases: By Alan D. T. Barrett & Lawrence R. Stanberry. Academic Press

3.8 PVP715 MOLECULAR BIOLOGY AND BIOINFORMATICS [2C.U]

Course description

This course provides knowledge on molecular basis of existence of microbes and bioinformatics

Course purpose

To enable students understand molecular basis of microbial genetic activities in relation to vaccine production and quality control.

To impart knowledge in bioinformatics for microbial analysis and manipulations.

Course topics

- The central dogma
- Growth and its control, genetic organization of the organisms' protein production;
- The use of PCR and DNA/RNA sequencing.
- Recombinant DNA technology
- Bioinformatics: Application of Bioinformatics Bioinformatic Software and data manipulation, GenBank, Nucleic acid amplification and sequencing, use of Gene Sequences Analysis software (BioEdit®, MEGA, CLC etc), Phylogenetic tree construction and analysis.

Recommended Text

Molecular Cell Biology: (Lodish, Molecular Cell Biology) by Lodish *et al.*

Molecular Biology of the Cell: 5th Edition. ISBN – 13: 978-0815341055

“The Sequence:” by Kevin Davies [Weidenfeld; ISBN 0297646982

Bioinformatics Algorithms: An Active Learning Approach Vol. 1&2 by Phillip Compeau and Pavel Pevzner

3.9 PVP716 LABORATORY ANIMAL AND QUALITY MANAGEMENT SYSTEM [3 C.U]

Course description

This course provides teaching on the application of laboratory quality management system and animal care.

Course purpose

At the end of the course, student will be familiar with the implementation of quality laboratory operations.

Course topics

- Introduction to quality manual.
- Quality policy
- Organization
- Management of Lab equipment
- Purchasing and inventory
- Process management
- Assessment/audit
- Customer focus

Recommended text

WHO quality manual 2013

Management of Laboratory Animal Care and Use Programs: Edited by Mark A. Suckow, Fred A. Douglas and Robert H. Weichbrod; CRC Press

Handbook of Laboratory Animal Management and Welfare: By Sarah Wolfensohn and Maggie Lloyd. 4th Edition. ISBN – 13: 978-0470655498. Wiley-Blackwell

3.10 PVP717 MYCOLOGY [3 C.U]

Course description

Course Involves collection of specimen, isolation and characterization of fungi.

Course purpose

This is to enable students monitor vaccine products for fungi contamination and to train students on the advances in vaccine production of fungi.

Course topics

- Classification and general characteristics of pathogenic fungi: Special reference to fungal contaminants.
- Reproduction in fungi.
- Isolation and identification of fungi: Emphasis on media, staining and diagnostic techniques
- Beneficial and detrimental effects of fungi.
- Possible mycotic contaminants of vaccines of Veterinary and Medical importance and their prevention.
- Prevention of mycotic contaminations.
- Possible advances in vaccine production

Recommended Text

Illustrated Dictionary of Mycology: Second Edition by Miguel Ulloa and Richard T. Hanlin

Medical Mycology: A self-Instructional Text by Kathleen S. Blevins PhD
MLS (ASCP) CLS (NCA)

Introductory Mycology: 2nd Edition; By Constantine J. Alexopoulos

3.11 PVP718 RESEARCH METHODS AND EXPERIMENTAL DESIGN [2 C.U]

Course description

This course will provide knowledge of statistics in human biology and medicine and allows revision of basic concepts of probability and descriptive statistics. Others include significance test methods based on the normal distribution, analysis of variance, regression and correlation. The confidence intervals, formal and informal tests assumption, test for discrete data, contingency tables, and basic distribution free methods will be taught.

Course purpose

This course is to enable acquire statistical knowledge for their use in processing and interpretation of data for clinical and research uses.

Course topics

- Statistics,

- Study designs,
- Scales of measurement, quality of measurement, statistical variable/data,
- Qualitative and quantitative data sources.
- Sampling methods and sample size determination,
- Data organization: Statistics Charts, Tables, Graphs Frequency Tables, Frequency distribution;
- Histogram, Stem and leaf plot, box plot;
- Summary indices: Mean, Median, Modes Variance Standard Deviation;
- Probability distributions: Normal, Binomial, Poisson distribution, Descriptive statistics, frequency table, tables for qualitative and quantitative data, diagrams, types of diagrams.
- Data summarization: Summary indices, measures of central tendency and dispersion;
- Test of statistical hypothesis; Confidence intervals; Parametric and non-parametric tests: Z-test for proportions, Chi-square test, Fischer's exact test and T-test. Analysis of variance, Regression and correlation, Spearman rank and Kendal correlation.

Recommended text:

Research Design: Qualitative, Quantitative and Mixed Methods Approaches by John W. Creswell

Basic of Qualitative Research: Techniques and Procedures for Developing Grounded Theory by Juliet M. Corbin; 2014

3.12 PVP7 19ADVANCED IMMUNOLOGY[3 C.U]

Course description

This course will provide knowledge on various topics of clinical immunology.

Course purpose

To enable students understand innate and acquired protective processes in livestock and poultry. Provide skills and techniques for use in the laboratory for the diagnosis of animal diseases.

Course topics

- Overview of immunity in animals.
- Body defence mechanism
- Humoral and cellular immunity

- Complement system
- Techniques for measuring immunity
- Hypersensitivity reactions
- Immune mechanism to specific pathogens
- Immune response to parasites, bacteria, viruses, parasites and fungi.
- Immunotherapy/Immunoprophylaxis

Recommended texts

Avian Immunology: Fred Davison, Bernd Kaspers and Karel A. Schat (Editors). ELSEVIER.

Introduction: Immunology, Bacteriology, Virology, Parasitology, Mycology & Infectious Diseases On-line: by University of South Carolina School of Medicine

The Immune System: 4th Edition by Peter Parham. ISBN- 13: 978-0815344667

How the Immune System works: 5th Edition. ISBN-13: 978-1118997772

3.13 PVP720 SEMINAR [2 C.U]

Course description

Assignments are given to candidates on topics relevant to Vaccine Production, Vaccination and Quality Control for detailed study and analysis and presentation in form of seminars for scored assessment.

Course Purpose

This is to teach students on rudiments of presentations, organisation of subjects of scientific interest and expose them to problems associated to vaccines.

Course topics

To be assigned by supervisors and based on student's interest.

3.14 PVP721 INTERNSHIP IN VACCINE PRODUCTION [6 C.U]

Course description

Four to six months attachment to a Veterinary Vaccine Production Centre, Laboratory or Institute.

Course purpose

To expose students to hands-on experience in all aspects of vaccine production

Course topics

- Processes of vaccine production
- Quality control of end products

Recommended text

Manual for Diagnostic and vaccine for terrestrial animals [OIE]

Basic Laboratory manual for the small scale production and testing of I-2

Newcastle Disease vaccine Sally Grines 2002

Vaccine Manual: The production and quality control of Veterinary Vaccines for use in Developing countries Noel Mowat& Mark Rweyemamu.

3.15 PVP722 HANDLING AND SHIPMENT OF DANGEROUS GOODS/ COLD CHAIN [3 C.U]

Course description

This course will teach students the handling, packaging and shipment of biologicals and cold chain.

Course purpose

Students course will provide students with expertise in the management and shipment of biologicals and cold chain.

Course topics

- Classification of dangerous materials
- Characterization of dangerous materials
- Packaging and packaging materials
- The cold chain
- IATA regulations on the shipment of dangerous materials
- Documentation and transport of dangerous materials

Recommended text

IATA manuals

OIE Manuals

WHO manuals

3.16 PVP724 PROJECT[6 C.U]

Course description

Detailed investigation and documentation of any subject of clinical interest on vaccine or vaccine production and presentation in form of Thesis for both internal and external assessments.

Course purpose

To familiarise students with research in vaccine production and quality control.

Course topics

- Student to select project topic in any area of vaccine production and quality control.

3.17 PVP701 MICROBES IN OUR ENVIRONMENT [2 C.U]

Course description

The course will teach students on the type of microorganisms that are present in the environment..

Course purpose

Students will acquire knowledge on microorganisms that are potentially harmful, useful as well as those that constitute contaminants in vaccine production.

Course topics

- Characteristics of bacteria and their classification
- Characteristics of fungi and their classification
- Overview of bacteria and fungi that are found in water, air and animal body
- Role of microbes as commensals in animals
- Isolation and Identification methods used for these microbes.

Recommended text

Microbiology: by Simon Baker *et al.* Taylor and Francis (Publisher)

Introduction: Immunology, Bacteriology, Virology, Parasitology, Mycology & Infectious Diseases On-line: by University of South Carolina School of Medicine

Medical Microbiology: by Robert Cruikshank *et al.* Churchill Livingstone

Edinburgh
Journal of Bacteriology

3.18 PVP 702 LABORATORY BIOSAFETY AND BIOSECURITY[2 C.U]

Course description

This course will teach students best practices in the laboratory and management of bio-risk.

Course purpose

- To enable students acquire skills and knowledge in biosafety and biosecurity

Course topics

- Introduction to laboratory safety
- Good laboratory practices
- Use of personnel protective equipment
- Laboratory bio-containment
- Decontamination
- Waste management and disposal
- Laboratory hazards
- Safety equipment in the laboratory
- Bio risk assessment and mitigation

Recommended text

Biosafety in Microbiological and Biomedical Laboratories: 5th Edition CDC
AU-PANVAC Biosafety manual
OIE Terrestrial manual for diagnostic tests and vaccine

3.19 PVP703 ADVANCED PARASITOLOGY[2 C.U]

Course description

This course provides teaching on animal parasites, and their diseases.

Course purpose

Will enable students acquire knowledge on parasites and their use in vaccine production

Course Topics

- Characteristics of relevant parasites
- Principles of vaccine manufacture using parasites
- Production of Parasitic vaccines
- Quality control and challenges in parasitic vaccines
- DNA, Recombinant and sub-unit parasitic vaccine

Recommended text

OIE Terrestrial manual for diagnostic tests and vaccine

Helminths, Arthropods and Protozoa of Domesticated Animals. Soulsby, E.J.L. Billiere, Tindall and Cassel, London.

Veterinary Parasitology By Urquhart, G. M., Armour, J. Duncan, J. L., Dunn, A.M. and Jennings, F.W. Longman Scientific and Technical, UK Ltd

Journal of Parasitology

Veterinary Parasitology Journal

3.20 PVP704 VACCINE REGISTRATION[2 C.U]

Course description

This course will teach student how to prepare dossier for vaccine registration.

Course purpose

Enable students to acquire skills on the requirement and documentation for vaccine registration

Course topic

- Structure of registration dossier
- Product information
- Quality, manufacture and control
- Safety
- Efficacy
- Bibliography and references
- Harmonization of vaccine registration

Recommended text

OIE Terrestrial manual for diagnostic tests and vaccine

Working together to uniformly license Veterinary Medicine in East Africa.

