NATIONAL BOARD FOR TECHNICAL EDUCATION

PLOT B BIDA ROAD, P.M.B. 2239, KADUNA, NIGERIA

NATIONAL DIPLOMA

IN

INFECTIOUS DISEASES AND VACCINOLOGY

CURRICULUM AND COURSE SPECIFICATIONS

DEVELOPED IN COLLABORATION

WITH

PUBLIC HEALTH AND INFECTIOUS DISEASES MANAGEMENT PRACTITIONERS ASSOCIATION OF NIGERIA

APRIL, 2026

PREFACE

The growing burden of infectious diseases, both emerging and re-emerging, continues to pose significant threats to global and national health security. In Nigeria, the dynamic landscape of communicable diseases—ranging from endemic infections to periodic outbreaks—demands a highly skilled workforce equipped with contemporary knowledge and practical competencies in infectious disease prevention, control and vaccination strategies.

In response to this critical need, the Public Health and Infectious Disease Management Practitioners Association of Nigeria has taken a bold and strategic step in sponsoring the development of the *National Diploma in Infectious Diseases and Vaccinology Programme Curriculum*. This programme is designed to bridge existing gaps in workforce capacity by training middle-level professionals who can effectively support disease surveillance, outbreak response, immunization programmes, and public health interventions across diverse healthcare settings.

The curriculum reflects a multidisciplinary and competency-based approach, integrating foundational biomedical sciences with applied public health principles, vaccinology, epidemiology, laboratory practices, and health communication. It is carefully structured to align with national health priorities and global best practices, ensuring that diplomates are well-prepared to contribute meaningfully to disease prevention and control efforts.

Special emphasis has been placed on practical training, field exposure, and the development of critical thinking skills necessary for real-world problem-solving. Furthermore, the curriculum promotes ethical practice, community engagement, and inter-professional collaboration, which are essential components in addressing complex public health challenges.

This initiative underscores our commitment to strengthening Nigeria's health system through capacity building, innovation, and professional development. It is our expectation that this programme will not only produce competent and dedicated healthcare workers but also contribute to improved health outcomes and enhanced resilience against infectious disease threats.

I extend my appreciation to all experts, resource persons and stakeholders who contributed to the development of this curriculum. Their collective expertise and dedication have made this programme a reality. It is our hope that this National Diploma programme will serve as a model for excellence in infectious disease education and a catalyst for sustainable public health advancement in Nigeria and beyond.

Prof. Idris M Bugaje
Executive Secretary
National Board for Technical Education
Kaduna,
Nigeria.

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GENERAL INFORMATION

1.0 TITLE OF THE PROGRAMME

National Diploma (ND) in Infectious Diseases and Vaccinology (IDV).

2.0 GOAL OF THE PROGRAMME

The National Diploma (ND) in Infectious Diseases and Vaccinology is designed to produce middle-level manpower with sound theoretical knowledge and practical skills in infectious diseases, epidemiology, immunology, vaccinology, and disease control practices.

3.0 PROGRAMME OBJECTIVES

At the end of the programme, the diplomates should be able to:

i. Develop strong foundation in basic biomedical sciences relevant to infectious diseases and vaccinology;
ii. Acquire theoretical and practical skills in diagnosis, prevention, control, management and reporting of infectious diseases;
iii. Develop competencies in immunology, vaccinology, vaccine safety, and regulatory affairs;
iv. Understand epidemiology, outbreak investigation, and public health surveillance;
v. Participate in clinical and laboratory vaccine trials and contribute to vaccine innovation and research in infectious disease management;
vi. Acquire basic knowledge and skills in pharmacology and supply chain management of vaccines;
vii. Adhere to professional ethics, Occupational Health and Safety regulations, and teamwork required for effective response to infectious diseases;
viii. Adhere to legal frameworks guiding infectious disease control and vaccinology practice;
ix. Apply knowledge of anatomy, physiology, microbiology, immunology and parasitology in understanding infectious diseases;
x. Demonstrate skills in infection prevention and control (IPC) within community and healthcare settings;
xi. Conduct basic data analysis and epidemiological surveys relevant to infectious disease prevention, control and vaccination programmes;
xii. Participate in routine immunization, vaccine campaigns, and safety monitoring, including cold chain management;
xiii. Participate in clinical and laboratory management of accidents, emergencies/disasters, and outbreak conditions;
xiv. Acquire basic knowledge in pharmacology and applications of essential medicines for infectious disease therapy;
xv. Demonstrate effective communication skills in health, leadership qualities, and entrepreneurial mindset in infectious disease and vaccinology practice;
xvi. Apply basic data analysis and ICT skills in infectious disease management and Vaccinology;
xvii. Pursue careers in Infectious Disease, Vaccinology, Public Health, Epidemiology, Immunology among others.

4.0 ADMISSION REQUIREMENTS

Admission requirements into the ND in Infectious Diseases and Vaccinology programme include:

i. Senior Secondary School Certificate Examination (SSCE) /NECO/WAEC/NABTEB/SAISSCE or equivalent qualifications with at least five (5) credit passes at not more than two sittings in relevant subjects, which must include: English Language, Mathematics, Biology or Health Science, Chemistry, Physics or any other relevant subject such as Agricultural Science, Geography etc.
ii. Minimum admissible score in the Unified Tertiary Matriculation Examination (UTME) conducted by the Joint Admissions and Matriculation Board (JAMB).

5.0 Duration of the Programme

The ND programme is designed to run for two (2) academic sessions (4 semesters) as a terminal programme.

6.0 CURRICULUM STRUCTURE

The curriculum of this programme consists of the following components:

a. General studies/education;
b. Foundation courses;
c. Professional courses;
d. Supervised Industrial Work Experience Scheme (SIWES);
e. One Year Mandatory Industrial Training/Field Experience.

6.1 The General education component (General) shall include courses in:

i. Art and Humanities – English Language, Communication, History. These are compulsory.
ii. Mathematics and Science (for non-Science-based programmes)
iii. Social Studies – Citizenship (the Nigerian constitution) Political science, sociology, Philosophy, geography, and entrepreneurship Studies.

Note: The Citizenship Education and Entrepreneurship courses are compulsory. The General Education component shall account for not more than 15% of total contact hours for the programme.

6.2 Foundation Courses include Introduction to Computing, General Microbiology, Introduction to Parasitology, Human Anatomy and Physiology etc. The number of hours will vary and may account for about 10 – 15% of the total contact hours.

6.3 Professional Courses give students the theory and practical skills needed to practice in their field of calling at the technician/technologist level.

6.4 Students' Industrial Work Experience Scheme (SIWES) shall be taken during the vacation following the end of the second semester of the first year. See details of SIWES in section 14.0. The SIWES shall:

a. Last for a period of 3–4 weeks (3-4 months)
b. Be undertaken in any of the Healthcare Centres listed in section **6.4.2**
c. Be supervised and assessed by academic staff;
d. Require submission of a logbook report.

6.4.1 One Year Mandatory Industrial Training/Field Experience

At the end of the second semester of year two, students shall proceed for one year of mandatory industrial training/field experience in any of the healthcare areas listed in section 6.4.2.

6.4.2 Recommended Healthcare Organisations for SIWES and mandatory Industrial Training/Field Experience

National Diploma in Infectious Diseases and Vaccinology (IDV) students shall undergo SIWES and one-year mandatory Industrial training/Field Eexperience in any of the following healthcare settings:

a. Immunization and Vaccination Units

i. Routine immunization clinics (Primary Healthcare Centre)
ii. Supplemental Immunization Activities (SIAs)
iii. Outreach and mobile vaccination campaigns
iv. Vaccine microplanning and session logistics
v. Cold chain monitoring and vaccine storage facilities

b. Infectious Disease Surveillance Units

i. Integrated Disease Surveillance and Response (IDSR) offices
ii. Local Government Area (LGA) Disease Surveillance Units
iii. State epidemiology units
iv. Community-based surveillance initiatives
v. Digital disease reporting platforms
vi. Visit to research Institute [i.e. NIMR, IHVN, National Institute of Public Health and Infectious Disease (NIPHID)]
vii. Direct Observed Therapy (DOT)
viii. Anti-Retroviral Therapy (ART) Clinic

c. Infections Prevention and Control (IPC) Unit

i. Hospital IPC units
ii. Isolation and triage areas

iii. Sterilization and decontamination units
iv. Waste management and biosafety procedures
v. Healthcare-associated infection monitoring

d. Public Health Laboratories (Observational/Supportive Exposure)

i. Specimen collection points
ii. Sample packaging and transport systems
iii. Biosafety and biosecurity protocols
iv. Laboratory workflow familiarization (non-diagnostic roles)
v. Antimicrobial resistance surveillance exposure

e. Outbreak Preparedness and Response

i. Emergency Operations Centres (EOCs)
ii. Rapid response team simulations
iii. Contact tracing exercises
iv. Risk communication and community engagement activities
v. Field epidemiology demonstrations

f. Community Public Health Practice

i. Community health outreach programmes
ii. School health immunization drives
iii. Market and rural vaccination campaigns
iv. Community sensitization and vaccine advocacy
v. Engagement with traditional and religious leaders

g. Health Information and Data Management

i. Immunization data entry and analysis units
ii. Disease surveillance data dashboards
iii. Digital health tools (DHIS2 exposure)
iv. Monitoring and evaluation units
v. Field data collection exercises

h. Border and Port Health Services (Where Available)

i. Points of entry screening (airports, seaports, land borders)
ii. Traveler vaccination verification
iii. Quarantine and cross-border surveillance exposure
iv. International health regulation (IHR) orientation

i. Humanitarian and Emergency Health Settings (Optional/Exposure-Based)

i. IDP camps and emergency vaccination settings
ii. NGO-led vaccination initiatives
iii. Epidemic-prone environments
iv. Rapid health needs assessments

j. Health Education and Risk Communication

i. Vaccine hesitancy intervention programmes
ii. Media and community engagement sessions
iii. Behavioural change communication activities
iv. Health promotion campaigns

7.0 STAFFING REQUIREMENTS

7.1 Core Teaching Staff

A minimum of four (4) core teaching staff who should possess at least HND or first degree in Infectious Diseases and Vaccinology, Epidemiology and Disease Control, Medical Microbiology, Biomedical Sciences, Immunology, Public Health, and any other related field shall be engaged for one class stream of the programme. The composition of staff in the Department should include a mix of relevant specializations in infectious Diseases and Vaccinology programme.

7.2 Technical Staff

Technical staff should hold relevant National Diploma (ND) and Higher National Diploma (HND) qualifications in Infectious Disease and Vaccinology, Epidemiology and Disease Control and Public Health Technology.

7.3 Headship of the Department

In addition to qualifications in 7.1, the Head of Department should have a Master's degree in Infectious Diseases and Vaccinology or Public Health. He/she must not be below the rank of a Senior Lecturer and must be registered and licensed by the Public Health and Infectious Diseases Management Practitioners of Nigeria or appropriate professional registration body.

7.4 Career Prospects

The diplomates can work in:

A. Immunisation and Vaccination Workforce

i. Vaccination Centres
ii. Immunisation units
iii. Outreach vaccination programme
iv. Cold Chain Centres
v. Campaign Vaccination Centres

Work Settings:

i. Primary Healthcare Centres (PHCs)
ii. State Primary Health Care Development Agencies
iii. Federal/State Ministry of Health
iv. Immunisation campaigns
v. NGOs and development partners

B. Public Health Surveillance Roles

i. Disease surveillance Units
ii. Community surveillance focal persons
iii. Contact Tracing assistants

Work Settings:

i. LGA Health Departments
ii. State Epidemiology Units
iii. Field Surveillance Programmes

C. Infection Prevention and Control (IPC) Support

i. IPC Assistants in hospitals
ii. Isolation Ward Aides
iii. Biosafety Assistants
iv. Outbreak IPC responders

Work Settings:

i. Teaching hospitals
ii. Private hospitals
iii. Emergency response settings

D. Public Health Project Workforce

i. NGOs
ii. International agencies
iii. Research projects
iv. Humanitarian missions

Work Settings:

i. Field vaccination Centres
ii. Community Mobilization Centres
iii. Research Institutes

E. Border and Global Health Security Workforce

i. Port health assistants
ii. Cross-border Surveillance aides
iii. Traveller vaccination support staff
iv. Quarantine support personnel

F. Laboratory-Adjacent Workforce

(Not diagnostic scientists, but supportive roles)

i. Specimen Logistics Assistants
ii. Biosafety Aides
iii. Sample Transport Coordinators

7.5. Emerging and High-Growth Opportunities

A. Epidemic Preparedness Workforce

With rising outbreaks, IDV diplomates can serve in:

i. Emergency Operations Centres (EOCs)
ii. Rapid response teams
iii. Pandemic preparedness programmes

B. Vaccine Industry Opportunities

i. Vaccine distribution companies
ii. Cold chain logistics firms
iii. Medical supply chains
iv. Immunisation data management

C. Digital Public Health

i. DHIS2 data clerks
ii. Surveillance data officers
iii. Immunisation registries
iv. Digital outbreak mapping support

D. Humanitarian and Global Health Missions

i. Refugee/IDP health programmes
ii. Disaster response teams
iii. International NGOs
iv. Cross-border immunisation initiatives

7.6. Academic Prospect

The ND holders in Infectious Diseases and Vaccinology have strong vertical mobility potentials:

i. They may progress to HND in Infectious Disease and Vaccinology;
ii. They can be admitted into bridging programmes or ND-to-degree routes into Public Health, Epidemiology, Health Education, Microbiology, Health Systems Management, Community Health and Infectious Disease and Vaccinology programme etc
iii. It creates a unique pipeline into: Vaccinology degrees; Field Epidemiology Training Programmes (FETP); Infection Control certification and Global health fellowships.

7.7 Professional Certification Prospects

Diplomates may later obtain certifications such as: Immunisation specialist certification; IPC certification; Surveillance and outbreak response certification and cold chain management certification. This enhances their employability, global mobility and professional recognition.

7.8 Entrepreneurial Opportunities

Diplomates may establish: Vaccine outreach services; Mobile immunisation consultancies; Cold chain logistics services; and Health education platforms; Community vaccination NGOs; Health advocacy organisations and Vaccine confidence initiatives.

8. ACCREDITATION

The programme shall be approved to commence for an initial period of two (2) years. When the programme reaches its third or fourth semester, a full accreditation exercise shall be carried out by National Board for Technical Education before the students can be awarded the National Diploma

qualifications. Details about the process of approving and accrediting the programme are available from the Executive Secretary, National Board for Technical Education, P. M. B. 2239, Kaduna.

9. CERTIFICATION

A diplomate of this programme shall be awarded a National Diploma (ND) in Infectious Diseases and Vaccinology (IDV).

10. CONDITIONS FOR THE AWARD OF THE ND

10.1 Institutions offering accredited programmes will award the National Diploma to candidates who successfully complete the programme after passing prescribed coursework, examinations, diploma project, and the Students Industrial Work Experience Scheme (SIWES). Such candidates should have completed a minimum of 72 to 80 semester credit units and a maximum of 160 credit units, depending on the programme.

10.2 National Diplomas shall be classified as follows:

Distinction	CGPA of 3.50 and above
Upper Credit	CGPA of 3.00- 3.49
Lower Credit	CGPA of 2.50 – 2.99
Pass	CGPA of 2.00 – 2.49

10.3 Grading of Courses:

Courses shall be graded as follows:

MARKED RANGE	LETTER GRADE	WEIGHTING
75% and above	A	4.00
70% – 74%	AB	3.50
65% – 69%	B	3.25
60% – 64%	BC	3.00
55% – 59%	C	2.75
50% – 54%	CD	2.50
45% – 49%	D	2.25
40% – 44%	E	2.00
Below 40%	F	0.0

11. GUIDANCE NOTE FOR TEACHERS

11.1 The new curriculum is drawn in unit courses. This is in keeping with the provisions of the National Policy on Education, which stress the need to introduce the semester credit units, which will enable a student who so wishes to transfer the units already completed in an institution of similar standard from which he is transferring.

11.2 In designing the units, the principles of the modular system by product have been adopted; thus, making each of the professional modules, when completed, provide the students with technician operative skills, which can be used for employment purposes.

11.3. As the success of the credit unit system depends on the articulation of programmes between the institutions and industry, the curriculum content has been written in the behavioral objectives, so that it is clear to all the special Learning objective of the student who successfully completes some of the courses or the diplomates of the programme. There is a slight departure in the presentation of the performance-based curriculum, which states the special learning objective for the students. Also, there is a deliberate attempt to further involve the staff of the department in teaching by having another column called Teachers' activities. This is to ensure that the teachers deliver the required learning objectives. There is a third column for the Resources required for each learning objective. Each department is expected to develop its own teaching curriculum from this minimum Guide curriculum and ensure that the resources required are available. The Academic Board of the institution may vet departmental submissions on the final curriculum. We aim to continue to see to it that a solid internal evaluation system exists in each institution for ensuring a minimum standard and quality of education in the programmes offered throughout the TVET Institutions.

11.4 The teaching of the theory and practical work should, as much as possible, be integrated. Practical exercises, especially those in professional courses and laboratory work, should not be taught in isolation from the theory. For each course, there should be a balance of theory to practice in the ratio 60:40.

12. PRACTICAL LOGBOOK

A personal Logbook to be kept by each student shall contain all day-to-day, weekly and semester summaries of all the practical activities from day one to the end of the programme. This is to be checked, marked, endorsed, and recorded by the lecturers concerned at the end of every week.

13. FINAL PROJECT

Final year students in this programme are expected to carry out project work. This could be on an individual basis or group work of not more than five students per group, but reporting must be undertaken individually. The project should, as much as possible, be related to the programme and core professional discipline. Project reports should be well presented and should be properly supervised. The department should make its own arrangement of schedules for project work.

14. GUIDELINES ON SIWES PROGRAMME

For the smooth operation of the SIWES, the following guidelines shall apply:

14.1 Responsibility for placement of Students.

a. Institution offering the ND programme shall arrange to place the students in industry. By the end of second semester of the first academic session, six copies of the master list showing where each student has been placed shall be submitted to the Executive Secretary, NBTE, who shall, in turn authenticate the list and forward it to the Industrial Training Fund, Jos. The Placement Officer should discuss and agree with industry on the following
b. The Placement Officer should discuss and agree with industry on the following:
    i. A task inventory of what the student is expected to experience during the period of attachment. It may be wise to adopt the one already approved for each field by the industry-based supervisor.
    ii. The evaluation of the student by the industry-based supervisor and the institution-based supervisor.
    iii. The final grading of the student during the period of attachment should be weighted more on the evaluation by industry-based supervisor.

14.2 Evaluation of Student during the SIWES

In the evaluation of the student, cognizance should be taken of the following items:

i. Punctuality
ii. Attendance
iii. General attitude to work
iv. Respect for authority
v. Interest in the field/technical area
vi. Technical competence as a potential technician in his field.

14.3 Grading of SIWES

To ensure uniformity of grading scales, the institution should ensure that the uniform grading of students work, which has been agreed to by all TVET Institutions is adopted.

14.4 The Institution based Supervisor

The institution-based supervisor should initial the log book during each visit. This will enable him to check and determine to what extent the objectives of the scheme are being met and to assist students having any problems regarding the specific given to them by their industry-based supervisor.

14.5 Frequency of visit

Institutions should ensure that students placed on the attachment are visited within one month of their placement. Other visits shall be arranged so that:

i. There is another visit six weeks after the first visit; and
ii. A final visit in the last month of the attachment.

14.6 Stipend for Students in SIWES

The rate of stipend payable shall be determined from time to time by the Federal Government after due consultation with the Federal Ministry of Education, the Industrial Training fund and the NBTE.

14.7 SIWES as a component of the Curriculum

The completion of SIWES is important in the final determination of whether the student is successful in the programme or not. Failure in the SIWES is an indication that the student has not shown sufficient interest in the field or has no potential to become a skilled technician in their field. The SIWES should be graded on a pass or fail basis. Where a student has satisfied all other requirements but failed SIWES, s/he may only be allowed to repeat another four months of SIWES at his own expense.

Note: Due to the requirements of the programme, all ND I students shall undergo the Students Industrial Work Experience Scheme (SIWES), which is restricted to the following practice areas for a period of four (4) months. The Practicum will be held during the period of the SIWES.

CURRICULUM TABLE

Year One, Semester One

S/N	Course Code	Course Title	L	T	P	CU	CH
1.	GNS 101	Use of English I	2	0	0	2	2
2.	GNS 111	Citizenship Education I	2	0	0	2	2
3.	COM 111	Introduction to Computing	1	0	1	2	2
4.	MSQ 111	Mandatory Skills Qualification	1	0	1	2	2
5.	IDV 111	Ethics, Law and Health Policy in Vaccinology	1	0	0	1	1
6.	IDV 112	Introduction to Infectious Diseases and Vaccinology I	2	0	0	2	2
7.	IDV 113	Introduction to Immunology and Immunotherapy	2	0	0	2	2
8.	IDV 114	General Microbiology	2	0	1	3	3
9.	IDV 115	Introduction to Parasitology	1	0	1	2	2
10.	IDV 116	Human Anatomy and Physiology I	2	0	1	3	3
11.	IDV 117	Introduction to Primary Health Care (PHC) and Universal Health Coverage (UHC)	1	0	1	2	2
12.	IDV 118	Immunity and Immunization	1	0	1	2	2
TOTAL			**18**	**0**	**7**	**25**	**25**

Year One, Semester Two

S/N	Course Code	Course Title	L	T	P	CU	CH
1.	GNS 102	Communication in English I	2	0	0	2	2
2.	GNS 121	Citizenship Education II	2	0	0	2	2
3.	ENT 126	Introduction to Entrepreneurship I	2	0	1	3	3
4.	IDV 121	Human Anatomy and Physiology II	1	0	1	2	2
5.	IDV 122	Immunology and Vaccine Trials	2	0	1	3	3
6.	IDV 123	Introduction to Infectious Diseases and Vaccinology II	1	0	1	2	2
7.	IDV 124	Accident and Emergency Conditions	1	0	1	2	2
8.	IDV 125	Sexually Transmitted Infections (STIs)	1	0	1	2	2
9.	IDV 126	Vaccine Safety and Regulatory Affairs	1	0	0	1	1
10.	IDV 127	Introduction to Communicable and Non-Communicable Diseases	2	0	0	2	2
11.	IDV 128	Introductory Bacteriology	1	0	1	2	2
12.	IDV 129	Introduction to Infection Prevention and Control	1	0	1	2	2
13.	IDV 131	Computer Applications in Infectious Diseases and Vaccinology	1	0	1	2	2
TOTAL			**18**	**0**	**9**	**27**	**27**

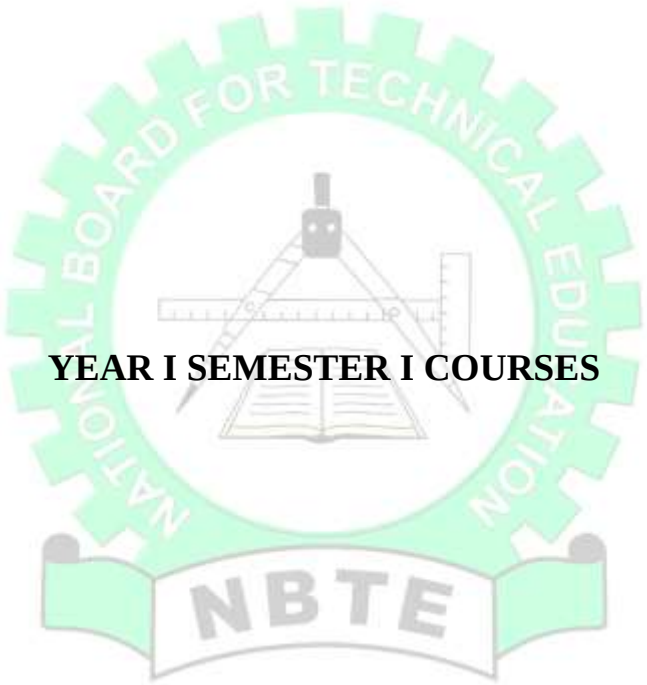
Year Two, Semester One

S/N	Course Code	Course Title	L	T	P	CU	CH
1.	GNS 201	Use of English II	2	0	0	2	2
2.	ENT 216	Introduction to Entrepreneurship II	2	0	1	3	3
3.	GNS 213	Introduction to Medical Sociology	2	0	0	2	2
4.	IDV 211	Introduction to Public Health	2	0	0	2	2
5.	IDV 212	Introduction to Demography	1	0	0	1	1
6.	IDV 213	Introduction to Disease Surveillance	1	0	1	2	2
7.	IDV 214	Mental Health in Infectious Diseases and Vaccinology	2	0	0	2	2
8.	IDV 215	Cold Chain Management and Vaccine Logistics	1	0	1	2	2
9.	IDV 216	Biostatistics	1	0	1	2	2
10.	IDV 217	Seminar in Infectious Diseases and Vaccinology	2	0	0	2	2
11.	IDV 218	Research Methodology	2	0	0	2	2
12.	IDV 219	Students' Industrial Work Experience Scheme (SIWES)	0	0	4	4	4
Total			**18**	**0**	**8**	**26**	**26**

Year Two, Semester Two

S/N	Course Code	Course Title	L	T	P	CU	CH
1.	IDV 221	Introduction to Health Education and Promotion	1	0	1	2	2
2.	IDV 222	Diet Therapy in Infectious Diseases Management	1	0	1	2	2
3.	IDV 223	Pharmacology and Essential Medicines in Infectious Diseases	1	0	1	2	2
4.	IDV 224	Global Health	1	0	0	1	1
5.	IDV 225	Outbreak Investigation	2	0	0	2	2
6.	IDV 226	Contemporary Issues, Innovation, Future Trends in Vaccinology	2	0	0	2	2
7.	IDV 227	Occupational and Environmental Health	1	0	1	2	2
8.	IDV 228	Medical Waste Management	1	0	1	2	2
9.	IDV 229	Disaster Response in Infectious Diseases and Vaccinology	1	0	1	2	2
10.	IDV 240	Project	0	0	4	4	4
Total			**11**	**0**	**10**	**21**	**21**

Key: Lectures (L), Practical (P), Tutorials (T), Credit Unit (CU) and Contact Hours (CH)



YEAR I SEMESTER I COURSES

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: ETHICS, LAW AND HEALTH POLICY IN VACCINOLOGY	**COURSE CODE: IDV 111**	**CONTACT HOUR: 1 hour/week**
	CREDIT UNIT: 1	**THEORETICAL: 1hour/week**
YEAR: I SEMESTER: I	**PRE-REQUISITE:**	**PRACTICAL: 0**
GOAL: The course is designed to equip students with knowledge on ethical principles, legal frameworks, and health policies governing infectious disease control and vaccinology.		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand the principles of medical professional ethics and their application to infectious diseases and Vaccinology;
2.0 Understand health laws and health policy;
3.0 Understand ethical dilemmas in vaccine allocation, safety, and mandatory vaccination;
4.0 Understand public health laws related to infectious disease control in Nigeria and globally;
5.0 Understand the roles of relevant stakeholders, agencies, and other global organizations in vaccine governance.