4.0 MVSC CURRICULUM AVIAN MEDICINE

Course Syllabus for MVSc Avian Medicine

4.1 MASTERS IN AVIAN MEDICINE Course syllabus for full time students

COURSE TITLE	Compulsory(C) Elective (E) Required (R)	Hours of Lecture	Hours of Practical	Total Hours	Credit Units
1st Semester					
COMPULSORY (CORE) COURSES					
PAM711 Advanced Diagnostic Medicine I (ADMI)	C	15	90	105	3
PAM713 Avian Internal Medicine I (AIM I)	C	45	0	45	3
PAM712 Advanc ed Avian Clinical Practice I	C	15	135	150	4
PAM719 Avian Immunology	C	45	0	45	3
2nd Semester					
COMPULSORY (CORE) COURSES					
PAM721 Advanced Diagnostic Medicine II (ADMII)	C	15	90	105	3
PAM725 Advanced Clinical Practice II	C	15	135	150	4
REQUIRED COURSES					
PAM727 Advanced Poultry Pathology	R	15	30	45	3
ELECTIVE COURSES					
PAM726 Avian Anatomy	E	30	45	75	3
3rd SEMESTER					
COMPULSORY (CORE) COURSES					
PAM735 Poultry Breeder Health and Hatchery Management	C	30	45	75	3
PAM737 Internship Seminar	C	60	0	60	4
REQUIRED COURSES					
PAM739 Research Methods & Experimental Design	C	30	0	30	2

ELECTIVE COURSES					
PAM738 Disease Surveillance and Emergency Preparedness	E	15	45	60	2
4th SEMESTER					
COMPULSORY (CORE) COURSES					
PAM748 Research Thesis	C	0	270	270	6
PAM749 Orthopaedic and Injury Intervention in Avian Species	R	15	45	60	2

S/no.	Course Code	Course Title	Credit Unit	Course Status
1	PAM711	Advanced Diagnostic Medicine I (ADM I)	3	C
2	PAM713	Avian Internal Medicine I (AIM I)	3	C
3	PAM712	Advanced Avian Clinical Practice I	4	C
4	PAM719	Avian Immunology	3	C
5	PAM721	Advanced Diagnostic Medicine II (ADM II)	3	C
6	PAM725	Advanced Avian Clinical Practice II	4	C
7	PAM726	Avian Anatomy	3	E
8	PAM727	Advanced Poultry Pathology	3	R
9	PAM735	Poultry Breeder Health and Hatchery Management	3	C
10	PAM739	Research Methods & Experimental Design	2	C
11	PAM738	Disease Surveillance and Emergency Preparedness	2	E
12	PAM747	Internship Seminar	4	C
13	PAM748	Research Thesis	6	C
14	PAM749	Orthopaedic and Injury Intervention in Avian Species	2	R

4.2 PAM711 ADVANCED DIAGNOSTIC MEDICINE I (ADMI)

Course description

Laboratory study of various diagnostic tests for common infectious diseases of avian species. This course teaches the theory and practical aspects of laboratory technics for the diagnosis of avian diseases.

Course purpose

The purpose of this course is to make the participants proficient in definitive (confirmatory) diagnosis of avian diseases using laboratory me

Course topics

- Decontamination and Lab waste management
- Lab quality management
- Biosecurity in field and safety in Lab
- General introduction to laboratory diagnosis. Sample collection, transportation, processing, storage and choice of assay.
- Guide for sampling (faecal, cloacal, pharyngeal and tissue) at anti- and postmortem levels in avian species for diagnosis.
- Diagnostic bacteriology: Media preparation, reagents and handling of specimen for microbiological investigations with special reference to avian patients.
- Identification of major avian coccidia, fungi, major ecto and endoparasites and haemoparasites and use of avian embryo in laboratory diagnosis.

Recommended texts

A Laboratory Manual for the Isolation and Identification of Avian Pathogens. Edts: David E. Swayne et. al. (Pub. American Association of Avian Pathologists)

4.3 PAM712 ADVANCED AVIAN CLINICAL PRACTICE I

Course description

Introduction of participant to clinical case diagnosis, sampling and reporting Clinical diagnosis and clinico-pathological study of cases from poultry farms, caged, aviary, captured and free flying wild birds.

Course purpose

The purpose of this course is to teach participants to clinical case handling,

disease investigation, case reporting, approach to diagnosis and disease management in avian species.

Course topics

- Disease investigation and management
- History taking
- Clinical examination
- Sampling

Recommended text

Natalia Majo and RoserDolz (2012). *Atlas of Avian Necropsy*. MerialServet, Grupo Milan. S. L. Zaragoza, Spain, 82pp.

Abdu, P. A. (2014). *Manual of Important Poultry Diseases in Nigeria*. 3rd Edition, ISBN 978-125-248. 5 and 6 Ventures Jos, Plateau State, Nigeria, 106pp.

4.4 PAM725 ADVANCED AVIAN CLINICAL PRACTICE II

Course description

Clinico-pathological studies of cases from poultry farms, caged aviary, captured and free flying wild birds.

Course purpose

To teach disease investigation approach and disease management.

Course topics

- Farm visits
- Post mortem examination

4.5 PAM713 AVIAN INTERNAL MEDICINE

Course description

Teachings on common disorders of, digestive, (including liver and pancreas), respiratory and reproductive systems of avian species and management techniques. Congenital, nutritional, endocrine and behavioural disorders; parasitic, bacterial, viral and fungal infections, as well as, neoplastic conditions affecting these systems in avian species.

Course purpose

Broad teachings on, diagnosis and control of common disorders of birds.

Course topics

- Common conditions affecting the gastrointestinal tract in poultry and aviary birds: Bacterial, viral and protozoan diseases.
- Functional and neoplastic disorders in aviary birds.
- Overview of clinical implications of liver disease: aetiologies, clinical signs, diagnosis, treatment.
- Chlamydiosis, Pacheco's disease, etc. Disorders of the pancreas: pancreatic insufficiency, pancreatitis, neoplasia, diabetes mellitus.
- Common conditions affecting the respiratory system in poultry and aviary birds: Bacterial, viral, protozoan and fungal diseases such as brooder pneumonia, pneumovirus infections, infectious laryngotracheitis, etc.
- Common conditions affecting the reproductive system in poultry and aviary birds: Bacterial, viral and protozoan diseases.
- Investigating reproduction problems in an avian species: cessation of egg production, infertile eggs, embryonic deaths, etc.
- Understanding bird behaviour, development of behavioural problems, and management of behavioural disorders.
- Cardiac diseases and conditions affecting the cardiovascular system in poultry species: Vitamin E deficiency, gout, bacteria septicaemia, neoplastic disease (Marek's disease), etc.
- Artherosclerosis and hypertension in birds– overview, aetiology, clinical presentation, diagnosis and management.
- Overview of common conditions affecting the nervous system in poultry and aviary birds: Newcastle disease, avian influenza, vitamin E deficiency, Marek's disease, avian encephalomyelitis, etc.
- Overview of common disease conditions affecting the Urinary system in poultry and other avian species.

Recommended texts

Diseases of Poultry. Hofstad M. S et al (Eds)

Avian Histopathology, 2008, Ed. O. Fletcher, 3rd Ed, AAAP publication. Jacksonville, FL.

Color Atlas of Avian Histopathology, 1996, C.J. Randall and R.L. Reece, Mosby-Wolfe

Diseases of Poultry, 2013, Ed. D. Swayne, *et al.*, Blackwell Publishing, Ames, Iowa

Color Atlas of Diseases and Disorders of the Domestic Fowl, 1991, C.J. Randall, Iowa State University Press, Ames, Iowa.

Avian Diseases Manual, 2013, 7th Edition, AAAP publication. Jacksonville, FL
Pathology of Pet and Aviary Birds, 2003. R. E. Schmidt, D. R. Reavill and D. N. Phalen. Blackwell Publishing, Oxford, UK.
Avian Medicine: Principles and application, 1994, Ed. B. W. Ritchie, G.J. Harrison and L.R. Harrison, Wingers publishing, Lakeworth, FL
Field Manual of Wildlife Diseases: General field procedures and diseases of migratory birds, 2001, Ed. M. Friend, US Dept. Interior, Fish and Wildlife Service pub, Washington, DC.
Diseases of Cage and Aviary birds, 1996, W. J. Rosskopf and R.W. Woerpel, Williams and Wilkins, PA
Diseases of Wild Waterfowl, 1981, G.A. Wobeser, Plenum Press, NY

4.6 PAM719 AVIAN IMMUNOLOGY

Course description

A series of lectures on the avian immune system, organs of immunity in birds and types of immune responses, cells of immunity, cytokines and chemokines in birds, avian immunoglobulins and other peculiarities of the bird's immune system. Avian immunosuppressive diseases and immune evasion. Practical aspects of poultry vaccination.

Course purpose

The course will teach participants the scientific bases of protection by vaccination, interactions between avian pathogens and the immune system and some peculiarities of avian immunity.

Course topics

- Avian immune organs
- Structure and features of the Avian immune system
- Adaptive and non-adaptive immunity in avian species.
- Cellular (avian T cells, antigen recognition and lineages; avian cytokines and chemokines) and humoral immunity (B cells, the Bursa of Fabricius and the generation of antibody repertoires)
- Steps of immune response
- Immunosuppression
- Vaccines and vaccination
- Avian immunosuppressive diseases and immune evasion

Recommended texts

Diseases of Poultry by Saif Y. M

Avian Immunology Vol. I, II and III by Fred Davison, Bernd Kaspers and Karel A. Schat.

Gimeno, M. Isabel (2013). Immunosuppressive Diseases of Poultry. Merial Gear Partnership, Grup Milan, S. L. Zaragoza, Spain, 172pp.

4.7 PAM721 ADVANCED DIAGNOSTIC MEDICINE II (ADMII)

Course description

This course is a continuation of ADM I which teaches the theory and practical aspects of more advanced laboratory technics for the diagnosis of avian diseases and for research in avian diseases.

Course purpose

This course will enable participants be proficient in more advanced laboratory techniques for diagnosis of and research in avian diseases.

Course topics

- Isolation, culturing and identification of major viruses of avian species.
- Haemagglutination, haemagglutination inhibition test, agar gel diffusion test, precipitation test.
- Tissue culture techniques for virus isolation
- Diagnostic Serology: Serum neutralisation test, ELISA, Dot-Blot ELISA, Immunoperoxidase.
- Use of monoclonal and polyclonal antibodies in disease diagnosis with reference to avian diseases.
- Preparation of immune sera and isolation of immunoglobulin.
- Molecular techniques.

Recommended texts

Virology: A Laboratory Manual by Florence G. B; Thomas M. C and Danny L. W

The ELISA Guide Book by John R. Crowther.

Basic Virological Techniques by Grace C. Rovozzo

Molecular Cloning. A laboratory manual by J. Sambrook; E. F Fritsch and T. Maniatis.

4.8 PAM727 ADVANCED POULTRY PATHOLOGY

Course description

Pathogenesis and pathology for the diagnosis of poultry diseases

Course purpose

To enhance better understanding of pathogenesis and pathology of avian diseases

Course topics

- Pathogenesis, gross and microscopic manifestations of bacterial, fungal and parasitic infections in avian species.
- Pathogenesis, gross and microscopic manifestations of viral infections in avian species.
- Pathogenesis, gross and microscopic manifestations of metabolic and nutritionally related diseases of avian species.
- Pathogenesis, gross and microscopic manifestations of toxins in avian species.
- Changes in haematology and clinical chemistry induced by infectious and non-infectious conditions in avian species.
- Cytology and immunohistochemistry.