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY						
COURSE: ETHICS, HEALTH LAWS HEALTH POLICY IN VACCINOLOGY		**COURSE CODE: IDV 111**		**CONTACT HOURS: 1hour/week**		
		CREDIT UNIT: 1		**THEORETICAL: 1hour/week**		
YEAR: I SEMESTER: I		**PRE-REQUISITE:**		**PRACTICAL: 0**		
COURSE SPECIFIFCATION: THEORETICAL						
GOAL: This course is designed to equip students with knowledge on ethical principles, legal frameworks, and health policies governing infectious disease control and vaccinology.						
General Objective 1.0: Understand the core principles of health professional ethics and their application to infectious diseases and vaccinology.						
THEORETICAL CONTENT				**PRACTICAL CONTENT**		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-3	1.1 Define professional ethics. 1.2 Explain principles of health and medical ethics (Autonomy, Beneficence, non-maleficence, Social justice). 1.3 1.3 Explain ethics in infectious disease control and prevention. 1.4 Explain the historical medical professional ethics	• Define medical professional ethics • Explain Principles of health and medical ethics: autonomy, beneficence, non-maleficence, justice. • Ethics in infectious disease control and prevention. • Explain the Historical medical professional ethics	Textbook, Policy Document, Relevant chart, Case study etc			
General Objective 2.0: Understand health laws and health policy						
4-6	2.1 Explain health policy. 2.2 Explain health laws. 2.3 Explain the National	• Explain health policy • Explain health laws	Textbook Policy Document			

	health laws governing vaccines in Nigeria (e.g., NAFDAC regulations). 2.4 Explain International regulations (WHO, FDA, EMA). 2.5 Explain vaccine approval processes and post-marketing surveillance. 2.6 Explain intellectual property rights, patents, and access to vaccines.	• Explain the National health laws governing vaccines in Nigeria (e.g., NAFDAC regulations). • Explain International regulations (WHO, FDA, EMA). • Explain Vaccine approval processes and post-marketing surveillance. • Explain Intellectual property rights, patents, and access to vaccines.	Relevant chart Case study			
General Objective 3.0: Understand ethical dilemmas in vaccine allocation, safety, and mandatory vaccination.						
7-9	3.1 Explain informed consent in clinical research. 3.2 Explain ethical challenges in paediatric and vulnerable populations. 3.3 Explain adverse event of vaccination. 3.4 Explain compensation for adverse events. 3.5 Explain how to balance public health urgency with ethical obligations.	• Explain Informed consent in clinical research. • Explain Ethical challenges in paediatric and vulnerable populations. • Explain adverse event of vaccination • Discuss compensation for adverse events. • Explain how to	Textbook Policy Document Relevant chart Case study			

		balance public health urgency with ethical obligations				
General Objective 4.0 Understand public health laws related to infectious disease control in Nigeria and globally:						
10-12	4.1 Explain global vaccination policies (WHO expanded programme on Immunization). 4.2 Explain the Nigerian vaccination policies and NPHCDA strategies. 4.3 Explain vaccine distribution equity: global north vs. south debates. 4.4 Explain vaccination laws and human rights concerns.	• Explain Global vaccination policies (WHO Expanded Programme on Immunization • Explain the Nigerian vaccination policies and NPHCDA strategies. • Explain Vaccine distribution equity: global north vs. south debates. • Explain vaccination laws and human rights concerns.	Textbook Policy Document Relevant chart Case study			
General Objective 5.0: Understand the roles of relevant stakeholders, agencies, and other global organizations in vaccine governance.						
13-15	5.1 Enumerate the roles of relevant stakeholders in vaccine governance. 5.2 Explain vaccine hesitancy. 5.3 Explain the ethical dimensions of vaccine acceptance and refusal. 5.4 Explain the implication of misinformation and mistrust in institutions. 5.5 Explain Strategies for addressing hesitancy	• Prepare lecture notes and slides to: • Enumerate the role of relevant stakeholders in vaccine governance • Explain vaccine hesitancy • Explain the Ethical dimensions of vaccine acceptance and refusal.	Textbook Policy Document Relevant chart Case study			

	ethically and effectively.	• Explain the role of misinformation and mistrust in institutions. • Explain Strategies for addressing hesitancy ethically and effectively.				

Course Assessment
Course Work: 20%
Tests: 20%
Examination: 60%
Total: 100%

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: INTRODUCTION TO INFECTIOUS DISEASES AND VACCINOLOGY I	COURSE CODE: IDV 112	CREDIT UNIT: 2
	CONTACT HOURS: 2 Hours/Week	THEORETICAL: 2 Hours/Week
YEAR: I SEMESTER: I	PRE-REQUISITE:	PRACTICAL: 0

GOAL: This course is designed to enable students understand the fundamental concepts of infectious diseases, microbial transmission, host–pathogen interactions, principles of disease prevention, and foundational concepts in vaccinology for public health practice.

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand the concept and classification of infectious diseases;
2.0 Know causative agents of infectious diseases;
3.0 Understand disease transmission and chain of infection;
4.0 Understand host–pathogen interaction and immunity;
5.0 Understand infectious diseases based on public health significance;
6.0 Understand disease monitoring, prevention and control measures;
7.0 Understand principles of vaccinology.

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY					
COURSE: INTRODUCTION TO INFECTIOUS DISEASES AND VACCINOLOGY		COURSE CODE: IDV 112		CREDIT UNIT: 2	
		CONTACT HOURS: 2 Hours/Week		THEORETICAL: 2 Hours/Week	
YEAR: I SEMESTER: I		PRE-REQUISITE:		PRACTICAL:	
COURSE SPECIFIFCATION: THEORETICAL AND PRACTICAL					
GOAL: This course is designed to enable students understand the fundamental concepts of infectious diseases, microbial transmission, host–pathogen interactions, principles of disease prevention, and foundational concepts in vaccinology for public health practice.					
General Objective 1.0: Understand the concept and classification of infectious diseases.					
THEORETICAL CONTENT				PRACTICAL CONTENT	
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-2	1.1 Define infectious diseases. 1.2 Differentiate communicable and non-communicable diseases. 1.3 Classify infectious diseases (based on time, pathogens, mode of transmission, emerging and re-emerging)	• Explain infectious disease • Discuss difference between communicable and non-communicable diseases • Classify infectious diseases (based on time, pathogens, mode of transmission, emerging and re-emerging)	Textbooks, Lecture notes, Slides, Computers, Projectors, White Boards, Charts, WHO materials etc			
General Objective 2.0: Know causative agents of infectious diseases.						
3-4	2.1 Explain the concept of causative agents of infectious diseases. 2.2 Classify microorganisms (bacteria, viruses, fungi,	• Explain the concept causative agents of infectious diseases • Explain	Diagrams Microbial charts Lecture notes Textbooks Research articles			

	helminths, protozoa etc) 2.3 Explain characteristics of pathogenic organisms. 2.4 Explain the concept of emerging and re-emerging pathogens.	microorganisms (bacteria, viruses, fungi, helminths, protozoa) • Describe pathogenic organisms • Describe emerging and re-emerging pathogens				
General Objective 3.0: Understand disease transmission and chain of infection.						
5-6	3.1 Explain epidemiological triad and chain of infection. 3.2 Describe modes of transmission (direct, indirect, airborne, aerosol, blood borne, vector-borne etc) 3.3 Describe infection control strategies (Administrative, Environmental, PPE).	• Explain epidemiological triad and chain of infection • Explain modes of transmission (direct, indirect, airborne, vector-borne etc) • Discuss chain of infection • Explain infection control strategies (Administrative, Environmental, PPE)	Posters, Lecture notes, Textbooks, Case definition charts			
General Objective 4.0: Understand host–pathogen interaction and immunity.						
7-8	4.1 Explain concept of immune system and Immunity. 4.2 Differentiate between innate and adaptive immunity. 4.3 Describe factors influencing susceptibility. 4.4 Explain the concept of pathogenicity and virulence.	• Prepare lecture notes and slides to: • Explain concept of immune system and Immunity • Differentiate between innate and adaptive immunity • Describe factors	Slides, Immunology charts, Case examples			

		influencing susceptibility • Explain the concept of pathogenicity and virulence				
General Objective 5.0: Understand infectious diseases based on public health significance.						
9-10	5.1 Classify diseases based on Public health significance (i.e. Diseases targeted for eradication, Epidemic prone diseases, disease of public health importance). 5.2 Introduce Malaria, Tuberculosis, HIV/AIDS, Neglected Tropical Diseases (NTDs), Viral Haemorrhagic fevers (VHF) etc. 5.3 Outline vaccine-preventable diseases.	• Prepare lecture notes and slides to: • Classify diseases based on Public health significance (i.e. Diseases targeted for eradication, Epidemic prone diseases, disease of public health importance) • Introduce Malaria, Tuberculosis, HIV/AIDS, Neglected Tropical Diseases (NTDs), Viral Haemorrhagic fevers (VHF) etc. • Outline vaccine-preventable diseases	National guidelines, EPI schedule, WHO reports etc			
General Objective 6.0: Understand disease monitoring, prevention and control measures						
11-12	6.1 Explain levels of prevention. 6.2 Describe levels of control measures (Administrative, Environmental, and PPE). 6.3 Explain surveillance systems (IDSR). 6.4 Explain outbreak investigation	• Prepare lecture notes and slides to: • Explain levels of prevention • Describe levels of control measures (Administrative,	Public health charts, Surveillance manual, Sample reports			

	basics.	Environmental, and PPE) • Describe surveillance systems (IDSR) • Discuss outbreak investigation basics				
General Objective 7.0: Understand principles of vaccinology.						
13-15	7.1 Define Vaccinology. 7.2 Discuss history of vaccination. 7.3 Explain the concepts of vaccination and immunization 7.4 Discuss between types of vaccines (live, inactivated, subunit, mRNA etc) 7.5 Discuss types of vaccinations and immunizations (Passive and active immunization). 7.6 Explain the concept of herd immunity and basic reproduction number of micro-organisms. 7.7 Explain vaccine safety.	• Explain vaccinology • Discuss history of vaccination • Discuss between types vaccines (live, inactivated, subunit, mRNA) • Discuss types of vaccinations and immunizations (Passive and active immunization) • Explain the concept of herd immunity and basic reproduction number of micro-organisms • Explain vaccine safety	Historical review, Vaccine charts, Lecture notes, Immunization guidelines etc			
Course Assessment Course Work: 20% Tests: 20% Examination: 60% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: INTRODUCTION TO IMMUNOLOGY AND IMMUNOTHERAPY	**COURSE CODE: IDV 113**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 Hours/Week	**THEORETICAL: 2 Hours/Week**
YEAR: I SEMESTER: I	**PRE-REQUISITE:**	**PRACTICAL: 0**

GOAL: This course is designed to enable students acquire foundational knowledge of the immune system, immune responses to infectious agents, mechanisms of immunity to infectious agents, and basic principles of immunotherapy in disease prevention and treatment.

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand components of the immune system;
2.0 Know innate and adaptive immunity;
3.0 Understand antigen–antibody reactions;
4.0 Understand immune response to infection;
5.0 Understand hypersensitivity and autoimmune disorders;
6.0 Understand immunization and immunotherapy.

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY					
COURSE: INTRODUCTION TO IMMUNOLOGY AND IMMUNOTHERAPY		**COURSE CODE: IDV 113**		**CREDIT UNIT: 2**	
		CONTACT HOURS: 2 Hours/Week		**THEORETICAL: 2 Hours/Week**	
YEAR: I SEMESTER: I		**PRE-REQUISITE:**		**PRACTICAL: 0**	
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL					
GOAL: This course is designed to enable students acquire foundational knowledge of the immune system, immune responses to infectious agents, mechanisms of immune protection, and basic principles of immunotherapy in disease prevention and treatment.					
General Objective 1.0: Understand components of the immune system.					
THEORETICAL CONTENT				**PRACTICAL CONTENT**	
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-2	1.1 Define immunology. 1.2 Describe organs of immune system (bone marrow, thymus, spleen, lymph nodes). 1.3 Describe immune cells (WBCs, lymphocytes, macrophages).	• Explain the concepts of immunology • Describe organs of immune system • Highlight immune cells	Textbooks, Microscopic images, Charts Computer, Video clips etc			
General Objective 2.0: Understand innate and adaptive immunity.						
3-5	2.1 Explain innate immunity 2.2 Explain adaptive immunity. 2.3 Differentiate humoral and cell-mediated immunity.	• Explain innate immunity • Explain adaptive immunity • Differentiate humoral and cell-mediated immunity	Diagrams, Slides Immunology charts Lecture notes and slides etc			
General Objective 3.0: Understand antigen–antibody reactions.						
	3.1 Define antigen and antibody. 3.2 Explain structure of immunoglobulins	• Define antigen and antibody • Explain structure of	Charts, Models Examples etc			

6-8	3.3 Explain different classes of immunoglobulins in relation to infectious disease. 3.4 Explain antigen-antibody reactions. 3.5 Describe types of antigens–antibody reaction.	immunoglobulins • Describe types of antigens–antibody reactions • Explain antigen-antibody reactions • Describe types of antigens–antibody reactions				
General Objective 4.0: Understand immune response to infection.						
9-11	4.1 Explain immune response. 4.2 Explain primary and secondary immune response. 4.3 Describe immune memory. 4.4 Relate immune response to infectious diseases.	• Explain immune response • Explain primary and secondary immune response • Describe immune memory • Relate immune response to infectious diseases	Charts, Case examples, Disease reports, Lecture notes, Textbooks, Research papers			
General Objective 5.0: Understand hypersensitivity and autoimmune disorders.						
12-13	5.1 Define hypersensitivity reactions. 5.2 Classify hypersensitivity reactions (Type I–IV). 5.3 Explain autoimmune diseases. 5.4 Describe immunodeficiency disorders.	• Discuss: Hypersensitivity reactions (Type I–IV) • Autoimmune diseases • Immunodeficiency disorders	Immunology chart, Lecture notes, Textbooks, Research papers, Case study, HIV example			
General Objective 6.0: Know immunization and immunotherapy.						
14-15	6.1 Define immunisation and immune therapy. 6.2 Define active and passive immunity.	• Introduce Immunisation and immune therapy	Charts, Lecture notes, Textbooks, Research papers,			

	6.3 Explain monoclonal antibodies. 6.4 Describe the concept of therapeutic vaccines.	• Explain active and passive immunity • Identify monoclonal antibodies • Discuss the concept of therapeutic vaccines	Case examples			
Course Assessment Course Work: 20% Tests: 20% Examination: 60% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: GENERAL MICROBIOLOGY	**COURSE CODE: IDV 114**	**CREDIT UNIT: 3**
	CONTACT HOURS: 3 hours/week	**THEORETICAL: 2 hours/week**
YEAR: 1 SEMESTER: 1	**PRE-REQUISITE:**	**PRACTICAL: 1 hour/week**
GOAL: This course is designed to enable students to understand the general principles of microbiology and apply microbiological knowledge in health practice		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Know the history of microbiology;
2.0 Understand microbial systematics;
3.0 Understand microbial growths and requirements;
4.0 Know microbial cultivation skills;
5.0 Know microbial morphological characteristics;
6.0 Know control of microbial growth;
7.0 Understand host defence mechanism;
8.0 Know mechanisms of disease causation and treatment.

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: GENERAL MICROBIOLOGY	COURSE CODE: IDV 114	CREDIT UNIT: 3
	CONTACT HOURS: 3 hours/week	THEORETICAL: 2 hours/week
YEAR: I SEMESTER: I	PRE-REQUISITE:	PRACTICAL: 1 hour/week
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to enable students to understand the general principles of microbiology and apply microbiological knowledge in health practice		

General Objective 1.0: Know the history of microbiology						
THEORETICAL CONTENT				PRACTICAL CONTENT		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1	1.1 Define microbiology. 1.2 Describe early microbiology discoveries. 1.3 Discuss pioneer microbiologists. 1.4 Explain germ theory. 1.5 Outline major historical milestones. 1.6 Differentiate between Pre- and Post-Germ eras.	• Explain microbiology • Describe early microbiology discoveries • Know pioneer microbiologists • Explain germ theory • Outlines major historical milestones • Differentiate between Pre- and Post-Germ Eras	Textbooks, Articles, Computer, Projector, Markerboard, Marker, Educational Videos, Documentaries Journals			
General Objective 2.0: Understand microbial systematics						
2 – 3	2.1 Define microbial systematics. 2.2 Describe microbial	• Explain microbial systematics • Explain microbial	Textbooks Articles Computer			

	classification principles. 2.3 Explain taxonomic hierarchy levels. 2.4 Differentiate phenotypic and genotypic methods of classification. 2.5 Explain binomial nomenclature correctly.	classification principles • Explain taxonomic hierarchy levels • Explain phenotypic and genotypic methods • Explain binomial nomenclature correctly	Projector Markerboard Marker Educational Videos or Documentaries Journals			
General Objective 3.0: Understand microbial growth and requirements						
4 – 5	3.1 Define microbial growth 3.2 Explain nutritional requirements for microbial growth. 3.3 Explain environmental microbial growth factors. 3.4 Describe microbial growth curve.	• Explain Microbial Growth • Explain Nutritional Requirements for microbial growth • Explain Environmental microbial growth Factors • Describe the microbial growth curve	Textbooks, Articles Computer Projector Markerboard Marker Educational Videos or Documentaries Journals	• Draw and interpret microbial growth curves	Guide students to: • Draw and interpret microbial growth curves	Graph sheets, laboratory growth data
General Objective 4.0: Know microbial cultivation skills						
6 – 7	4.1 Define microbial cultivation. 4.2 Highlight culture media types. 4.3 Describe aseptic techniques. 4.4 Explain inoculation	• Explain microbial cultivation • Describe culture media types • Describe aseptic techniques • Describe	Computer, Projector, Markerboard, Marker, Educational Videos or Documentaries	• Identify culture media types • Carryout the following: - Inoculation - Isolation - Purification	Guide students to: • Identify culture media types • Carryout the following: Inoculation, Isolation,	Various types of culture media, Bunsen burner, wire loop, distilled water, autoclave, and water bath Inoculation chamber

	methods. 4.5 Explain isolation techniques. 4.6 Describe how to interpret colony characteristics.	inoculation methods • Describe isolation techniques • Explain how to interpret colony characteristics	Journals etc	- Preservation • Use PPE to carry out the above. • Interpret colony characteristics	Purification and Preservation • Use PPE to carry out the above. • Interpret colony characteristics	PPE Petri dish Colony Counter Refrigerator etc
General Objective 5.0: Know microbial morphological characteristics						
8-9	5.1 Define microbial morphology. 5.2 Describe bacterial cell shapes. 5.3 Explain cellular arrangements. 5.4 Explain Gram reactions. 5.5 Describe fungal structures. 5.6 Explain how to interpret microscopic observations.	• Explain microbial morphology • Describe bacterial cell shapes • Describe cellular arrangements • Explain Gram reactions • Describe fungal structures • Describe how to interpret microscopic observations	Textbooks, Articles, Computer, Projector, Markerboard, Marker, Educational, Videos, Documentaries, Journals etc	• Identify bacterial cell shapes • Identify fungal structures • Conduct Gram staining • Conduct wet mounts of fungi using Potassium Hydroxide (KOH) • Interpret microscopic observation of the above	Guide students to: • Identify bacterial cell shapes • Identify fungal structures • Conduct Gram staining • Conduct wet mounts of fungi using KOH • Interpret microscopic observation of the above	Gram staining reagents KOH, slides, cover slips, microscopes Petri dish Culture isolates PPE
General Objective 6.0: Know control of microbial growth						
10 – 12	6.1 Define microbial control. 6.2 Differentiate between sterilization and disinfection. 6.3 Discus various sterilizations methods.	• Explain microbial control • Differentiate between sterilization and disinfection	Computer, Projector, Markerboard, Marker, Educational Videos etc	• Conduct boiling, autoclaving, flaming, incineration and hot air sterilization	Guide students to: • Conduct boiling, autoclaving, flaming, incineration and	Culture media, autoclave, hot air oven, Bunsen burner, and wire loop Incinerator Disinfectants

	6.4 Explain physical control methods of microbial growth. 6.5 Explain chemical control agents. 6.6 Explain antimicrobial mechanisms.	• Explain various sterilizations methods • Explain physical control methods • Explain chemical control agents • Explain antimicrobial mechanisms		• Conduct various types of antimicrobial susceptibility tests	hot air sterilization • Conduct various types of antimicrobial susceptibility tests	Weighing balance Antibiotic disk
General Objective 7.0: Understand host defense mechanisms						
13 – 14	7.1 Define immunology. 7.2 Define host defense mechanism. 7.3 Differentiate between innate and adaptive immunity. 7.4 Explain humoral and cellular responses. 7.5 Describe key immune cells and molecules.	• Explain immunology • Explain host defense mechanism • Differentiate between innate and adaptive immunity • Explain humoral and cellular responses • Identify key immune cells and molecules	Computer, Projector, Markerboard, Marker, Educational, Videos etc			
General Objective 8.0: Know mechanisms of disease causation and treatment						
15	8.1 Define pathogenesis. 8.2 Explain microbial virulence factors. 8.3 Explain routes of infection. 8.4 Describe disease	• Explain pathogenesis • Explain microbial virulence factors • Explain routes of	Computer, Projector, Markerboard, Marker, Educational, Videos etc			

	progression stages. 8.5 Classify antimicrobial therapy. 8.6 Explain principles of therapy and prevention.	infection • Describe disease progression stages • Classify antimicrobial therapy • Explain principles of therapy and prevention				
Course Assessment Course Work: 10% Tests: 10% Practical: 40% Examination: 40% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: INTRODUCTION TO PARASITOLOGY	**COURSE CODE: IDV 115**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 Hours/week	**THEORETICAL: 1 Hour/week**
YEAR: 1 SEMESTER: 1	**PRE-REQUISITE:**	**PRACTICAL: 1 Hour/week**
GOAL: This course is designed to equip students with foundational knowledge of medically important parasites, their transmission, diagnosis, and control within the context of infectious diseases.		
GENERAL OBJECTIVES On completion of this course, the students should be able to: 1.0 Understand principles of parasitology; 2.0 Know medically important parasites; 3.0 Know parasite morphology and lifecycles; 4.0 Understand parasite life cycles; 5.0 Know modes of parasite transmission; 6.0 Apply prevention and control measures.		

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: INTRODUCTION TO PARASITOLOGY	**COURSE CODE: IDV 115**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 hours/week	**THEORETICAL: 1 hours/week**
YEAR: 1 SEMESTER: 1	**PRE-REQUISITE:**	**PRACTICAL: 1 hours/week**
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to equip students with foundational knowledge of medically important parasites, their transmission, diagnosis, and control within the context of infectious diseases.		
General Objective 1.0: Understand principles of parasitology		

THEORETICAL CONTENT				**PRACTICAL CONTENT**		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-2	1.1 Define parasitology and its related terms. 1.2 Differentiate parasite and host types. 1.3 Classify parasites by habitat. 1.4 Explain host–parasite relationships.	• Explain parasitology and related terms • Differentiate parasite and host types • Classify parasites by habitat • Explain host–parasite relationships	Whiteboard and markers Charts/Power Point slides WHO parasitic disease data sheets Parasitology textbooks			
General Objective 2.0: Know medically important parasites						
3-6	2.1 Classify medically important parasites. 2.2 Discuss the following classes of parasites i. Protozoa ii. Helminths iii. Nematodes	• Classify medically important parasites • Discuss the following parasites - Protozoa - Helminths	Classification charts, PowerPoint slides, Parasitology atlas	• Identify protozoa microscopically • Identify helminths microscopically • Identify nematodes microscopically	Guide students to: • Identify protozoa microscopically • Identify	Compound microscope, Prepared slides, Immersion oil etc

	iv. Cestodes v. Trematodes 2.3 Outline arthropod vectors.	- Nematodes - Cestodes - Trematodes • Outline arthropod vectors		• Identify cestodes microscopically • Identify trematodes microscopically • Identify arthropod vectors (mosquitoes, ticks, etc)	helminths microscopically • Identify nematodes microscopically • Identify cestodes microscopically • Identify trematodes microscopically • Identify arthropod vectors (mosquitoes, ticks, etc)	
General Objective 3.0: Know parasite morphology and lifecycles						
7-8	3.1 Describe trophozoite stages. 3.2 Describe cyst stages. 3.3 Describe egg stages. 3.4 Describe larval stages. 3.5 Differentiate the diagnostic stages in the life cycles of medically important parasites.	• Describe trophozoite stages • Describe cyst stages • Describe egg stages • Describe larval stages • Differentiate diagnostic stages	Projector, Parasitology atlas, Charts	• Identify ova in stool samples • Identify cysts in stool samples • Recognize larval stages	Guide students to: • Identify ova in stool samples • Identify cysts in stool samples • Recognize larval stages	Stool samples, Saline and iodine, Microscope, Slides Cover slips
General Objective 4.0: Understand parasite life cycles						
9-10	4.1 Explain direct life cycles. 4.2 Explain indirect life cycles. 4.3 Discuss intermediate hosts 4.4 Outline transmission	• Explain direct life cycles • Explain indirect life cycles • Discuss	Charts, WHO control manuals, Textbooks			

	routes.	intermediate hosts • Explain transmission routes				
General Objective 5.0: Know modes of parasite transmission						
11-13	5.1 Describe food-borne transmission. 5.2 Describe vector-borne transmission. 5.3 Describe water-borne infections. 5.4 Describe zoonotic transmission. 5.5 Describe hygiene practices.	• Describe food-borne transmission • Describe vector-borne transmission • Describe water-borne infections • Describe zoonotic transmission • Describe hygiene practices	WHO epidemiology reports, Charts	• Demonstrate hygiene practices	Guide students to: • Demonstrate hygiene practices	Handwash Sanitisers Water sinks Running water
General Objective 6.0: Apply Prevention and Control Measures						
14-15	6.1 Explain chemotherapeutic principles. 6.2 Describe vector control strategies. 6.3 Outline community prevention programmes.	• Explain chemotherapeutic principles • Describe vector control strategies • Outline community prevention programmes	National malaria control guidelines, WHO manuals, Flip charts, Computers etc			
Course Assessment Course Work: 10% Tests: 10% Practical: 40% Examination: 40% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: HUMAN ANATOMY AND PHYSIOLOGY I	**COURSE CODE: IDV 116**	**CREDIT UNIT: 3**
	CONTACT HOURS: 3 Hours/Week	**THEORETICAL: 2 Hours/Week**
YEAR: I SEMESTER: I	**PRE-REQUISITE:**	**PRACTICAL: 1 Hour/Week**
GOAL: This course is designed to equip students with comprehensive knowledge and skills on the structure and function of the human body systems.		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand human anatomy and physiology;
2.0 Know the various systems of the Human body;
3.0 Understand the Cardiovascular system;
4.0 Understand the skeletal system;
5.0 Understand the respiratory system;
6.0 Understand lymphatic system.