Recommended texts

Diseases of Poultry. Hofstad M. S et al (Eds)

Avian Histopathology, 2008, Ed. O. Fletcher, 3rd Ed, AAAP publication. Jacksonville, FL.

Color Atlas of Avian Histopathology, 1996, C.J. Randall and R.L. Reece, Mosby-Wolfe

Diseases of Poultry, 2013, Ed. D. Swayne, *et al.*, Blackwell Publishing, Ames, Iowa

Color Atlas of Diseases and Disorders of the Domestic Fowl, 1991, C.J. Randall, Iowa State University Press, Ames, Iowa.

Avian Diseases Manual, 2013, 7th Edition, AAAP publication. Jacksonville, FL

Pathology of Pet and Aviary Birds, 2003. R. E. Schmidt, D. R. Reavill and D. N. Phalen. Blackwell Publishing, Oxford, UK.

Natalia Majo and Roser Dolz (2012). *Atlas of Avian Necropsy*. MerialServet, Grupo Milan. S. L. Zaragoza, Spain, 82pp.

Avian Medicine: Principles and application, 1994, Ed. B. W. Ritchie, G.J. Harrison and L.R. Harrison, Wingers publishing, Lakeworth, FL

4.9 PAM726 AVIANANATOMY

Course description

Functional and comparative anatomy of domestic birds and pet birds. Emphasis on structure as related to function and adaptation of the structure of different species to their mode of existence.

Course purpose

This course is to make participants understand the relationship between systems and their functions in avian species.

Course topics

- General overview of the anatomy of avian species
- Cutaneous structures and feathers of birds
- Musculoskeletal system of birds
- Celomic cavities of birds
- Digestive system of birds
- Respiratory System of Birds
- Female and male reproductive systems of birds
- Cardiovascular system of birds
- Endocrine and lymphatic system of birds
- Nervous system in birds.

Recommended texts

Outlines of Avian Anatomy by King A. S. and J. McLelland (Bailliere Tindall, London).

A Coloured Atlas of Avian Anatomy by J McLelland (Wolfe Publishing Ltd, London)

Journals

4.10 PAM735 POULTRY BREEDER HEALTH AND HATCHERY MANAGEMENT

Course Description

Study of breeders' health, hatchery management, poultry stock immune profiling and predictive health status.

Course purpose

The course is to allow the students have deep understanding of the management of breeder poultry farms, the identification and control of problems in hatchery and breeders.

Course topics

- Management aspects of poultry breeders health.
- Housing and management of parent stocks.
- Vaccination of poultry breeders.
- Poultry flock immune profiling
- Care of hatchable eggs.
- Parental chick immunity.
- Egg borne diseases.
- Incubation of hatchable eggs.
- Egg incubation problems.
- Procedure for investigation of hatchability problems.
- Biosecurity in breeder farms, hatcheries and feed mills.

Recommended texts

Egg and eggshell quality by Solomon S. E. Iowa State University press (USA).

Avian incubation. Poultry Science Symposium No 22 by Tullet S. G. Butterworth-Heinemann, London.

The health of poultry. Mark Pattison (Editor). Longman Scientific & technical.

Biosecurity in poultry industry. Simon M. Shane et al (Editors) by American Association of Avian pathologists.

4.11 PAM739 RESEARCH METHODS & EXPERIMENTAL DESIGN

Course description

Basic experimental models in human biologic and medicine and basic concepts in probability and descriptive statistics.

Course purpose

Designing, analyzing and interpretation of research results using modern statistic methods.

This course is to enable the students acquire statistical knowledge for their use in processing and interpretation of data for clinical and research uses.

Course topics

- Introductory statistics,
- Study designs,
- Scales of measurement, quality of measurement, statistical

variable/data,

- Qualitative and quantitative data sources.
- Sampling methods and sample size determination,
- Data organization: Statistics Charts, Tables, Graphs Frequency Tables, Frequency distribution;
- Histogram, Stem and leaf plot, box plot;
- Summary indices: Mean, Median, Modes Variance Standard Deviation;
- Probability distributions: Normal, Binomial, Poisson distribution, Descriptive statistics, frequency table, tables for qualitative and quantitative data, diagrams, types of diagrams.
- Data summarization: Summary indices, measures of central tendency and dispersion;
- Test of statistical hypothesis; Confidence intervals; Parametric and non-parametric tests: Z-test for proportions, Chi-square test, Fischer's exact test and T-test. Analysis of variance, Regression and correlation, Spearman rank and Kendal correlation.
- Modeling, scientific writing, hypothesis testing

Recommended text

Statistical Methods for Data Analysis and Data Interpretation by Alegbeleye G. O. et al (Eds).

Elementary Statistics. McGraw Hill, Higher Education, New York.

Basic and Clinical Biostatistics. By Dawson B. and R. G Trapp. Lange Medical books/McGraw-Hill, Medical Publishing Division, New York.

Introductory Statistics. Evan Brothers (Nigeria Publishers) Limited. Jericho Road Ibadan, Nigeria.

4.12 PAM738 DISEASE SURVEILLANCE AND EMERGENCY PREPAREDNESS

Course description

Teachings on disease surveillance, Trans Boundary Animal Diseases (TAD), National Animal disease Information System (NADIS), role of International Organisation and emergency preparedness as it relates to avian diseases

Purpose of course

This course is to let the participants understand procedures in disease surveillance and preparation for emergency situation most especially in

pandemic situations. Participants will also be taught role of international organisation in disease surveillance and control.

Course topics

- Definitions, classification of diseases of avian species.
- Disease patterns, disease surveillance.
- Role of international organizations in disease surveillance.
- Maps and grid references, uses of GIS in disease mapping, Risk assessment,
- National Animal Disease Information System (NADIS info), Epi-Info, TAD in the diagnosis,
- Treatment and control of transboundary avian diseases, travel diseases of man, past and present disease.
- Trans boundary avian diseases
- Characteristics of avian diseases subject to mandatory reporting
- Surveillance (objectives, types, data collection, case definition & classification, premises calcification, back forward and contact tracing, biosecurity and biosafety, interaction with stakeholders)
- Surveillance plan
- Emergency preparedness and response plan
- Good emergency management practices
- Disease reporting (types of reports, channel and tools of reporting)
- National Animal Disease Information System (NADIS).
- Uses of GIS in disease mapping
- Risk assessment and risk management

Recommended text

Risk-Based Disease Surveillance by A. Cameron, F. Njeumi, D. Chibeu and T. Martin, FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS Rome, 2014.

Good Emergency Management Practice: The Essentials A guide to preparing for animal health emergencies by **Nick Honhold, Ian Douglas, William Geering, ArnonShimshoni, Juan Lubroth**FAO ANIMAL PRODUCTION AND HEALTH FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS **Manual** Rome, 2011.

Strategies for the Prevention of Introduction of Highly Pathogenic Avian Influenza (HPAI) into Nigeria by Federal Department of Livestock and Pest Control Services, 2006

4.13 PAM737 SEMINAR

Course description

Detailed study and analysis of any selected subject of clinical or clinico-pathological interest in avian medicine and presentation in form of seminars for scored assessment.

Purpose of course

To teach students on rudiments of presentations and organisation of clinical cases.

Course topics

To be decided by student within Avian Medicine. There will be two presentations

4.14 PAM748 RESEARCH THESIS

Course Description

Detailed investigation (research) and documentation of any subject of clinical interest in avian medicine and presentation in the form of a Dissertation for both internal and external assessments.

Course purpose

To enable students contribute to knowledge in Avian Medicine

Course topics

Student to select project topic in any area of avian medicine. Students to present i. Pre-project and ii. Post project seminars.

4.15 PAM749 ORTHOPAEDIC AND INJURY INTERVENTION IN AVIAN SPECIES

Course Description

Approach to treatment of orthopaedic problems and injuries in zoo and fancy birds.

Course purpose

The handling of orthopaedic and injury problems in avian species especially in zoo and caged fancy birds. This is a new trend in Avian medical practice.

Course topics

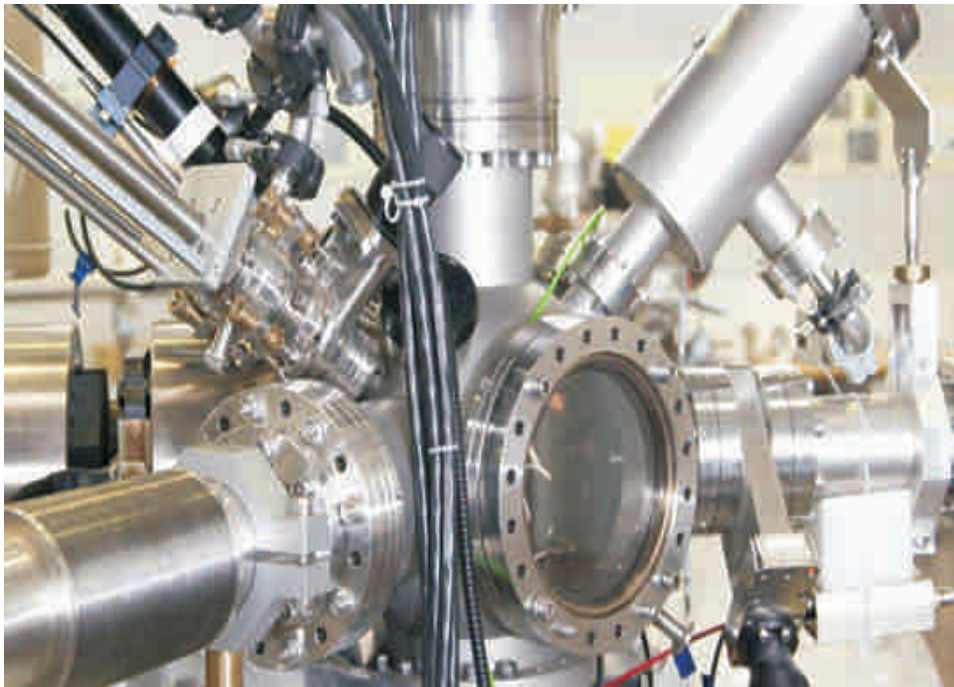
- Introduction to orthopaedic problems in avian species (possible sources and causes, effects in different avian species)
- Injuries and sources in poultry, zoo and fancy birds.
- Wound management in birds
- Sequential diagnosis and management of various orthopaedic problems in in zoo and poultry birds.
- Orthopaedic facilities in use for various avian species (including various implants in fixing fractures)
- Traumatic and non – traumatic problems of diarthrodial joints in birds.
- Diagnostic protocol and management of lameness in avian species.

Recommended texts

To be added later.