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: HUMAN ANATOMY AND PHYSIOLOGY I	COURSE CODE: IDV 116	CREDIT UNIT: 3
	CONTACT HOURS: 3 Hours/Week	THEORETICAL: 2 Hours/Week
YEAR: I SEMESTER: I	PRE-REQUISITE:	PRACTICAL: 1 Hour/Week
COURSE SPECIFIFCATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to enable students acquire comprehensive knowledge of the structure and function of the human body systems relevant to infectious disease pathogenesis, immune response, and vaccine administration.		
General Objective 1.0: Understand structural organization of the human body.		

THEORETICAL CONTENT				PRACTICAL CONTENT Compulsory		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-2	1.1 Define Anatomy. 1.2 Define Physiology. 1.3 State the relationship between Anatomy and Physiology. 1.4 Explain the concepts: i. Anatomical position, ii. Anatomical planes iii. Anatomical terms of movements iv. Body cavities 1.5 Describe the following terms: Cell, Tissue, organs, systems.	• Explain anatomy, physiology and the relationship between them • Explain the concepts: - Anatomical position, - Anatomical planes - Anatomical terms of movements - Body cavities • Explain the following terms: - Cell - Tissue - Organs - Systems	Relevant Publications Audio-visuals (video, compact disc, DVD, Internet) Books etc	• Identify: - Cell - Tissue - Organs - Systems • Demonstrate - Anatomical position - Anatomical Planes - Body cavities	Guide students to: • Identify cell, tissue, organs and systems • Demonstrate anatomical position, anatomical planes and body cavities	Models, Charts Microscopes etc

General Objective 2.0: Know the various systems of the Human body.						
3-4	2.1 Define a system. 2.2 List the systems of the Human Body. 2.3 Describe the systems mentioned in 2.2 above.	• Explain system • List the systems of the Human Body i.e. - Musculo Skeletal System - Respiratory System - Cardiovascular System - Genito-Urinary System - Digestive System - Male - Reproductive - System - Female Reproductive - System - Special Senses - Endocrine - System - Integumentary - System - Nervous System Lymphatic - System etc.	Relevant Publications Audio-visuals (video, compact disc, DVD, Internet), Books etc			
General Objective 3.0: Understand the Cardiovascular system.						
5-7	3.1 Define the cardiovascular system. 3.2 State the functions of	• Explain cardiovascular system.	Relevant Publications, Audio-visuals	• Identify the cardiovascular system using	Guide students to: • Identify the cardiovascular	Models, Charts, Audio visuals etc

	cardiovascular system 3.3 List the organs/components of the cardiovascular system. 3.4 Explain the classification of the blood vessels. 3.5 Describe the human heart. 3.6 Explain the types of blood circulation. 3.7 Describe the human blood. 3.8 Describe the body Fluids. 3.9 Explain the types of blood cells and their functions.	• Explain the functions of cardiovascular System • Explain the organs/components of the cardiovascular system: blood vessels, heart etc. • Explain the human heart. • Explain the classification the blood vessels. • Describe the human heart. • Explain types of blood circulation. - Arterial - Venous - Coronary Pulmonary. • Explain the human blood. • Explain the body Fluids. • Explain the types blood cells and their functions - Red Blood Cells (RBC) - White Blood	(video, compact disc, DVD, Internet), Books etc	models and charts • Draw a well labelled human heart.	system using models and charts • Draw and Label the human heart.	

		Cells (WBC) - Platelets etc.				
General Objective 4.0: Understand the skeletal system.						
8-9	4.1 Define skeletal systems. 4.2 Describe the types of skeletal systems. 4.3 State the functions of skeletal system. 4.4 Classify the various bones of human skeletal system. 4.5 Describe cavities of human body 4.6 Describe pathophysiology of skeletal system disorders.	• Explain skeletal systems • Describe the types of skeletal systems • State the functions of skeletal system. • Explain the various bones of the human skeletal system. • Explain the cavities of the Human body: - Cranial cavity - Thoracic - pelvic cavity - Abdominal cavity etc. • Describe pathophysiology of skeletal system disorders (i.e., Septic Arthritis, Osteomyelitis, Osteoarticular Tuberculosis)	Relevant Publications, Audio-visuals (video, compact disc, DVD, Internet), Books etc	• Identify skeletal systems using charts and models • Draw and Label the Human Skeletal System.	Guide students to: • Demonstrate the skeletal systems using charts and models • Draw and Label the Human Skeletal System.	Explain the Human Skeletal System.
General Objective 5.0: Understand the respiratory System						
	5.1 Define respiration and respiratory system.	• Explain Respiration.	Relevant Publications	• Identify organs of the respiratory	Guide students to:	Charts Models

10-12	5.2 List the organs of the respiratory system. 5.3 State the functions of the respiratory organs. 5.4 Explain the mechanism of respiration. 5.5 Describe pathophysiology of respiratory disorders.	• Explain the Organs of the Respiratory System. • Explain the functions of the Respiratory System. • Explain the Mechanism of Respiration. • Describe pathophysiology of respiratory disorders. (i.e., Pneumonia, Tuberculosis, Influenza)	Audio-visuals (video, compact disc, DVD, Internet), Books	system	• Identify organs of the respiratory system	
General Objective 6.0: Understand lymphatic System						
13-15	6.1 Define Lymphatic system. 6.2 List the organs of the Lymphatic System. 6.3 State the functions of the Lymphatic System. 6.4 Explain composition of Lymph. 6.5 Explain the components of the Lymphatic System 6.6 Explain organs associated with lymphatic system	• Explain Lymphatic system Explain the Organs of the Lymphatic System. • Explain the functions of the Lymphatic System. • Explain composition of Lymph. • Explain the Components of the Lymphatic System • Explain organs	Relevant Publications Audio-visuals (Video, compact disc, DVD, Internet) Books etc	• Identify organs of the lymphatic system and their components using charts and models	Guide students to: • Identify organs of the lymphatic system using charts and models	Charts Models Audio-visuals

	6.7 Describe pathophysiology of lymphatic disorders.	associated with lymphatic system • Describe pathophysiology of lymphatic disorders. (i.e., Lymphatic Filariasis)				

Course Assessment

Course Work:	10%
Tests:	10%
Practical:	40%
Examination:	40%
Total:	100%

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASE AND VACCINALLOGY		
COURSE: INTRODUCTION TO PRIMARY HEALTH CARE (PHC) AND UNIVERSAL HEALTH COVERAGE (UHC)	**COURSE CODE: IDV 117**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 hours/week	**THEORETICAL: 1 hour/week**
YEAR: I SEMESTER: I	**PRE-REQUISITE: -**	**PRACTICAL: 1 hour/week**
GOAL: This course is designed to enable students acquire basic knowledge and skills on Primary Health Care (PHC) and Universal Health Coverage (UHC)		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand the concept of health and healthcare system;
2.0 Know the historical background, principles, concepts and components of PHC;
3.0 Know the structure and health needs of the community;
4.0 Know the roles of various cadre of health workers in PHC facilities;
5.0 Understand the concept of community diagnosis and situation analysis;
6.0 Know the process and resources required for effective community mobilization and participation in health care activities;
7.0 Understand the concept of Universal Health Coverage (UHC)

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASE AND VACCINALLOGY						
COURSE: INTRODUCTION PRIMARY HEALTH CARE (PHC)			**COURSE CODE: IDV 117**		**CREDIT UNIT: 2**	
			CONTACT HOURS: 2 hours/week		**THEORETICAL: 1 hour/week**	
YEAR: I SEMESTER: I			**PRE-REQUISITE: 0**		**PRACTICAL: 1 hour/week**	
COURSE SPECIFIFCATION: THEORETICAL AND PRACTICAL						
GOAL: This course is designed to enable students acquire basic knowledge and skills on Primary Health Care (PHC) and Universal Health Coverage (UHC)						
General Objective 1.0: Understand the concept of health and healthcare system						
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-2	1.1 Define health. 1.2 Explain the components of health. 1.3 Explain the significance of health. 1.4 Explain healthcare system. 1.5 Explain the levels of healthcare.	• Define health • Explain the components of health • Explain the significance of health • Explain healthcare system • Explain the levels of healthcare	Lecture notes Charts, film Textbooks Standing order White board /Markers Multimedia projector/Laptops			
General Objective 2.0: Know the historical background, principles, concepts and components of PHC						
3-4	2.1 Define Primary Health Care (PHC). 2.2 Discuss the historical development, concepts and principles of PHC. 2.3 List the components of PHC. 2.4 Explain an organogram of the PHC set up in Nigeria.	• Prepare lecture notes and slides to: define Primary Health Care (PHC). • Discuss the historical development, concepts and principles of PHC. • List the components of PHC. • Explain an organogram	Charts, film Textbooks, Standing order White board, Markers, Multimedia, projector, Laptops, PHC centres PHC organogram chart			

	2.5 Describe the operational level of PHC at the Local Government Areas in Nigeria. 2.6 Explain the roles, functions and responsibilities of the IDV professionals in PHC setting.	of the PHC set up in Nigeria. • Describe the operational level of PHC at the Local Government Areas in Nigeria. • Explain the roles, functions and responsibilities of the IDV professionals in PHC settings	NPHCDA Manual for PHC			
General Objective 3.0: Know the structure and health needs of the Community.						
5-6	3.1 Define community family pattern health pattern 3.2 Explain types of community. 3.3 Describe a typical community with emphasis on the leadership styles and decision- making structure. 3.4 State functions of a community. 3.5 Describe the approaches to identify health needs of a community 3.6 Explain the approach to determine the health needs of a community through survey.	• Define Community: - Family pattern - Health patter • Explain types of community • Describe a typical community with emphasis on the leadership styles and decision- making structure • State functions of a community. • Describe the approaches to identify health needs of the community (Survey, review of existing clinical data) • Explain the approach	Charts/ film of family patterns, Community Health Records, White board/Marker, Identified Community Sample of community need survey and diagnosis			

	3.7 Explain the importance of survey to identify community health needs	to determine the health needs of a community through survey. • Explain the importance of survey to identify community health needs				
General Objective 4.0: Know the roles of various cadres of health workers in PHC facilities.						
7-8	4.1 List the various categories of health workers within the PHC system in Nigeria e.g. Midwives. Public Health Nurses, Community Health Officers, etc. 4.2 Describe the role of each category of health worker listed in 4.1. 4.3 Explain the collaborative roles of the P.H.C team. 4.4 State the roles of IDV professionals in a PHC setting	• Enumerate the various categories of health workers within the PHC system in Nigeria e.g. Midwives. Public Health Nurses, Community Health Officers, etc. • Describe the role of each category of health worker listed in 4.1. • Explain the collaborative roles of mthe P.H.C team. • State the roles of IDV professionals in a PHC setting	Charts, Films, PHC Clinics, Homes A typical community.	• Write a technical report on a visitation to PHC facility	• Organise visit to a typical PHC	
General Objective 5.0: Understand the concept of community diagnosis and situation analysis						
9-10	5.1 Explain the terms: i. Community diagnosis, ii. Situation analysis 5.2 Explain the role of community diagnosis and situation analysis in	• Explain the terms: - Community diagnosis, - Situation analysis • Explain the role of community diagnosis and situation analysis	• Charts, films, PHC clinics & centres, Typical community, Tools for Situation Analysis	• Conduct community diagnosis. • Demonstrate concept of: - Stakeholder mapping	Guide students to: • Conduct community diagnosis • Perform stakeholder mapping,	Map, Data Collection tools, Audio recorder Writing materials etc

	PHC 5.3 List the methods and steps used in community diagnosis 5.4 Describe the instruments and steps used in situation analysis.	in PHC • List the methods and steps used in community diagnosis • Describe the instruments and steps used in situation analysis.	.	- Stakeholder engagement, - Community entry, - Community mobilisation - Situation analysis	stakeholder engagement, community entry, community mobilisation, situation analysis	
General Objective 6.0: Know the process and resources required for effective community mobilization & participation in health care activities.						
11-13	6.1 Define community mobilization, participation, advocacy and group dynamics 6.2 Explain the concept of community mobilization and participation. 6.3 Explain the rationale for community mobilization and participation in Primary Health Care. 6.4 Describe advocacy process in community mobilization and participation. 6.5 Describe the steps involved in community mobilization 6.6 Enumerate the various committees involved in community mobilization and	• Define Community Mobilization, Participation, Advocacy and Group dynamics • Explain the concept of community mobilization and participation. • Explain the rationale for community mobilization and participation in Primary Health Care. • Describe advocacy process in community mobilization & participation. • Describe the steps involved in community mobilization • Enumerate the various committees involved in	Charts, Film, Typical Community set-up, Vehicle, Multimedia projector, e-learning Resources			

	participation 6.7 Explain the composition and functions of the various committees involved in community mobilization and participation 6.8 Describe the use of group dynamics in Primary Health Care.	community mobilization and participation • Explain the composition and functions of the various committees involved in community mobilization and participation • Describe the use of group dynamics in Primary Health Care.				
General Objective 7.0: Understand the concept of Universal Health Coverage (UHC)						
14-15	7.1 Explain the concept of Universal Health Coverage 7.2 Explain the historical evolution of UHC 7.3 Describe the core objectives of UHC 7.4 Explain the rational for UHC 7.5 Explain the factors that influence UHC	• Explain the concept of Universal Health Coverage • Explain the historical evolution of UHC • Describe the core objectives of UHC • Explain the rational for UHC • Explain the factors that influence UHC	Charts, Film Typical Community set-up, Vehicle Multimedia projector E-learning Resources etc			
Course Assessment Course Work: 10% Tests: 10% Practical: 40% Examination: 40% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA (ND) IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE TITLE: IMMUNITY AND IMMUNIZATION	**COURSE CODE: IDV 118**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2hours/week	**THEORETICAL: 1hour/week**
YEAR: I SEMESTER: I	**PRE-REQUISITE: 0**	**PRACTICAL: 1hour/week**
GOAL: This course is designed to equip students with knowledge and skills on immunization in infectious diseases.		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand immunity and immunization in infectious diseases;
2.0 Understand the general nature of immune system;
3.0 Understand antigen-antibody reaction;
4.0 Understand hypersensitivity reaction;
5.0 Know the significance of immunity and immunization in infectious diseases;
6.0 Understand basics of herd immunity

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASE AND VACCINALLOGY					
COURSE TITLE: Immunity and Immunization		**COURSE CODE: IDV 118**		**CREDIT UNIT: 2**	
		CONTACT HOURS: 2 hour/week		**THEORETICAL: 1 hour/week**	
YEAR: 1 SEMESTER: 1		**PRE-REQUISITE: 0**		**PRACTICAL: 1 hour/week**	
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL					
GOAL: This course is designed to equip students with knowledge and skills on immunization in infectious diseases.					
General Objective 1.0: Understand immunity and immunization in infectious diseases					
THEORETICAL CONTENT				**PRACTICAL CONTENT**	
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1	1.1 Define the following terms; i. Immunology ii. Immunity iii. Immunization iv. Herd Immunity 1.2 Describe method of acquiring immunity 1.3 Explain factors affecting resistance to infectious diseases. 1.4 Outline factors that improve / suppress one's immunity to infectious diseases	• Define the following terms; - Immunology - Immunity - Immunization - Herd Immunity • Describe method of acquiring immunity • Explain factors affecting resistance to infectious diseases. • Outline factors that improve / suppress one's immunity to infectious diseases	Textbooks, Models, Lecture note etc			
General Objective 2.0: Understand the general nature of immune system						
2 - 3	2.1 Describe the structure and functions of the immune system 2.2 Explain the terms natural and artificial immunity.	• Describe the structure and functions of the immune system • Explain the terms	Textbooks Projectors Public Addressing systems Pictorials, Charts			

	2.3 Explain the terms antigen, antibody and other components of the immune system. 2.4 Explain the basic structure of antibodies.	natural and artificial immunity. • Explain the terms antigen, antibody and other components of the immune system. • Explain the basic structure of antibodies.				
General Objective 3.0: Understand antigen-antibody reaction.						
4 - 7	3.1 Explain antigen-antibody reaction 3.2 Explain the various types of antigen-antibody reactions (i.e. Precipitation, neutralisation, agglutination, complement fixation, Immunoassays) 3.3 Describe the factors affecting antigen-antibody reactions. 3.4 Explain the ABO/Rh blood group 3.5 Explain the rhesus factor and rhesus incompatibilities. 3.6 Explain the outcome of antigen-antibody reactions.	• Explain antigen-antibody reaction • Explain the various types of antigen-antibody reactions (i.e. Precipitation, neutralisation, agglutination, complement fixation, Immunoassays) • Describe the factors affecting antigen-antibody reactions. • Explain the ABO/Rh blood group • Explain the rhesus factor and rhesus incompatibilities. • Explain the outcome of antigen-antibody reactions,	Textbooks Projectors Public Addressing systems Pictorials/Charts	• Carry out ABO/Rh grouping	Guide students to: • Carry out ABO/Rh grouping	ABO Anti sera Tiles Stop watch Capillary tube EDTA Cotton wool Methylated spirit Syringes
General Objective 4.0: Understand hypersensitivity reaction.						

8	3.1 Explain hypersensitivity reactions. 3.2 Explain the various types of hypersensitivity reactions (delayed, immediate, etc.) and allergic reactions. 3.3 Explain the outcome of hypersensitivity reactions, 3.4 Explain health implication of hypersensitivity reactions.	• Explain hypersensitivity reactions. • Explain the various types of hypersensitivity (delayed, immediate, etc.) and allergic reactions. • Explain the outcome of hypersensitivity reactions. • Explain health implication of hypersensitivity reactions.	Textbooks, Projectors, Public Addressing systems, Pictorials, Charts etc			
General Objective 5.0: Know the significance of immunity and immunization in infectious diseases.						
9 - 11	5.1 Explain the concept of innate and acquired immunity 5.2 Discuss the utility of immunosuppressives 5.3 Describe immunization campaign, planning and publicity. 5.4 Describe immunization schedule in Nigeria (EPI) 5.5 Describe immunization sessions	• Explain the concept of innate and acquired immunity • Discuss the utility of immunosuppressives. • Describe immunization campaign, planning and publicity. • Describe immunization schedule in Nigeria • Describe immunization sessions	Lecture notes, Textbooks, Immunization work plan, Immunisation schedule, Charts, Vaccination, cards etc	• Demonstrate how to administer vaccines. (Intramuscular (IM), Subcutaneous, nasal, intradermal (ID) and oral)	Guide students to: • Demonstrate how to administer vaccines. (Intramuscular (IM), Subcutaneous, intradermal (ID) nasal and Oral)	Immunization work plan, Injections Charts, Vaccination cards, Vaccine carrier Cold box Dummy, Simulation videos clips Mannequin
General Objective 6.0: Understand the basics of herd immunity.						

12-15	6.1 Define herd immunity 6.2 Explain the relationship between vaccine coverage and herd immunity 6.3 Describe the importance of herd immunity.	Define herd immunity Explain the relationship between vaccine coverage and herd immunity Describe the importance of herd immunity.	Lecture notes Textbooks Immunization work plan. Immunisation schedule Charts			
Course Assessment Course Work: 10% Tests: 10% Practical: 40% Examination: 40% Total: 100%						

YEAR I SEMESTER II COURSES

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: HUMAN ANATOMY AND PHYSIOLOGY II	**COURSE CODE: IDV 121**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 hours/week	**THEORETICAL:1 hour/week**
YEAR: I SEMESTER: II	**PRE-REQUISITE: ANATOMY AND PHYSIOLOGY I**	**PRACTICAL: 1 hour/week**
GOAL: This course is designed to equip students with basic knowledge and skills on human anatomy and physiology		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand the digestive System;
2.0 Understand the urinary System;
3.0 Understand the reproductive system;
4.0 Understand the endocrine system.
5.0 Understand the muscular system.
6.0 Understand integumentary system.
7.0 Understand the nervous system.
8.0 Understand the sense organs.

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: HUMAN ANATOMY AND PHYSIOLOGY II	COURSE CODE: IDV 121	CREDIT UNIT: 2
	CONTACT HOURS: 2 hours/week	THEORETICAL: 1 hour/week
YEAR: I SEMESTER: II	PRE-REQUISITE: ANATOMY AND PHYSIOLOGY I	PRACTICAL: 1 hour/week
COURSE SPECIFIFCATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to equip students with basic knowledge and skills on human anatomy and physiology		
General Objective 1.0: Understand the digestive system		

THEORETICAL CONTENT				PRACTICAL CONTENT		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-2	1.1 Define the digestive system. 1.2 Describe the organs of the digestive System 1.3 State the functions of the digestive system, e.g – ingestions, propulsion, mastication, Absorption, Elimination etc. 1.4 Describe the mechanism of food digestion and absorption with associated enzymes 1.5 Describe pathophysiology of digestive disorders .	• Define the digestive system • Describe the organs of the digestive System • State the functions of the system, e.g - Absorption, Elimination etc. • Describe the mechanism of food digestion and absorption with associated enzymes • Describe pathophysiology of digestive disorders (i.e., Gastro enteritis, Colitis, cholera)	Text books, Anatomical models, Charts Projectors White Board Posters	• Identify organs in digestive system	Guide students to: • Identify organs in digestive system	Anatomical charts and models Posters
General Objective 2.0: Understand the urinary system						

3	2.1 Define the urinary system. 2.2 Describe the functional anatomy of the urinary System m 2.3 Describe pathophysiology of urinary tract disorder	• Define the urinary • system • Describe the functional anatomy of the urinary System • Describe pathophysiology of urinary tract disorders [i.e., Urinary Tract Infection (UTI)]	Audio-Visual, Charts Textbooks, Anatomical models, posters	• Identify organs in urinary system	Guide students to: • Identify organs in urinary system	Anatomical charts and models, Posters
General Objective 3.0: Understand the reproductive system						
4-5	3.1 Define the rnjjieproductive system 3.2 Describe the functional anatomy of the male and female reproductive systems 3.3 Describe pathophysiology of the male and female reproductive system disorders	• Define the Reproductive system • Describe the functional anatomy of the male and female reproductive systems • Describe pathophysiology of the male and female reproductive system disorders [i.e., Sexually Transmitted Infections (STIs),]	Audio-Visual, Charts, Textbooks, Anatomical models, posters etc	• Identify organs in the male and female reproductive systems	Guide students to: • Identify organs in the male and female reproductive systems	Anatomical charts and models, Posters
General Objective 4.0: Understand the endocrine system						
6-7	4.1 Define the endocrine system 4.2 Describe the	• Define the endocrine system	Audio-Visual, Charts, Textbooks,	• Identify organs in endocrine system	Guide students to: Identify organs in	Anatomical charts and models, Posters

	functional anatomy of the endocrine systems 4.3 Differentiate between endocrine and exocrine gland with examples 4.4 Describe pathophysiology of the endocrine system disorders	• Describe the functional anatomy of the endocrine systems • Differentiate between endocrine and exocrine gland with examples • Describe pathophysiology of the endocrine system disorders.	Anatomical models, posters		endocrine system	
General Objective 5.0: Understand the muscular System						
8-9	5.1 Define muscular system 5.2 Describe the functional anatomy of the muscular systems 5.3 Describe pathophysiology of the muscular system disorders	• Define muscular system • Describe the functional anatomy of the muscular systems • Describe pathophysiology of the muscular system disorders i.e. infectious myositis	Audio-Visual, Charts Textbooks, Anatomical models, posters	• Identify organs in muscular system	Guide students to: • Identify organs in muscular system	Anatomical charts and models Posters
General Objective 6.0: Understand the integumentary System						
	6.1 Define the integumentary system,	• Define the integumentary system	Audio-Visual, Charts Textbooks,	• Identify organs in integumentary system	Guide students to: • Identify organs in integumentary	Anatomical charts and models, Posters

10-11	6.2 Describe the functional anatomy of the integumentary systems 6.3 Describe pathophysiology of the integumentary system disorders.	• Describe the functional anatomy of the integumentary systems. • Describe pathophysiology of the integumentary system disorders	Anatomical models, posters		system	
General Objective 7.0: **Understand the nervous System**						
12-13	7.1 Define the nervous system. 7.2 Describe the functional anatomy of the nervous systems 7.3 Describe pathophysiology of the nervous system disorders.	• Define the nervous system • Describe the functional anatomy of the nervous systems • Describe pathophysiology of the nervous system disorders [i.e. meningitis]	Audio-Visual, Charts Textbooks, Anatomical models, posters	• Identify organs in nervous system	Guide students to: • Identify organs in nervous system	Anatomical charts and models Posters
General Objective 8.0: Understand the sense organs						
14-15	8.1 Describe the structures of the sense organs. 8.2 Describe the functional anatomy of the sense systems. 8.3 Describe pathophysiology of the sense system disorders	• Describe the structures of the sense organs • Describe the functional anatomy of the sense systems • Describe pathophysiology of the sense system	Audio-Visual, Charts Textbooks, Anatomical models, posters	• Identify and describe the sense organs	Guide students to: • Identify and describe the sense organs	Anatomical charts and models, Posters etc

		disorders {i.e. infectious conjunctivitis, otitis media				

Course Assessment

Course Work: 10%
Tests: 10%
Practical: 40%
Examination: 40%
Total: 100%

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: IMMUNOLOGY AND VACCINE TRIALS	**COURSE CODE: IDV 122**	**CREDIT UNIT: 3**
	CONTACT HOURS: 3 hours/week	**THEORETICAL: 2 hours/week**
YEAR: I SEMESTER: II	**PRE-REQUISITE:**	**PRACTICAL: 1 hour/week**
GOAL: This course is designed to equip students with a sound understanding of immunological principles and the processes involved in vaccine development and clinical trials to support effective disease prevention and control.		