5.0 MSC . MEDICINAL PLANTS RESEARCH AND DRUG DEVELOPMENT

5.1 MASTERS IN MEDICINAL PLANT RESEARCH AND DRUG DEVELOPMENT



Course Syllabus

COURSE TITLE	Compulsory/Elective	Hours of Lecture	Hours of Practical	Total Hour	Units
First semester					
COMPULSORY COURSES					
PMR 711 Drug Development from Medicinal Plants	C	30	0	30	2
PMR 712 Separation Techniques and Bioassay Methods in Natural Product Research	C	30	0	30	2
PMR 713 Conservation, Bioethics and Policy Issues in Medicinal Plant Research	C	45	0	45	3
PMR 714 Drugs from Biological Origin	C	45	0	45	3
PMR 716 Medicinal Plant Taxonomy	C	30	0	30	2
REQUIRED COURSES					
PMR 717 Advanced Laboratory Course I	R	0	135	135	2
PSM 727 Basic Statistical Procedures	R	45	0	45	2
ELECTIVE COURSES					
PMR 715 Application of Microscopy and Herbarium Techniques in Medicinal Plant Research	E	30	0	30	2
PMR 718 Ethnobotany and Toxicology	E	30	0	30	2
2nd Semester					
COMPULSORY COURSES					
PMR 721 Methods in Medicinal Plant Research and Phytochemistry	C	45	0	45	3
PMR 722 Seminar	C	30	0	30	2
PMR 723 Standardization and Quality Assurance of Natural Products	C	45	0	45	3
REQUIRED COURSES					
PMR 724 Clinical Pharmacognosy and Nutrition Therapy	R	30	0	30	2
PMR 725 Advance Laboratory Course II	R	0	135	135	2
ELECTIVE COURSES					
PMR 726 Medicinal Plant and other Raw Materials	E	30	0	30	2
PMR 727 Plant Drugs for Common Tropical Disease Management	E	45	0	45	3
PMR 728 Cultivation and Propagation of Medicinal Plants	E	30	0	30	2
3rd SEMESTER					
COMPULSORY COURSES					
PMR 731 Project	C				6
PMR 732 Internship	C				3
4th SEMESTER					
COMPULSORY COURSES					
PMR 731 Project	C				6
PMR 732 Internship	C				3

MSc Medicinal Plant Research and Drug Development

PMR 711 Drug Development from Medicinal Plants 2 C
PMR 712 Separation Techniques and Bioassay Methods in Natural Product Research 2 C
PMR 713 Conservation, Bioethics and Policy Issues in Medicinal Plant Research 3 C
PMR 714 Drugs from Biological Origin 3 C
PMR 715 Application of Microscopy and Herbarium Techniques in Medicinal Plant Research 2 E
PMR 716 Medicinal Plant Taxonomy 2 C
PMR 717 Advanced Laboratory Course I 2 R
PMR 718 Ethnobotany and Toxicology 2E
PMR 721 Methods in Medicinal Plant Research and Phytochemistry 3 C
PMR 722 Seminar 2C
PMR 723 Standardization and Quality Assurance of Natural Products 3C
PMR 724 Clinical Pharmacognosy and Nutrition Therapy 2R
PMR 725 Advance Laboratory Course II 2R
PMR 726 Medicinal Plant and other Raw Materials 2 E
PMR 727 Plant Drugs for Common Tropical Disease Management 3 E
PMR 728 Cultivation and Propagation of Medicinal Plants 2 E
PMR 731 Project 6C
PMR 732 Internship 3C
PSM 727 Basic Statistical Procedures 2R

5.2 PMR 711 DRUG DEVELOPMENT FROM MEDICINAL PLANTS 3 COMPULSORY

Course description

This course will give an overview of drug development from medicinal plants with therapeutic uses.

Course purpose

The purpose of the course is to expose the students to common medicinal plants in Africa as well as various possible drug dosage forms available.

Course topics

- Overview of drug development from medicinal plants
- Pharmacognosy of herbs in relation to healing;
- Common African medicinal plants and their uses (minimum of 50 plants)
- Identification, collection and processing of medicinal plants,
- Presentation of herbal products: Herbal liquid dosage forms (decoction, emulsion, suspension, tincture, lotion, syrup etc); Herbal solid dosage forms (powder, capsule, tablet, medicinal soap, suppository, ointment, etc);
- Simple quality-assurance and validation tests and in-process quality monitoring for efficacy and safety; preservation, labeling, packaging, doses; stability/expiry, shelf-life, storage of finished products and general signs of deterioration: effects of light, heat, air, bacteria, insects, moulds, rodents;
- Herbal business and herbal processing technology
- Good Herbal Preparation Practice (GPP);
- Herbal medicine regulation and relevant Agencies

Recommended texts

1. OmboonVallisata and Suleiman M. Olimat (2012). Drug Discovery Research in Pharmacognosy
2. Mukund S. Chorghade (2006). Drug Discovery and Development John Wiley & sons.
3. P. Krogsgaard-Larsen, S. Brogger Christensen, Helmer Kofod (1985) Natural Products and Drug Development. Raven Pr
4. K. Tayung, A. Puratchikody and S. Ramakrishnan (2014). Natural Products - Drug Development. Studium Press India Pvt Ltd
5. S. S. Agrawal and M. Paridhavi (2013) Herbal Drug Technology

6. H. Panda. The Complete Technology Book on Herbal Beauty Products with Formulations and Processes. Asia Pacific Business Press Inc.

5.3 PMR 712 SEPARATION TECHNIQUES AND BIOASSAY METHODS IN MEDICINAL PLANTS RESEARCH 3 COMPULSORY

Course description

The course will expose students to the various separation techniques and bioassay methods used in medicinal plants research.

Course purpose

To acquaint candidates with the knowledge of the different separation techniques and bioassay methods that will be applicable in their research in medicinal plant research.

Course topics

- Methods for screening of bioactive compounds.
- Bioassay guided phytochemical separations relevant to drug discovery from nature.
- Processes that lead from plants to pharmacologically active pure compounds.
- Principles of extraction, detection, isolation and purification of secondary metabolites of medicinal interest.
- Advantages of molecules that enhance separation. Factors affecting resolution and sensitivity in various chromatographic systems.
- Advanced techniques in chromatography.
- Applications to natural product research (to quantification, purity etc)

Recommended Texts

1. Ashintosh Kar. Pharmaceutical Drug Analysis. New Age International. ISBN: 978-81-224-2718-9
2. Atta-ur-Rahman, M.Iqbal Choudhary and William J.Thomson(2005) Bioassay Techniques for Drug Development. Harwood academic publisher
3. Satyajit D. Sarker, Zahid Latif, and Alexander I. Gray (2005). Natural Products Isolation
4. Journal of Natural Products
5. Journal of Chromatography

5.4 PMR 713 CONSERVATION, BIOETHICS AND POLICY ISSUES IN MEDICINAL PLANT RESEARCH 3 COMPULSORY

Course description

This course will include topics relating to conservation, bioethics and policies as it concerns medicinal plant research.

Course purpose

The purpose of this course is to explore, and discuss emerging issues on conservation, bioethics and policies relating to medicinal plants especially in the African context.

Course topics

- Biodiversity and conservation
- Endangered medicinal plants: Protection of endangered species
- Need for conservation of African medicinal plants: International Trade; Local Market; Health and Livelihood
- Environmental/Socio-Economic Interface;
- Bioethical and Legal Dimensions in conservation;
- Bioprospecting, Biopiracy and the Interests of the Country of Origin in protecting her Genetic Resources and Medicinal Plant;
- Scientific Development, Cooperation and Technology Transfer; the Convention on Biological Diversity (CBD)
- Protection and Utilization of Traditional Knowledge
- Practices and Innovations of Intellectual Property, Patents and Economic Dimensions
- Fingerprinting of economic plants eg using HPLC

Recommended texts

1. Olayiwola Akerele, Vernon Heywood and Hugh Syngé (2009). Conservation of medicinal plants. Cambridge University press.
2. Chopra A.K (2007). Medicinal plants: Conservation, cultivation and utilization. Daya Publishing House, India.
3. Journal of Biodiversity
4. Journal of medicinal plant conservation
5. Biodiversity and conservation

5.5 PMR 714 DRUGS OF BIOLOGICAL ORIGIN 3 COMPULSORY

Course description

This course will expose students to different classes of secondary metabolites.

Course purpose

The course is to provide basic understanding of biological origin of natural drugs.

Course topics

- Microorganisms, Plant and Animal Kingdom as Sources of Novel Bioactive Natural Products.
- Medicinal Plant Phytochemistry: Primary and secondary Metabolites (Alkaloids, terpenoids, anthraquinones, etc)
- Biosynthetic Pathways Leading to Secondary Metabolites.

Recommended texts

1. Samelsonn G. (2015). Drugs of Natural Product origin- A Textbook. Swedish Pharmaceutical Press
2. Ansari S.H (2008). Essentials of Pharmacognosy. Birla Publications, India.
3. Tringali C. (2011). Bioactive compounds from Natural sources: natural products as lead compounds in drug discovery. CRS press
4. Phytochemistry journal
5. Journal of Natural Products

5.6 PMR715 APPLICATION OF MICROSCOPY AND HERBARIUM TECHNIQUES IN MEDICINAL PLANT RESEARCH 3 ELECTIVE

Course description

This course will expose students to microscopy and herbarium principles.

Course purpose

This course will give an in-depth understanding of microscopy and herbarium techniques and their role in medicinal plant research.

Course topics

- Preparation of Herbarium specimens.

- Microscopy and advanced histological techniques.
- Quantitative microscopy and photomicrography.
- Voucher specimens and plant authentication
- Applications to drug evaluation with specific examples from official pharmacopoeia drugs (e.g. African Pharmacopoeia, West African Herbal Pharmacopoeia, Ghana Herbal Pharmacopoeia, Nigerian Herbal Pharmacopoeia) and other African medicinal plants.

Recommended texts

1. Badal, S and Delgoda, R (ed) (2016) Pharmacognosy: Fundamentals, Applications and Strategy. Elsevier publisher
2. Wondafrosh M. (2008). A Preliminary Guide to Plant Collection, Identification, and Herbarium techniques.
3. Singh HB and Subramaniam B (2008). Field manual on Herbarium Techniques. Vedam Book International
4. Steven E. Ruzin, (1999), Plant Microtechnique and Microscopy ISBN 0-19-508956-1.
5. Journal of Microscopy

5.7 PMR 716 MEDICINAL PLANT TAXONOMY 2 COMPULSORY

Course description

The course will expose students to medicinal plant taxonomy, both classical and chemotaxonomy

Course purpose

Students will be able to appreciate the classification of medicinal plants and its importance to biological activity.

Course topics

- Classical Taxonomy:
- Classification of plants (Origin, history etc)
- Principles of classification;
- Systems of Taxonomy (Natural and Artificial);
- Taxonomic Hierarchy; Subspecific Taxonomy;
- Flower as a reproductive unit in Angiosperms,
- Conserved plant names.
- Use of flora keys for plant identification.
- Chemotaxonomy:
- Contribution of secondary metabolites and DNA as chemotaxonomic

Markers:

- Computerization in taxonomy

Recommended text

1. Stace C.A (2008). Plant taxonomy and Biosystematics. Edward Arnold publishers, UK
2. Sivaraman V.V and Robson NPK (1991). Introduction to the principles of plant Taxonomy. Cambridge University press, UK
3. Besse, P (ed) (2014). Molecular plant Taxonomy. Springer Science NY
4. Sharma, O.P (2011). Plant Taxonomy 2E. Tata McGraw-Hill Education
5. European journal of Taxonomy
6. Journal of Taxonomy and Biodiversity Research
7. Journal of plant systematics and evolution

5.8 PMR 717 ADVANCED LABORATORY TECHNIQUES (I) 2 REQUIRED

Course description

This course gives students experience of all required techniques in medicinal plant research in the laboratory. It will be raw material focused

Course purpose

The purpose is to develop research skills and competencies in the students.

Course topics

- Practical work designed to illustrate the principle underlying methods discussed in theory to improve the candidate's practical ability and presentation of reports (Include all courses contributing to this course)

Recommended texts

1. Harborne JB (1984) Phytochemical Methods 2nd edn, Chapman and Hall, London
2. Bernard Fried and Joseph Sherma Thin-Layer Chromatography: Techniques and Applications, Second Edition, Revised and Expanded, CRC Press, London
3. Wagner H and Bladt S (1996) Plant Drug Analysis, A Thin Layer Chromatography Atlas, Springer-Verlag, Berlin

5.9 PMR 718 ETHNOBOTANY AND TOXICOLOGY 2 E

Course description

The course will examine indigenous knowledge of medicinal and poisonous plants in Africa

Course purpose

To acquire knowledge of traditional medical practices in various communities in Africa with particular reference to herbal therapy and identify medicinal and toxic plants

Course topics

- Collection and documentation of herbal recipes from practitioners
- Classification of medicinal plants and herbal recipes
- Identification of poisonous plants
- Herbal treatment of poisoning
- Identification of psychoactive, molluscicides, insecticides plants
- Basic principles of assessing toxicity

Recommended texts

1. Neuwuger, HD (1996). African Ethnobotany, Poisons and Drugs: Chemistry, Pharmacology, Toxicity. Chapman and Hall GMBH
2. Kurt, TL (2004). A textbook of Modern Toxicology. Wiley-Inter Science, NJ, USA.
3. Jones, CJ (2000). Toxicology and Clinical Pharmacology of herbal Products. Humana Press, NJ, USA.
4. Balick, MJ and Cox, PA (1996). Plant, People and Culture: The Science of Ethnobotany. Scientific American Library, NY, USA
5. Journal of Medicinal Plants
6. Ethnobotanical leaflets
7. Journal of Ethnopharmacology

5.10 PMR 721 SPECTROSCOPY OF BIOLOGICALLY ACTIVE PRODUCTS 4 COMPULSORY

Course description

The course will focus on the different methods for identifying chemical constituents in medicinal plant.

Course purpose

The purpose is to identify active ingredients in medicinal plants using spectroscopic techniques.

To quantify and standardize herbal preparation.

Course topics

- Spectroscopic techniques (IR, UV, NMR, MS etc.) in structural elucidation and assessment of natural product purity and quality.

Recommended texts

1. Sarker SD, Latif Z and Gray AI (eds) (2006) Natural Products Isolation, 2nd edn. Humana Press, Totowa, .
2. Heinrich M, Barnes J, Gibbons S and Williamson EM (2004) Fundamental of Pharmacognosy and phytotherapy, Churchill Livingstone, Edinburgh
3. Badal, S and Delgoda, R (ed.) Pharmacognosy: Fundamentals, Applications and Strategy. Elsevier;
4. A.J. Baker & T. Cairns Spectroscopic Techniques in Organic Chemistry
5. Journal of spectroscopy

5.11 PMR 722 SEMINAR 2 COMPULSORY

Course description

The course is a weekly seminar which all candidates must attend and participate in. It involves presentation on both reviewed articles and original research topics.

Course purpose

The course is to acquaint students with current topics in medicinal plant research and drug development as well as expose them to relevant researches in the field

Course topics

- Designed to acquaint the candidate with current and relevant research topics in medicinal plant research and drug development.

Recommended text

1. Badal, S and Delgoda, R (ed.) Pharmacognosy: Fundamentals, Applications and Strategy. Elsevier;

2. Evans WC. Trease and Evans' Pharmacognosy 15th edition, WB Saunders
3. Journal of ethnopharmacology
4. Journal of Medicinal Plant Research
5. Biologics: Target and Therapy

5.12 PMR 723 STANDARDIZATION AND QUALITY ASSURANCE OF HERBAL PRODUCTS 4 COMPULSORY

Description

This course will address standardization and quality assurance of herbal products

Course purpose

This course is aimed at introducing students to the importance of incorporating standards and quality into herbal products.

Course topics

- Commercial requirements and general methods of evaluation of vegetable, microbial and animal drugs.
- Information and standards with respect to identity, safety, purity, potency, etc of herbal products.
- Pharmacopoeical standards and specifications (Organoleptic, microscopical, physico-chemical and biological methods of evaluation, determinations and relevance of ash, extractive values etc. Moisture content,).
- Monograph compilation
- Prospects and problems of standardization of herbal remedies.

Recommended texts

1. Lui, WJH (2010). Traditional Herbal Medicine Research Methods: Identification, Analysis, Bioassay, Pharmaceutical and Clinical Studies. John Wiley and Sons.
2. Evans WC. Trease and Evans' Pharmacognosy 15th edition, WB Saunders,
3. WHO Guideline for Standardization of Herbal Drugs. (who.int/medicinedoc/documents/14878e/pdf)
4. Heinrich, M (2004). Fundamentals of Pharmacognosy and Phytotherapy. Elsevier
5. The Pharma Innovation Journal International
6. Journal of Biodiversity and Conservation

5.13 PMR 724 CLINICAL PHARMACOGNOSY AND NUTRITIONAL THERAPY 2 REQUIRED

Course description

The course will expose students to training in diagnosis and herbal treatment procedures

Course purpose

To teach students herbal practice under various conditions in traditional clinics.

Course topics

- Introduction to Scope and Role of clinical pharmacognosy
- Challenges of clinical pharmacognosy
- Diagnosis, prevention and herbal treatment strategies.
- Case taking, clinical practice and examinations
- Drug and herb/food interactions.
- Patient Referral Systems, immunization,
- Toxicity, side effects, contraindications, and precautions.
- Practice limitations.
- Food classification and eating habits, balanced diets, minerals, vitamins, fruits and vegetables
- Various cultural misconception bordering on nutrition and scientific basis of some cultural practices
- The use of nutritional supplements and nutraceuticals
- Nutritional assessment and the links between diet and health
- Preventive healthcare; consideration of preventive strategies including personal hygiene and cleanliness, environmental sanitation, maintaining good nutrition, good life style and healthy social behaviour

Recommended texts

1. Ahamad M., Mehjaben A., Jahan N., and Sahed F (2016). Text book of Clinical Pharmacognosy. <http://www.pjpps.com>
2. Burton BT and Foster WR (1998). Human Nutrition: A Textbook of Human Nutrition in Health and Disease. Mcgraw-Hill
3. Bagetta C., Cosentino M., Corasaniti MT., Sakurada S (2011). Clinical Pharmacognosy: Herbal Medicine Developmant and Validation of Plant-Derived Medicines for Human Health. CRC Press.

5.14 PMR 725 ADVANCE LABORATORY TECHNIQUE (II) 2 REQUIRED

Course description

This course gives students hand-on experience of all required techniques in medicinal plant research in the laboratory. It will be focused on drug development

Course purpose

The purpose is to develop research skills and competencies in the students.

Course topics

- Practical work designed to illustrate the principle underlying methods discussed in theory to improve the candidate's practical ability and presentation of reports (include courses contributing to this course)

Recommended texts

1. Harborne JB (1984) Phytochemical Methods 2nd edn, Chapman and Hall, London
2. Bernard Fried and Joseph Sherma Thin-Layer Chromatography: Techniques and Applications, Second Edition, Revised and Expanded, CRC Press, London
3. Wagner H and Bladt S (1996) Plant Drug Analysis, A Thin Layer Chromatography Atlas, Springer-Verlag, Berlin

5.15 PMR 726 MEDICINAL PLANT AND OTHER RAW MATERIALS 3 ELECTIVE

Course description

This course will examine medicinal plants and other natural products as sources of raw material for drug production.

Course purpose

The aim of the course is to expose students to the potential of plants and other natural products as sources of raw materials as well as develop in them the possibility of tapping into the economic prospects of these raw materials.

Course topics

- Natural products as sources of drug and raw materials.
- Factors involved in the production of drugs from natural sources.
- Exploitation of Traditional medicine for raw materials.
- Problems and prospects of sourcing raw materials from local medicinal plant, animal and mineral substances for the pharmaceutical industry.
- Commercial requirements. Field Trips.

Recommended text

1. Evans WC. Trease and Evans' Pharmacognosy 15th edition, WB Saunders,
2. Herbal Pharmacopoeia
3. Botanical Drug Development: Guidance for Industry (2016). U.S. Department of Health and Human Services Food and Drug Administration Center for Drug Evaluation and Research (CDER)

5.16 PMR 727 PLANT DRUGS FOR DISEASE MANAGEMENT 3 ELECTIVE

Course description

The course will focus on herbal drug on management options on common diseases.

Course purpose

The aim of the course is to equip students with knowledge that will help address common tropical ailments using the traditional herbal approach.

Course topics

- Herbal therapy: anticancer; antimalarials, laxatives (including the role of vegetables and fruits), anti-infectives (e.g. against measles, bacterial, fungal, etc), anti-tussives, anti-diarrhea, antispasmodics, anti-haemorrhoid, analgesics, antihelminthics, antischistosomiasis, anticonvulsants, antipyretics, anti-inflammatory, antihypertensives, antisickling etc.
- Examples of plant drugs in current use in the existing conventional Pharmacopoeia (e.g. ergometrine, atropine, quinine, etc.).

Recommended text

1. Burkill HM The Useful Plants of West Tropical Africa , Volumes 1-6, Royal Botanic Gardens, Kew
2. Evans WC. Trease and Evans' Pharmacognosy 15th edition, WB Saunders,
3. Herbal pharmacopoeia
4. Heinrich M, Barnes J, Gibbons S and Williamson EM (2004) Fundamental of Pharmacognosy and phytotherapy, Churchill Livingstone, Edinburgh
5. Encyclopedia of medicinal plants I and II

5.17 PMR 728 PROPAGATION AND CULTIVATION OF MEDICINAL PLANTS 2 ELECTIVE

Course description

Cultivation of medicinal plants for herbal practice and commercial purposes.

Course purpose

Students will be equipped with the knowledge of cultivating medicinal plants for sustainable development.

Course topics

- Cultivation and plant propagation
- Tissue culture techniques and Genetics
- Possibility and prospects of medicinal plant production in Africa
- Methods of cultivation and propagation
- Good agricultural practice for medicinal plant
- Threats to propagation and environmental factors affecting growth (e.g. soil, climate, genetics) for high quality crude drugs
- Post-harvest preparation of crude drugs e.g. harvesting, collection, significance of time of collection of drugs with regard to quality of crude drugs; drying, garbling, packaging, immediate and long term treatments with preservatives for proper storage, extraction
- Medicinal plant garden and herbarium

Recommended texts

1. Evans WC. Trease and Evans' Pharmacognosy 15th edition, WB Saunders,
2. Chandra, S, Lata, H. and Varma A. (2013). Biotechnology for medicinal plants. Springer.