GENERAL OBJECTIVES:

On completion of this course, the students should be able to:

1.0 Understand immune system components;
2.0 Know types of immunity;
3.0 Understand antigen–antibody interactions;
4.0 Understand vaccine principles;
5.0 Know vaccine types and design;
6.0 Understand stages of vaccine development;
7.0 Know pre-clinical stage of vaccine trial;
8.0 Understand vaccine clinical trial phases;
9.0 Understand ethical considerations in vaccine trials;
10.0 Understand vaccine safety monitoring.

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: IMMUNOLOGY AND VACCINE TRIALS	COURSE CODE: IDV 122	CREDIT UNIT: 3
	CONTACT HOURS: 3 hours/week	THEORETICAL: 2 hours/week
YEAR: I SEMESTER: II	PRE-REQUISITE:	PRACTICAL: 1 hour/week
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to equip students with a sound understanding of immunological principles and the processes involved in vaccine development and clinical trials to support effective disease prevention and control.		
General Objective 1.0: Understand immune system components		

THEORETICAL CONTENT				PRACTICAL CONTENT		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-2	1.1 Define immunology and related terms 1.2 Describe components of the immune system 1.3 Differentiate innate and adaptive immunity 1.4 Explain roles of lymphoid organs 1.5 Describe functions of immune cells	• Explain immunology and important terms • Describe components of the immune system • Differentiate innate and adaptive immunity • Explain roles of lymphoid organs • Describe functions of immune cells	Charts and diagrams, Multimedia projector, Immunology textbooks. Lecture Notes etc			
General Objective 2.0: Know types of immunity						
3-4	2.1 Explain active immunity 2.2 Explain passive immunity 2.3 Explain natural immunity 2.4 Explain artificial	• Explain active immunity • Explain passive immunity • Explain natural	Charts, Lecture Notes textbooks, projector, computer			

	immunity 2.5 Describe herd immunity	immunity • Explain artificial immunity • Describe herd immunity concept				
General Objective 3.0: Understand antigen–antibody interactions						
5-6	3.1 Define Antibody and antigen 3.2 Describe the classes of Antibody (IgG, IgM, IgA, IgE, IgD) 3.3 Describe antigen structure 3.4 Explain antigen–antibody reactions	• Explain Antibody and antigen • Describe classes of Antibody (IgG, IgM, IgA, IgE, IgD) • Describe antigen structure • Explain antigen–antibody reactions	Charts, Immunology atlas, Multimedia presentation	• Perform simple serological test	Guides students to: • Perform simple serological test	ELISA kit (demonstration) Test sera Laboratory reagents PPE
General Objective 4.0: Understand vaccine principles						
7-8	4.1 Define vaccines 4.2 Explain how vaccines stimulate immunity **4.3** Describe the Principles of vaccination [i.e Immunogenicity/efficacy, Immunological memory, Antigen specificity, Safety (attenuation/inactivation), Booster effect, Herd immunity, Proper route and timing, Cold chain maintenance etc].	• Explain vaccines • Explain how vaccines stimulate immunity • Describe the Principles of vaccination [i.e Immunogenicity/efficacy, Immunological memory, Antigen specificity, Safety (attenuation/inacti	Vaccine carrier, Cold box, National immunization schedule charts	• Demonstrate proper vaccine handling • Monitor vaccine vial status	Guides students to: • Demonstrate proper vaccine handling • Monitor vaccine vial status	Vaccine vial monitor (VVM), Cold chain equipment, Temperature log sheets

		vation), Booster effect, Herd immunity, Proper route and timing, Cold chain maintenance etc.				
General Objective 5.0: Know vaccine types and design						
9-10	5.1 Classify different vaccine types (Live attenuated, Inactivated (killed) vaccines, Subunit, Toxoid vaccines, Conjugate, Recombinant, mRNA) 5.2 Describe characteristics of each vaccine type. 5.3 Explain principles of vaccine design. 5.4 Explain the components of a vaccine formulation 5.5 Explain factors affecting vaccine effectiveness	• Classify different vaccine types • Describe characteristics of each vaccine type • Explain principles of vaccine design • Explain the components of a vaccine formulation • Explain factors affecting vaccine effectiveness	Charts and vaccine classification tables, Multimedia projector, Sample vaccine labels (expired vials for demonstration), WHO vaccine manuals, Immunology textbooks			
General Objective 6.0: Understand stages of vaccine development						
11-12	6.1 Enumerate the stages of vaccine development 6.2 Explain the stages of vaccine development 6.3 Describe the pre- clinical and clinical testing processes for vaccine safety and efficacy	• Enumerate the stages of vaccine development • Explain the stages of vaccine development • Describe the pre-clinical and clinical testing	Multimedia projector, WHO vaccine development manuals, Laboratory animal ethics guidelines, Sample of			

		processes for vaccine safety and efficacy	Investigational New Drug (IND) documentation templates, Access to journals (e.g., PubMed)			
General Objective 7.0: Know pre-clinical stage of vaccine trial						
11-12	7.1 Define pre-clinical stage of vaccine trial 7.2 Explain antigen identification and selection methods 7.3 Explain basic in vitro immunological assays (e.g., ELISA) 7.4 Describe antibody titre results from laboratory testing 7.5 Explain animal model experimentation procedures	• Define pre-clinical stage of vaccine trial • Explain antigen identification and selection methods • Explain basic in vitro immunological assays (e.g., ELISA) • Describe antibody titre results from laboratory testing • Explain animal model experimentation procedures	Multimedia projector, WHO vaccine development manuals, Laboratory animal ethics guidelines, Sample of Investigational New Drug (IND) documentation templates, Access to journals (e.g., PubMed)			
General Objective 8.0: Understand vaccine clinical trial phases						
11-12	8.1 Define clinical trials 8.2 Differentiate clinical trial phases 8.3 Describe trial outcome	• Explain clinical trials • Explain clinical trial phases	Clinical trial flowcharts, Sample case report forms	• Draft simple trial protocol • Record trial data • Analyse trial data	Guides students to: • Draft simple trial protocol	Sample protocol templates, Data collection forms, Calculator,

	measures	• Explain trial outcome measures	(CRFs), WHO clinical trial guidelines		• Analyse trial data	Computer
General Objective 9.0: Understand ethical considerations in vaccine trials						
13	9.1 Define informed consent 9.2 Explain process of obtaining an informed consent 9.3 Discuss ethical approval procedures 9.4 Discuss participant protection measures 9.5 Explain role of ethics committee	• Define informed consent • Explain process of obtaining an informed consent • Describe ethical approval procedures • Discuss participant protection measures • Explain role of ethics committees	Sample consent forms Sample, templates, Case study materials			
General Objective 10.0: Understand vaccine safety monitoring						
14-15	10.1 Define Adverse Events Following Immunization (AEFI) 10.2 Explain pharmacovigilance 10.3 Explain signal detection methods 10.4 Describe safety data reporting 10.5 Discuss risk communication 10.6 Describe post-marketing surveillance	• Define Adverse Events Following Immunization (AEFI) • Explain pharmacovigilance • Explain signal detection methods • Describe safety data reporting	Textbooks Projectors Lecture notes White Board Pharmacovigilance form			

		• Explains importance of risk communication • Describe post-marketing surveillance				
Course Assessment Course Work: 10% Tests: 10% Practical: 40% Examination: 40% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: INTRODUCTION TO INFECTIOUS DISEASES AND VACCINOLOGY II	**COURSE CODE: CODE: IDV 123**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 Hour/Week	**THEORETICAL: 1 Hour/Week**
YEAR: I SEMESTER: II	**PRE-REQUISITE: INTRODUCTION TO INFECTIOUS DISEASES AND VACCINOLOGY I (IDV 112)**	**PRACTICAL: 1 Hour/Week**
GOAL: This course is designed to build students' competencies in infectious disease epidemiology, diagnosis, outbreak response, immunization, vaccine logistics, safety, and control strategies.		
GENERAL OBJECTIVES On completion of this course, the students should be able to: 1.0 Know the principles of infectious disease epidemiology 2.0 Understand basic laboratory diagnostic procedures 3.0 Know basic principles of outbreak response 4.0 Know immunization programme operations; 5.0 Understand vaccine storage and cold chain management; 6.0 Understand Monitoring and reporting of Adverse Events Following Immunization (AEFI).		

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: INTRODUCTION TO INFECTIOUS DISEASES AND VACCINOLOGY II	**COURSE CODE: IDV 123**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 Hours/Week	**THEORETICAL: 1 Hour/Week**
YEAR: I SEMESTER: II	**PRE-REQUISITE: IDV 112 INTRODUCTION TO INFECTIOUS DISEASES AND VACCINOLOGY I**	**PRACTICAL: 1 Hour/Week**
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to build students' competencies in infectious disease epidemiology, diagnosis, outbreak response, immunization, vaccine logistics, safety, and control strategies.		
General Objective 1.0: Know principles of infectious disease epidemiology		

THEORETICAL CONTENT				**PRACTICAL CONTENT**		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-2	1.1 Define epidemiology . 1.2 Explain epidemiological triad (Agent–Host–Environment). 1.3 Explain measures of disease frequency (incidence, prevalence, mortality rate, Case fatality Rate (CFR) etc). 1.4 Explain basic reproductive number (R_0)	• Define epidemiology • Explain epidemiological triad (Agent–Host–Environment) • Explain measures of disease frequency [incidence, prevalence, mortality rate, Case fatality Rate (CFR) etc] • Explain basic reproductive number (R_0)	Lecture notes, sides, Epidemiology charts, WHO reports, Calculators, Graph sheets, Sample surveillance data Laptops Projector		n	
General Objective 2.0: Understand basic laboratory diagnostic procedures						
3-4	2.1 Describe specimen collection procedures 2.2 Highlight basic laboratory equipment/apparatuses and procedures relevant to	• Describe specimen collection procedures • Highlight basic laboratory equipment/apparatuses	Laboratory charts, Sample request forms, WHO laboratory manuals, Textbooks	• Perform specimen Collection and handling • Identify laboratory equipment/apparat	Guide students to: • Specimen Collection and handling	Prepared slides, RDT kits (demo), PPE, Biohazard bags, Laboratory

	infectious diseases 2.3 Explain Rapid Diagnostic Tests (RDTs)	and procedures relevant to infectious diseases • Explain Rapid Diagnostic Tests (RDTs)		us • Carry out tests using RDT kits	• Identify laboratory equipment/apparatus • Carry out tests using RDT kits	forms
General Objective 3.0: Know basic principles of outbreak response						
5-7	3.1 Define disease outbreak. 3.2 Outline steps of outbreak investigation. 3.3 Explain case definition 3.4 Explain the roles of surveillance system in outbreak investigation.	• Define disease outbreak • Outline steps of outbreak investigation • Explain case definition • Explain the role of surveillance system in outbreak investigation	Surveillance manuals, IDSR guidelines, Sample outbreak reports	• Develop line list, define cases, • Simulate outbreak response • Construct epidemic curve,	Guide students to: • Develop line list, define cases, • Simulate outbreak response • Construct epidemic curve,	IDSR guidelines, Outbreak scenario sheets, Line-list templates, Graph sheets High-visibility Jacket
General Objective 4.0: Know immunization programme operations						
8-9	4.1 Explain components of immunization programme 4.2 Describe routine versus supplemental immunization 4.3 Explain Expanded Programme on Immunization (EPI) 4.4 Explain immunization schedule	• Explain components of immunization programme • Describe routine vs supplemental immunization • Explain Expanded Programme on Immunization (EPI) • Explain immunization schedule	National immunization schedule, EPI charts, WHO immunization guidelines	• Fill immunization register, • Simulate client immunization documentation	Guide students to: • Fill immunization register, • Simulate client immunization documentation	Immunization cards, EPI register, National schedule charts, Mock clients
General Objective 5.0: Understand vaccine storage and cold chain management						

10-12	5.1 Define cold chain 5.2 Describe cold chain equipment 5.3 Explain vaccine storage temperature requirements 5.4 Explain vaccine wastage and stock management	• Define cold chain • Describe cold chain equipment • Explain vaccine storage temperature requirements • Explain vaccine wastage and stock management	Cold chain charts, Vaccine Vial Monitor (VVM) samples, Logistics manuals	• Identify cold chain equipment • Demonstrate cold chain setup • Take mock temperature readings, • Complete stock record sheet • Interpret Vaccines Vial Monitor, • Record vaccine stock	Guide students to: • Identify cold chain equipment • Demonstrate cold chain setup • Take mock temperature readings, • Complete stock record sheet • Interpret Vaccines Vial Monitor, • Record vaccine stock	Cold box (demo), Vaccine carrier, Thermometer, Stock cards, Vaccine Vial Monitor samples
General Objective 6.0: Understand Monitoring and reporting of Adverse Events Following Immunization (AEFI)						
13-15	6.1 Define AEFI 6.2 Classify AEFI 6.3 Explain AEFI reporting system 6.4 Explain risk communication in immunization	• Define AEFI • Classify AEFI • Explain AEFI reporting system • Explain risk communication in immunization	AEFI reporting forms, National guidelines, WHO safety manual	• Fill AEFI forms, • Analyse case scenarios, simulate risk communication	Guide students to: • Fill AEFI forms, • Analyse case scenarios, simulate risk communication	AEFI forms, Mock cases, Communication scripts
Course Assessment Course Work: 10% Tests: 10% Practical: 40% Examination: 40% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: ACCIDENT AND EMERGENCY CONDITIONS	**COURSE CODE: IDV 124**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 Hours/Week	**THEORETICAL: 1 Hour/Week**
YEAR: I SEMESTER: II	**PRE-REQUISITE:**	**PRACTICAL: 1 Hour/Week**
GOAL: This course is designed to equip students with basic knowledge and practical skills for recognizing, managing, and referring emergencies in healthcare settings.		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Know principles of first aid and emergency care;
2.0 Know management of wounds and bleeding;
3.0 Know fractures, burn and shock;
4.0 Know management of medical emergencies;
5.0 Know accident prevention.