3. WHO (1993). Guidelines on the Conservation of Medicinal Plants. www.who.int/medocinedocs/7150e/s
4. WHO (2003). Guidelines on Good Agricultural and Collection Practices (GACP) for medicinal plants.
5. Journal of Applied Research on Medicinal and Aromatic plants
6. International Journal of Medicinal Plants

5.18 PMR 731 PROJECT 6 COMPULSORY

Course description

- This is the candidate's research project as decided by him/her along with the supervisor, a proposal of which would have been presented to and approved by the department.

Course purpose

- To give the candidate an experiential opportunity of proper medicinal plant research, reporting and publishing.

5.19 PMR 732 INTERNSHIP 3 COMPULSORY

Course description

To have experience in the practise of medicinal plant research and herbal medicine.

Course purpose

To build confidence in graduates in employing scientific methods in investigation of medicinal plants and their potential economic uses.

**6.0 M.SC. CURRICULUM SPORTS DEVELOPMENT AND
POLICY MANAGEMENT**

**6.1 MASTERS IN SPORTS MANAGEMENT AND POLICY
DEVELOPMENT**



Course Syllabus for Full Time Students

1st Semester

COURSE TITLE	Compulsory/Elective	Hours of Lecture	Hours of Practical	Total Hour	Units
COMPULSORY COURSES					
PSD 701 Strategic Management in Sport	C	30		30	2
PSD 706 Sport Facilities and Event Management (Practicum)	C	15	30	45	3
PSD 711 Monitoring and Evaluation for Sport and Development	C	30		30	2
PSD 708 International Security and Sport Development(Practicum)	C	15	30	45	3
REQUIRED COURSES					
PSD 702 Sport and Technology	R	30		30	2
PSD 703 Financial Management in Sport	R	30		30	2
PSD 704 Sport Marketing and Commercializing	R	30		30	2
PSD 707 Legal Issues in Sport	R	30		30	2
PSD 719 Talent Identification and Development	R	30		30	2
ELECTIVE COURSES					
PSD 712 Sport and Economics	E	30		30	2
2nd Semester					
COMPULSORY COURSES					
PSD 713 Research Methodology	C	30		30	2
PSD 716 Statistical application in sport	C	30		30	2
PSD 705 Sport Marketing Survey (Practicum)	C	15	30	45	3
PSD 720 Sports Talent Identification (Practicum)	C	15	30	45	3
REQUIRED COURSES					
PSD 717 Sport development policy	R	30		30	2
PSD 709 Sport for Peace and Conflict Resolution	R	30		30	2
PSD 714 Sociology of Sport and Development	R	30		30	2
PSD 715 Sport and African Society	R	30		30	2
PSD 721 Health promotion through Physical Activity and Recreation	R	30		30	2
ELECTIVE COURSES					
PSD 718 Development theory and practice	E	30		30	2
3rd SEMESTER					
COMPULSORY COURSES					
PSD 710 Internship	C	15	45	60	3
4th SEMESTER					
COMPULSORY COURSES					
PSD 722 Project Work	C	15	75	90	6

Msc Sports Management and Policy Development

PSD 701	Strategic Management in Sport	2	C
PSD 702	Sport and Technology	2	R
PSD 703	Financial Management in Sport	2	R
PSD 704	Sport Marketing and a Commercializing	2	R
PSD 705	Sport Marketing Survey (Practicum)	3	C
PSD 706	Sport Facilities and Event Management (Practicum)	3	C
PSD 707	Legal Issues in Sport	2	R
PSD 708	International Security and Sport Development(Practicum)	3	C
PSD 709	Sport for Peace and Conflict Resolution	2	R
PSD 710	Internship	3	C
PSD 711	Monitoring and Evaluation for Sport & Development	2	C
PSD 712	Sport and Economics	2	E
PSD 713	Research Methodology	2	C
PSD 714	Sociology of Sport and Development	2	R
PSD 715	Sport and African Society	2	R
PSD 716	Statistical Application in Sport	2	C
PSD 717	Sport Development Policy	2	R
PSD 718	Development Theory and Practice	2	E
PSD 719	Talent Identification and Development	2	R
PSD 720	Talent Identification and (Practicum)	3	C
PSD 721	Health Promotion through Physical Activity Recreation	2	R
PSD 722	Project Work	6	C

6.2 PSD 701: STRATEGIC MANAGEMENT IN SPORT 2 COMPULSORY

Course description

This unit will focus general principles of governance and will specifically

relate it to sport. It will also examine the different policies of sport governing bodies like the IOC, FIFA, FINA, IAAF etc. It will examine how the policies have affected grassroots and elite sport development in different parts of Africa.

Course purpose

This course will focus on general principles of strategic management in sport including but not limited to governance, organizational relations, conflict management, human resource management and will specifically relate these to sport. It will also examine the AU policy on sustainable development as well as different policies of other continents and sport governing bodies like the IOC, FIFA, FINA, IAAF etc. It will examine how the policies have affected grassroots and elite sport development in different parts of Africa.

Tentative course topics

Strategy in Sport

- Preparing for the strategic Planning process
- Environmental Analysis (PESTEL, TOWS Matrix)
- Vision Mission and Values
- Action Plan

Human resource management

- Organizing HRM
- Human resource management strategy
- Recruitment, selection, placement
- Performance Assessment and Management
- Human Capital Development

Governance of Organizations

- Theories of Governance (democratic theory, economic theory, public management theory, international relations theory, public-private partnerships, state theory)
- Change management
- Governance toolbox (governance of sports organizations, issues of power, Stakeholder analysis (power / interest matrix), policies, regulations, constitutions,

Recommended texts

George Foster, Stephen A. Greyser, Bill Walsh (2006) The Business of

Sports: Text and Cases on Strategy and Management: Thomson/South-Western, Mason.

Daniel Covell and Sharienne Walker (2013) Managing Sport Organizations; Responsibility for Performance; eBook ISBN: 9780203550281; 3rd edition. Routledge

Trevor Slack, Milena Parent (2006) Understanding Sport Organizations The Application of Organization Theory: 2nd Edition; Human Kinetics.

Paul Pederson, Pamela C. Laucella, Edward (Ted) M. Kian and Andrea N. Geurin (2017) Strategic Sports Communication 2nd Edition. Human Kinetics; Champaign IL.

6.3 PSD: 702 SPORT AND TECHNOLOGY 2 REQUIRED

Course description

This unit will examine the historical development of sport in the society. This unit will examine the role that technology plays in the development of sport. Highlight the societal perception of sport in relation to cultures technology. Study the behaviour of individuals and groups in the society within the sport milieu. How participation in sport has brought about development within the continent of Africa and other parts of the world.

Course purpose

The course examine how sport can harness the opportunities that are presented by the advents of technologies, current and future innovations that add value to sustainable development and advancement of sport. It will also examine the dynamic nature of technology and its commercial value to sport.

Tentative course topics

Trends in sport and technology

- Event management
- Equipment
- Performance enhancement
- Communications
- Management

Application of technology in sport

- Case studies of selected international sports federations (e.g FIFA)

Recommended text

Stewart, Ross (2010) Sport Technology: New Technology. Evans Brothers.

6.4 PSD: 703 FINANCIAL MANAGEMENT IN SPORT 2 REQUIRED

Course description

This course explores the principles of general financing management to sport -specific financial issues. It takes holistic financial accounting to the organization and the management of sport as a business.

Course purpose

This unit must give an in-depth understanding of financial management and its role in sports management. It must assist students understanding of basic financial concepts and principles and how they relate to sport as a business. Students must be able to apply the financial management principles, organizational risk management and sports financial intelligence

Tentative course content

Introduction to Financial Management

- Definitions of financial management
- Functions of financial management
- Financial Management Systems
- Financial literacy

Long Term Financial Planning

- Growth as a financial management goal
- Financial planning models (budgeting, control, reporting, accounting and financial risk management)
- Long term financing decisions (investments, forecasting in terms of financial planning, etc)

Leverage and capital structure in sport

- Capital structure theories
- Long term financing decisions
- Determination of optimal capital structure
- Financing alternatives
- Case on Financial Management of a Sports Organization

Recommended texts

Prasanna Chandra (2011) Financial Management: Theory & Practice. 8th Edition.McGrawHill.

Uma Kapila (2017) Indian Economy: Performance and Policies. 17th Edition.Academic Foundation.

Dominick Salvatore (2014) International Economics Trade And Finance. 11th Edition Wiley Student Edition.

6.5 PSD: 704SPORT MARKETING AND COMMERCIALIZATION 2 REQUIRED

Course description

Sport Marketing and Commercialization focuses on how to expose students to create powerful media and marketing platform . The course also discusses marketing rights and communication.

Course purpose

This course must address, trends, determinants and the value of sport commerce. Students must understand the essential elements of sports marketing and commercialization strategies and how they apply in the management of sport

Course aim

1. Students are expected to understand the dynamics of sport commerce
2. They course will expose them to different marketing strategies in Sport
3. Students will come up with mini projects relating to individual branding of sport ideas

Tentative course topics

Introduction to marketing

- Principles of marketing (segmentation, targeting and differentiation)
- Marketing offerings (what are we marketing in sport) , marketing mix the 7Ps (player transfers)

Marketing Strategy in Sport

- Elements of marketing strategy
- Marketing plan
- Marketing communication
- Marketing tools

Commercialization in Sport

- Trends
- Determinants
- Commercialization strategies
- Case study on marketing and commercialization
- African Sports Market

Recommended Texts

Aaron C.T, Smith & Bob Stewart- 2nd Edition: Introduction to Sports Marketing. ISBN 13:978-1138022966.

Lynn Kahle, Chris Rilev (2004) Sports Marketing and Psychology of Sport Communication.

Course Description

6.6 PSD: 705 SPORT MARKETING SURVEY (PRACTICUM) 3 COMPULSORY

Course Purpose

Students must be able develop sports marketing and commercialization strategies. The students will examine different sport marketing outfits in the academic environment and compare it with what is in operation in their different home countries.

Tentative course topics

- Students shall be expected to develop a project a comprehensive report / business proposal on sport entrepreneurship (e.g how to establish a sports club/ organization)

Recommended text

Marketing Survey Research www.duker.com

6.7 PSD 706 SPORTS FACILITIES AND EVENT MANAGEMENT 3 COMPULSORY

Course description

It focuses on the major components of both facilities and event management. This will include planning, financing, marketing, implementation and evaluation in sports. The course will also examine sports events management agencies across Africa and beyond.

Course purpose

1. This unit will identify the objectives and strategies used in sport event management and planning.
2. It will offer the students the opportunity to develop their skills in sport event management and planning.
3. It will also assist the students to develop evaluations skills in programme delivery.

Tentative course topics

Definition of Concepts

Event Management,

Sports and recreation Management,

Sports Event Management

Types of Sport Event Management

Theories and Models of Sport/Event Management

Facility Construction

To include practical aspect

Recommended Texts

Thomas J. Aicher, Amanda L. Paule-Koba and Brianna L. Newland (2015) Sport Facility and Event Management: USA; Jones and Bartlett Publishers.

Supovitz, Frank (2014) The Sports Event Management and Marketing Playbook, 2nd Edition; USA: Wiley Publishers.

6.8 PSD 707 LEGAL ISSUES IN SPORT 3 REQUIRED

Course description

This course examines sport contract laws, arbitration and other issues relating to sport governance, and practice. Its focus will be application of the rule of law as its affect African sport clubs and other sport organisations in both private and public setting.

Course purpose

This unit will expose students to the concepts of sport contract law, arbitration and legal entities in sport. The unit will also examine the framework of the working of Court of Arbitration in Sport (CAS).

Tentative course topics

Risk management

Athletes Contract management
Employment law
Event management legal issues
Facilities management legal issues
Participation rights
Liability for sport injury
Tort defense
Unintentional tort
Intention tort

Recommended texts

John J. Miller and Kristi Schoepfer (2018) Legal Aspects of Sport. 2nd Edition:
USA: Jones and Bartlett Publishers.
Hillary A, Findlay A, Corbett (2008) Legal Issues in Sport: Tools and
Techniques for Sport Management

6.9 PSD 708 CHANGE TO SPORT SAFETY AND SECURITY (PRACTICUM) 3 COMPULSORY

This unit presents the opportunity for students to articulate the importance of security in sport involvement. This unit will also examine the threat of terrorism to sport and various security policies put in place by international and national sport governing bodies to ensure that development of sport is not hindered in Africa. Include how fire, mechanical and infrastructure affect the safety of spectators and other users

Course description

This unit presents the opportunity for students to articulate the importance of security in sport involvement. This unit will also examine the threat of terrorism to sport and various security policies put in place by international and national sport governing bodies to ensure that development of sport is not hindered in Africa.

Course purpose

Examine the nature of rivalries among nations, races, communities, teams, ethnic groups, religious groups and geographical areas that are behind sports competitions.

1. Familiarizing students on challenges and stakes of international security lined to the development of sports and organization of activities.
2. Security of athletes, spectators, dignitaries, property etc

3. Identify means of safety and security to be used to face insecurity in sport relating to: accreditation, ticketing, crowd control, facilities capacity etc

Tentative course topics

1. Geopolitics of sport
2. Terrorisms and sport.
3. Hooliganism in sport.
4. Security and safety measures in sport.
5. Incident management
6. Terrorism Indicators
7. Risk assessment for sport and event venues
8. Leadership and multi-security agency collaboration

Recommended Text

Peoples C and Vaughan-Williams N (2014) Critical Security Studies : An introduction (2nd edition). London ; New York: Routledge.
Hall Stacey , A., Waiter E, Cooper., Lou Marciani and James McGee (2012) Security Management for Sports and Special Events: An Interagency Approach to Creating Safe Facilities. Human Kinetics.

6.10 PSD 709 SPORT FOR PEACE AND CONFLICT RESOLUTION 2 REQUIRED

This unit will examine different conflict prevention and resolution theories and how sport can be used as a peace model for conflict resolution. A case study of Liberia, Cote d'Ivoire, Kosovo, Palestine, Israel, Congo etc can be used as working model.

Course description

This unit will examine different conflict theories and how sport can be used as a peace model for conflict resolution. A case study of Liberia, Cote d'Ivoire, Kosovo, Palestinian and Israel can be used as working model.

Course purpose

Examine the role of sport in the promotion of peace.

1. Identify the different understanding of peace in relationship with sport.
2. Analyze sports values in relationship with peace
3. Exemplify sports activities as factors of promoting peace.

Tentative course topics

1. Definition of peace: negative and positive peace.

2. Means of obtaining peace: prevention and management.
3. Sports values: equity, justice, tolerance, and respect of opponents.
4. Sport value and peace: in preventions & in management
5. Case studies: George Waeh, Didier Drogba

Recommended texts

Danielle Beswick and Paul Jackson (2014) Conflict, Security and Development: An Introduction :Routledge Publishers.

Hall Stacey , A., Waiter E, Cooper., Lou Marciani and James McGee (2012) Security Management for Sports and Special Events: An Interagency Approach to Creating Safe Facilities. Human Kinetics.

6.11 PSD 710 INTERNSHIP 3 COMPULSORY

This unit will give the students opportunity for field experience in some sport organization for minimum of four months. The field experience will be presented in form of a seminar report. Sports Federations, National Olympic Committee/Commissions, Sports Confederation, Sports NGOs, Sports Councils, University Sports Councils, African Games, International Sports Events, Sports Goods Manufacturing Companies, Sports marketing Companies

Course description

This unit will focus on giving students an opportunity for field experience in some sport organization for three (3) months. The field experience will be presented in form of a seminar.

Course purpose

The purpose of the internship is to help each student grow professionally through practical experience as well as help them grow their capabilities. Each fieldwork opportunity shall be unique to each student with specific objectives to be fulfilled at the end of the programme. The internship shall be compulsory and shall run for a period of eight to twelve (8-12) weeks.

Course objectives

1. To accord each student an opportunity for practical fieldwork experience in sports development and management;
2. To allow each student to understand and appreciate the professional duties and responsibilities of personnel in the field;
3. To enable each student asses his/her strengths and weaknesses;

4. To enable students and work placements exchange new and updated ideas on sports programming and service delivery

Assessment

(Subject to amendments as Instructor deems necessary)

Students must complete specific academic requirements and preliminary field experiences prior to the internship; secure a placement organisation/agency and attend fieldwork preparatory sessions. Each student shall be assigned a supervisor during his/her internship that will undertake at least three (3) site visits. Students shall be assessed on the fulfillment of the position responsibilities and potential future professional prospects. The student shall be expected to submit three (3) fieldwork reports as follows:

1. Description of Agency and role of the internship. This shall include a detailed agency description, location, organo-gram, responsibilities of the intern, specific objectives and expected outcome (1- 2 Weeks);
2. Progression of the internship, achievements and challenges shall be written weekly in a logbook.
3. Project conclusion to include: achievements, challenges, lessons learnt and recommendations (4-8 Weeks); and
4. Detailed report of Internship Programme shall be written at the end of the program.

Recommended texts

Susan B. Foster and John E. Dollar (2010) *Experiential Learning in Sport Management: Internships and Beyond*: FIT Publishers.

Robin , Jr. Ammon , Matthew Walker , Edward E. Seagle , and Ralph W. Smith (2010)

Internships in Sport Management Spiral-bound: Amazon.com

6.12 PSD 711 MONITORING AND EVALUATION OF SPORT DEVELOPMENT 2 REQUIRED

This unit will focus on developing sports leaders that will have capabilities to assess the impact of sports planning, programmes and programming. Using appropriate monitoring and evaluation tools ~~in management~~.

Course description: 2 Required

This unit will focus on developing sports leaders that will have capabilities to assess the impact of sports programmes. Using monitoring and evaluation tools in management.

Course purpose

This course is designed to help students identify and develop strategies to eliminate the major factors accounting for error in measurement across the various learning domains. The course will emphasize the processes necessary for the development of assessments and practical means for establishing the three critical elements of any measurement (validity, reliability, and objectivity). In addition, this course is designed to prepare future sport administrators to become knowledgeable and experienced in assessment, administration of measures, and evaluation within sport development and policy management.

Course objectives

1. Gaining factual knowledge of terminology, classifications, methods and trends associate with monitoring and evaluation in sport development and policy management.
2. Developing attitudes, skills and competencies for monitoring the impacts of sports programmes in Africa.
3. To familiarize students with important conceptual and practical links between monitoring, evaluation, and programme development implementation policy in sport.

Tentative course topics

(Subject to amendments as Instructor deems necessary)

1. Introduction and Basic terminology in monitoring and Evaluation.
2. Purpose of monitoring and Evaluation.
3. Types of monitoring and evaluation approaches.

Recommended texts

Morrow, J.R, Jackson, A.W, Disch, J.G. & Mood, D.P. (2011).
Measurement and Evaluation in Human Performance, 4th Ed. Champaign,
IL: Human Kinetics.

Lacy, A.C. (2015). Measurement and Evaluation in Physical Education &
Exercise Science.(7th Edition). Indianapolis, IN: Person Publishing.

6.13 PSD 712 SPORTANDECONOMICS 2 COMPULSORY

This course addresses the impact of both micro, meso and macro-economic variables to sport in Africa. Students must analyse economic trends, demand and supply trends and economic scarcity in relationship to sport and its sustenance.

Description

This course addresses the impact of both micro, meso and macro-economic variables to sport in Africa. Students must analyze economic trends, demand and supply trends and economic scarcity in relationship to sport and its sustenance.

Course purpose

This course is aimed at introducing students to essential sports economic concepts grounded in African examples. It will familiarize students in the significance of sports economics and the relationship between sports and economic development.

Objective

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

1. Explain various aspects of the economics of sports
2. Develop and apply basic market structure models to sports industry (industrial organization in sports)

Tentative course topics

1. Theory of the firm
2. Definition of value
3. Theories of economics
 - Friction theory,
 - Monopoly theory,
 - Innovation theory
4. Sports business in society
 - Why sports organizations exist
 - Social responsibility of sports business
 - Taxation
 - Trade barriers
 - Demand and supply models
 - Economic growth and development
5. Foundations of sports economics
6. Globalizing sports economy
7. Sports labor market
8. Sports entrepreneurship.
9. The economic determinates and impact of sports activities.
10. Labor markets and professional sports (demand and supply)
11. The public finance aspects of professional sports and financing sports events.

12. Evidence based benefits on social –economic contributions of sport on Africa

Recommended texts

Michael Leeds (2008) **The economics of sports**; Peter Von Allmen Boston : Pearson/Addison Wesley

Rodney D Fort (2005) economics; Upper Saddle River, N.J. : Pearson Prentice Hall 2006.

Stefan Késenne (2007) treatment Cheltenham, UK ; Northampton, MA : Edward Elgar

6.14 PSD 713 RESEARCH METHODOLOGY 2 COMPULSORY

This unit will examine research methodological designs. Both qualitative and quantitative approaches will be emphasized. It will also involve the formulation of research question and hypothesis, sample and sampling techniques as well as data collection procedures. Ethical standard procedures in research will also be emphasized.

Course description: 2 C

This unit will examine research methodological designs. Both qualitative and quantitative approaches will be emphasized. It will also involve the formulation of research question and hypothesis, review of literature, sample and sampling techniques as well as data collection procedures. Ethical standard procedures in research will also be emphasized.

Course purpose

The purpose of this course is to explore, and discuss emergent research in sport development and policy management. The course is intended to prepare the student to be a critical consumer of new information and emerging trends in sport development and policy management. It also provides students with an overview of wide range of research topics including research process and development, presentation and possible publication of their research dissertation, as well as to understand and use research techniques in later career pursuits.

Course objectives

1. The students should able to identify and discuss lines of inquiry in sport development and develop research ideas.
2. Present on a research topic of interest, develop a focused and clear statement of a research problem and a manageable plan for addressing the problem.

3. Articulate and apply theories and concepts relevant to sport management and related field.
4. Be able to apply appropriate research design, identify and develop a measurement tool such as questionnaire and other observational techniques.
5. Students should be able to apply appropriate data analysis approach to interpret data collected.

Tentative course topics

(Subject to amendments as Instructor deems necessary)

1. Course outline Discussion and Introduction – Instructions for the Research Proposal
2. Nature & Purpose of Research
3. Database Demonstration in Library
4. Understanding the Research Process and Developing the Research Plan
5. Research topic and Problem Statement
6. Research Question and Hypothesis
7. Reviewing the Literature and Ethical Concerns in Research
8. Selection of Research Participants-Sampling Procedures
9. Descriptive and Experimental Research Designs
10. Qualitative and Quantitative Research
11. Descriptive and Inferential Data Analysis
12. APA Format, Reading and Evaluation

Recommended texts

Rudestam, K. E., & Newton R. R. (2007). *Surviving your dissertation: A comprehensive guide to content and process* (3rd ed.). Thousand Oaks, CA: Sage.

Baumgartner, T.A. & Hensley, L.D. (2006) *Conducting & Reading Research in Kinesiology* (5th edition). New York: McGraw-Hill.

American Psychological Association. (2010). *Publication Manual* (6th ed.), Washington, DC: American Psychological Association.

6.15 PSD 714 SOCIOLOGY OF SPORT DEVELOPMENT 2 COMPULSORY

This unit presents an opportunity for students to understand the role of sport as it influences people, groups, institutions, human activities and social order within the society. This unit is also concerned about institutions in the society such as religion, family, government and judiciary. Their roles in the development of sport across Africa and the rest of the world. The unit will

examine the goals of sociology of sport in the overall development of the society.

Course description

This unit presents opportunity for students to understand the role of sport as it influences people, groups, institutions, human activities and social order within the society. This unit is also concerned about institutions in the society such as religion, family, government and judiciary. Their roles in the development of sport across Africa and the rest of the world. The unit will examine the goals of sociology of sport in the overall development of the society.

Course purpose

Sport is a prominent and a highly visible force in society, it is important to describe the position, it holds in society and determine its socializing effects and influence. Therefore, this course is designed to familiarize students with critical examination of sociological concepts and theories relating to sports in Africa.

Course objectives

After completing this course, students should be able to:

1. Critically examine social issues concerning the management, participation and consumption of sport in various African societies.
2. Help students' link research, theory and practice in sport context.
3. Better appreciate and understand the potential benefits for diversity and inclusion in sport.

Tentative course topics

(Subject to amendments as Instructor deems necessary)

1. Introduction to Sociological Perspectives of Sport.
2. Socialization, culture and sport.
3. Geopolitics of Sports.
4. Role modeling
5. Youth Sport in Africa
6. Sports competitions
7. Gender sexuality and Sport.
8. Race and ethnicity in sport.
9. Socioeconomic issues, social class and sport participation.
10. Religion and sports
11. Media and sport.
12. Violence in sports

Recommended texts

Kevin Young, Chiaki Okada (2014) Sport, Social Development and Peace
Volume 8: ISBN: 978-1-78350-885-3

Smith Earl (2010) Sociology of Sport and Social Theory eBook

ISBN-13: 9780736085564; Human Kinetics

Coakley Sport in Society?

6.16 PSD 715 HISTORICAL FOUNDATIONS OF SPORTS ETHICS AND PHILOSOPHY IN AFRICA 2 REQUIRED

Course description

This course will examine sport and the African society focusing on both the historical and contemporary formations of sport. The unit will equip the students with foundational knowledge of sport including the historical development of African sport through the examination of ideology, ethics, commercialization of African sport, institution of sport in Africa, colonialization and globalization.

Course purpose

This unit will focus on the historical development of sport in different culture worldwide, examine the pattern of sport involvement at all levels. Emphasis will also be on the ethics of sport as enshrined in the various rules and regulation governing different categories of sport. The science, moral and logic of sport participation will also be examined

On successful completion of the course, participants should be able to:

1. Demonstrate strong understanding of the historical development of African sports.
2. Develop analytical and critical thinking skills relating to the issues of sport and the African society
3. Demonstrate capacity and skills to effectively and critically debate on the interface between sport and African society using a range of communication media
4. Demonstrate ability to a solid and systematic critique on wider African social issues that interface with sport

Tentative course topics

Historical development of African

Evolution of sport Ethics and values in the African context

African sport and colonialization

African sport and globalization

Changing Institutions of sport in Africa
Localization of sport in Africa
Sports integrity

Recommended texts

Vamplew, W and Dyreson, M (2016) Sport History. Sage Publishers .London
Houlihan,B and Malcolm,D (2015) Sport and Society: A Student Introduction.3rd Edition Sage Publishers. London
Aaseng, Nathan(2011) Revolt of African-American Athletes. Revised. Sport and Society series. University of Illinious Press

6.17 PSD 716 STATISTICAL APPLICATION IN SPORT 2 COMPULSORY

Course description

This unit will be on the application of the various non-parametric and parametric statistical tools that can be used for the interpretation of data collected on trends in sport development and management policy. Statistical tool such as chi-square, spearman rank, student t-test, Pearson moment correlation coefficient, analysis of variance and other multivariate analytical tools will be examined.

Course purpose

1. To enable students to demonstrate competence in non-parametric statistical tools
2. To ensure that students have understanding of parametric statistical tools
3. To bridge the gaps between theory and practice of statistical tool especially in their application in research project tentative Course Topics.

Tentative course topics

Meaning of Statistics
Purpose of Statistics
Scales of Measurement and Type of data
Normal Distribution
Kurtosis and types of Kurtosis
Measure of Central tendency
Mean and Standard Deviation
Non-parametrics Statistics
Parametric statistics
And other tools including SPSS

Recommended texts

Jim Albert, Mark E. Glickman, Tim B. Swartz, Ruud H. Koning (2016) Handbook of Statistical Methods and Analyses in Sports. Chapman and Hall/CRC Press.

Jim Albert, Ruud H. Koning (2007). Statistical Thinking in Sports. Chapman and Hall/CRC Press.

6.18 PSD 717 SPORT POLICY DEVELOPMENT 2 COMPULSORY

Description

The focus of this unit will be on the examination of policies and practices used in the administration and management of sport. Contemporary social changes processes such as structuralism, people-oriented development among others will be examined. Importantly, African Union Policies as enshrined in agenda 2063 will be examined with the view to develop sport in the regions

Course purpose

1. To enable Students to appreciate and demonstrate competence in policy development process
2. To understand the link between governance and policy development in Africa nations
3. To be able to adapt and adopt African Union Policies in Sport development
4. Demonstrate analytical and critical engagement with policy issues and problems challenges
5. Demonstrate capacity and skills to effectively articulate policy recommendations using wide range of communication media

Tentative course topics

Sport policy in the AU context

Structures of Sport in Africa

Stages of policy development and implementation

Challenges of policy development and implementation

Recommended texts

Daniel Bloyce(2010) Sport Policy and Development: An Introduction: Routledge; New York.

Kelvin Hyson (2001) Sport Development: Policy, Process and Practice 3rd Edition: Psychology Press.

6.19 PSD 718 DEVELOPMENT AND MANAGEMENT THEORIES AND PRACTICE IN SPORT 2 COMPULSORY

Course description

This unit will focus on concepts, paradigm, theoretical models and ideologies of development in the micro, macro and international committees. There socio-economic and political perspectives as it influences different phenomena of sport development and policy management will be critically examined globally.

The paucity of qualified and effective sport managers at all levels of African sport is apparent. This course will introduce students to traditional and contemporary management theories. These theories will be explored as tool to examine issues within specific local and African context. Students will develop an understanding of theories are as tools to systematically examine and address problems challenges within the African sport industry.

Course purpose

1. Demonstrate a fundamental understanding of development and management theories
2. Critically evaluate the problems challenges through theoretical lenses
3. To Use theoretical approaches in practical situations
4. To use management theory and approaches to address non sport problems challenges

Tentative contents

Definitions and conceptualization of key terms

Key issues in management of African sport

Traditional Management theories

Contemporary Development and Management theories

Recommended texts

Willis Katie (2011) Theories and Practices of Development: Routledge Perspective on Development. London: Taylor and Francis Publishers.

Rapley, J (2007) Understanding Development: Theory and Practice in the Third World 3rd Edition. Boulder: USA: Lynne Rienner Publishers.

6.20 PSD 719 TALENT IDENTIFICATION AND DEVELOPMENT 2 COMPULSORY

Course description

The focus of this course will introduce the students to various models of talent identification, development, management and education. Students will appreciate the longitudinal approach to talent identification, development, management, education and supporting in young sport participants to elite sport.

Course purpose

1. To demonstrate strong understanding of the talent identification, development, management and Education process
2. Demonstrate ability to critique various talent identification and development models
3. Demonstrate capacity and skills to effectively articulate the talent identification process using widerange of communication media
4. Demonstrate appreciation of applying talent identification models in engaging with issues beyond sport

Tentative course topics

Concepts in Talent identification

Management of talent education

Education and talent identification and development

Constraints and challenge of talent performance sport

Regulation of sports talent

Recommended texts

Joseph Baker , Steve Copley and JörgSchorer (2011 Edition).Talent Identification and Development in Sport

International Perspectives. London Taylor and Francis Publishers.

Istvan Balyi, Richard Wayand, and Colin Higgs(2013) Long-Term Athlete Development. 1st Edition: Champaign:IL:Humam Kinetics.

6.21 PSD 720 SPORTS TALENT IDENTIFICATION AND DEVELOPMENT (PRACTICUM) 3 COMPULSORY

Students would be required to visit sports meet (school sport, training sessions) and competitions with the assignment of identifying budding sportsmen and women that could be groomed into elite athletes in the various sports.

6.22 PSD721 HEALTH PROMOTION THROUGH PHYSICAL ACTIVITY AND RECREATION 2 REQUIRED

Course description

Different health promotion paradigm that can be applied to sport and exercise participation will be the focus of this course. Application of theories such health belief model and self-motivation theories to improve life-long participation in exercise, physical activity and recreation will be emphasized.

Course purpose

The purpose of the course is to develop the students' competence on various skills that will encourage increase in participation in physical activity by all population groups considering the multidimensional health, social and economic benefits. The health gains benefits to be made by preventing most non communicable diseases, the benefits include promoting mental wellbeing and social connections, increasing productivity, and positive changes to the environments we live and play in, such as reduced traffic congestion and safer neighborhoods.

Tentative course topics

Health & Social Community activity participation
Social skills networks and social capital build up
Mental health and wellbeing education
Most non communicable disease and obesity prevention/reduction through behavior exercise practices
Environmental sustainability tourism activity
Nutrition for health
Integrated View of Physical Activity, Fitness, and Health

Recommended texts

ZanGao(2017) Technology in Physical Activity and Health Promotion (Routledge Research in Physical Activity and Health) 1st Edition. London: Routledge; Taylor and Francis.
Claude Bouchard, Steven N. Blair, William Haskell (2012) Physical Activity and Health-2nd Edition Champaign IL: Human Kinetics.

6.23 PSD 721 INDIVIDUAL RESEARCH PROJECT 4 COMPULSORY

The course is all about students' individual research project. To be supervised by the assigned project supervisors. This is compulsory