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: ACCIDENT AND EMERGENCY CONDITIONS	**COURSE CODE: IDV 124**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 Hours/Week	**THEORETICAL: 1 Hour/Week**
YEAR: I SEMESTER: I	**PRE-REQUISITE:**	**PRACTICAL: 1 Hour/Week**
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to equip students with basic knowledge and practical skills for recognizing, managing, and referring emergencies in healthcare settings.		
General Objective 1.0: Know Principles of First Aid and Emergency Care.		

THEORETICAL CONTENT				**PRACTICAL CONTENT**		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-3	1.1 Define the following terms: i. First aid ii. First aid care iii. Emergency iv. Accident v. Disaster vi. Emergency care etc 1.2 Explain basic principles of resuscitation [Airways, Breathing Circulation (ABC)]. 1.3 Explain cardio-pulmonary resuscitation 1.4 Outline contents of a first aid box. 1.5 Explain medico-legal considerations in emergency care.	• Use audio visual aids to explain first aid, first aid care, emergency accident, disaster, emergency care etc • Explain basic principles of resuscitation [Airways, Breathing Circulation (ABC)]. • Explain cardio-pulmonary resuscitation • Outline contents of a first aid box. • Explain medico-legal considerations in emergency care.	First aid manual, Charts, Sample first aid box, Multimedia slides etc	• Demonstrate ABC assessment: cardio-pulmonary resuscitation • Identify first aid box items.	Guide students to: • Demonstrate ABC assessment. • Cardio-pulmonary resuscitation • Identify and arrange first aid box items.	First aid kit, CPR Mannequin Gloves, First aid manuals, Charts, Sample first aid box etc

General Objective 2.0: Know Management of Wounds and Bleeding.						
4-6	2.1 Classify types of wounds. 2.2 Describe methods of bleeding control. 2.3 Describe wound cleaning and dressing procedures.	• Classify types of wounds. • Describe methods of bleeding control. • Describe wound cleaning and dressing procedures.	Charts, textbooks	• Demonstrate wound dressing and bandaging techniques. • Apply pressure dressing for bleeding control.	Guide students to: • Demonstrate wound dressing and bandaging techniques. • Apply pressure dressing for bleeding control.	Bandages, gauze, antiseptic solution Forceps etc
General Objective 3.0: Know Fractures, Burns and Shock.						
7-9	3.1 Define fracture 3.2 Describe types of fracture. 3.3 Explain immobilization techniques. 3.4 Classify burns 3.5 Define shock 3.6 Explain types of shock 3.7 Enumerate causes of shock 3.8 Describe basic first aid management of shock, burns and fracture (rehydration, pain management, Immobilisation etc.)	• Explain fracture • Highlight types of fracture. • Explain immobilization techniques. • Classify burns • Explain basic first aid of burns. • Define shock • Explain types of shock • Enumerate causes of shock • Describe basic first aid management of shock, burns and fracture (rehydration, pain	Splints, charts, first aid manual	• Identify types of fractures • Apply splints for limb fractures. • Identify burns • Demonstrate burn dressing. • Simulate shock management scenario. • Carry out first aid management for burns, shock and fracture	Guide students to: • Identify types of fractures • Apply splints for limb fractures. • Identify burns • Demonstrate burn dressing. • Simulate shock management scenario. • Carry out first aid management for burns, shock and fracture	Splints, Charts triangular bandage, mannequins Anti-Shock garment Forceps Disinfectants Plaster

		management, Immobilisation, safe patient transportation etc.)				
General Objective 4.0: Know Management of Medical Emergencies						
10-12	4.1 Explain medical emergencies 4.2 Explain respiratory distress 4.3 Describe signs of respiratory distress. 4.4 Explain Fainting and seizures 4.5 Describe management of fainting and seizures. 4.6 Explain poisoning 4.7 Describe symptoms of poisoning. 4.8 Explain allergic reactions. 4.9 4.9 Describe emergency care of allergic reactions.	• Explain medical emergencies. • Explain respiratory distress. • Describe signs of respiratory distress. • Explain Fainting and seizures • Describe management of fainting and seizures. • Explain poisoning • Describe symptoms of poisoning. • Explain allergic reactions. • Describe emergency care of allergic reactions	Emergency charts Lecture note White marker board Public Addressing system	• Identify respiratory distress • Demonstrate recovery position. • Simulate seizure response. • Practice emergency call protocol.	Guide students to: • Identify respiratory distress • Demonstrate recovery position. • Simulate seizure response. • Practice emergency call protocol.	Simulation space, Emergency tray checklist
General Objective 5.0: Know Accident Prevention						
13-15	5.1 Explain ways of preventing accident. 5.2 Highlight common causes of domestic and road accidents. 5.3 Explain factors to be considered for accident prevention	• Explain ways of preventing accident. • Highlight common causes of domestic and road accidents. • Explain factors to be	Emergency charts Lecture notes White marker board Public Addressing system	• Develop accident prevention awareness plan.	Guide students to: • Develop accident prevention awareness plan.	Flip charts, markers Simulation space, Charts

		considered for accident prevention				

Course Assessment
Course Work: 10%
Tests: 10%
Practical: 40%
Examination: 40%
Total: 100%

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASE AND VACCINOLOGY		
COURSE: SEXUALLY TRANSMITTED INFECTIONS (STIs)	**COURSE CODE: IDV 125**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 Hours/Week	**THEORETICAL: 1 Hour/Week**
YEAR: I SEMESTER: II	**PRE-REQUISITE:**	**PRACTICAL: 1 Hour/Week**
GOAL: This course is designed to enable students acquire knowledge and skills of sexually transmitted infections, including their epidemiology, causative agents, clinical features, diagnosis, treatment, prevention, and control strategies in public health.		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand the concept and epidemiology of STIs;
2.0 Know common causative agents of STIs;
3.0 Identify clinical manifestations of common STIs;
4.0 Apply diagnostic methods for STIs;
5.0 Understand syndromic management of STIs;
6.0 Understand prevention and control strategies of STIs;
7.0 Address social, behavioural, and public health issues related to STIs.

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASE AND VACCINOLOGY		
COURSE: SEXUALLY TRANSMITTED INFECTIONS (STIs)	COURSE CODE: IDV 125	CREDIT UNIT: 2
	CONTACT HOURS: 2HRS	THEORETICAL: 1 hour/Week
YEAR: I SEMESTER: II	PRE-REQUISITE:	PRACTICAL: 1 hour/Week
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to enable students acquire comprehensive knowledge of sexually transmitted infections, including their epidemiology, causative agents, clinical features, diagnosis, treatment, prevention, and control strategies in public health.		
General Objective 1.0: Understand the concept and epidemiology of STIs.		

THEORETICAL CONTENT				PRACTICAL CONTENT		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1	1.1 Define Sexually Transmitted Infections (STIs) and differentiate from Reproductive Tract Infections (RTIs) 1.2 Explain global and national epidemiology of STIs 1.3 Describe risk factors and transmission patterns	• Define STIs and differentiate from RTIs • Explain global and national epidemiology of STIs • Describe risk factors and transmission patterns	Textbooks, White marker, Board, Public Address System etc			
General Objective 2.0: Know common causative agents of STIs.						
2 - 4	2.1 Enumerate bacterial STIs (gonorrhoea, syphilis) 2.2 Enumerate viral STIs (HIV, HPV, herpes) 2.3 Enumerate parasitic and fungal STIs	• Highlight bacterial STIs (gonorrhea, syphilis) • Highlight viral STIs (HIV, HPV, herpes) • Highlight parasitic and fungal STIs	Textbook White marker, Board Public Address System			
General Objective 3.0: Identify clinical manifestations of STIs.						

5 - 6	3.1 Describe asymptomatic infections. 3.2 Describe signs and symptoms of common STIs. 3.3 Explain complications of untreated STIs.	• Explain complications of untreated STIs • Describe signs and symptoms of common STIs • Describe asymptomatic infections	Textbooks, White marker, Board, Public Address System etc	• Identify signs and symptoms of common STIs • Identify complications of untreated STIs • Identify asymptomatic infections	Guide students to: • Identify signs and symptoms of common STIs • Identify complications of untreated STIs • Identify asymptomatic infections	Charts, Pictorials, Models, Video clips
General Objective 4.0: Apply diagnostic methods for STIs.						
7 - 8	4.1 Explain the approach to laboratory diagnosis of STIs. 4.2 Explain the principles of RDT. 4.3 Describe rapid diagnostic tests (RDTs) for STIs.	• Explain the approach to laboratory diagnosis of STIs (Consent, Confidentiality, Counselling (Pre & post), Correct Test result, Connection to care) • Explain the principles of RDT • Describe rapid diagnostic tests (RDTs)	National guidelines Textbook White marker Board Public Address System etc	• Demonstrate use of RDT kits	Guide students to: • Demonstrate use of RDT kits	Test kits (Any test kits available HIV, VDRL, etc), Case scenarios, Lab manuals etc
General Objective 5.0: Understand syndromic management of STIs.						
9	5.1 Explain syndromic management approach. 5.2 Explain partner	• Explain syndromic management	Treatment guidelines Case studies	• Practice syndromic diagnosis		

	notification and management. 5.3 Describe drug resistance challenges to STIs	approach • Explain partner notification and management • Describe drug resistance challenges to STIs	Research articles Lab manuals Test kits National guidelines Textbook White marker Board Public Address System			
General Objective 6.0: Understand prevention and control strategies of STIs.						
10 - 11	6.1 Explain health education and behavioural change. 6.2 Describe condom use and vaccination (HPV, Hepatitis B). 6.3 Explain screening and surveillance programmes.	• Explain health education and behavioural change • Describe condom use and vaccination (HPV, Hepatitis B) • Explain screening and surveillance programmes	IEC materials Models WHO/NCDC reports Treatment guidelines Case studies Research articles Lab manuals Test kits National guidelines Textbook White marker Board Public Address System	• Demonstrate correct condom use. • Design STI awareness campaign	Guide students to: Demonstrate correct condom use Design STI awareness campaign	Models IEC tools Audio visuals Public Address Tools Male and Female condoms
General Objective 7.0: Address social, behavioural and public health issues related to STIs.						
12 - 13	7.1 Explain stigma and discrimination. 7.2 Discuss cultural and behavioural factors. 7.3 Apply community-based	• Explain stigma and discrimination • Discuss cultural and behavioural factors	IEC materials Models, Treatment guidelines, Case studies,	• Identify STI pathogens using images/slides Lab session	Guide the students to: Identify STI pathogens using images/slides Lab	Microscope, slides Lab manuals, Test kits etc

	intervention strategies	• Apply community-based intervention strategies	Research articles National guidelines Textbook White marker Board Public Address System, Projectors etc		session	

Course Assessment

Course Work: 10%
Tests: 10%
Practical: 40%
Examination: 40%
Total: 100%

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: VACCINE SAFETY AND REGULATORY AFFAIRS	**COURSE CODE: IDV 126**	**CREDIT UNIT: 1**
	CONTACT HOURS: 1 hour/week	**THEORETICAL: 1 hour/week**
YEAR: 1 SEMESTER: II	**PRE-REQUISITE:**	**PRACTICAL: 0**
GOAL: This course is designed to introduce students to basic concept of vaccine safety monitoring, regulatory systems, ethics, and surveillance for safe vaccination and public health protection.		
GENERAL OBJECTIVES On completion of this course, the students should be able to: 1.0 Understand the basic principles of vaccine safety; 2.0 Understand regulatory frameworks governing vaccines; 3.0 Understand the vaccine development and approval processes; 4.0 Recognise vaccine adverse event and their management; 5.0 Understand vaccine safety monitoring and pharmacovigilance systems.		

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: VACCINE SAFETY AND REGULATORY AFFAIRS	COURSE CODE: IDV 126	CREDIT UNIT: 1
	CONTACT HOURS: 1 hour/week	THEORETICAL: 1 hour/week
YEAR: I SEMESTER: II	PRE-REQUISITE:	PRACTICAL: 0
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to introduce students to basic concept of vaccine safety monitoring, regulatory systems, ethics, and surveillance for safe vaccination and public health protection.		
General Objective 1.0: Understand the basic principles of vaccine safety		

THEORETICAL CONTENT				PRACTICAL CONTENT		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-2	1.1 Define vaccine safety and its importance in public health. 1.2 Explain the concept of risk–benefit assessment in vaccination. 1.3 Describe factors influencing vaccine safety (vaccine components, storage conditions, administration technique). 1.4 Explain the role of safety monitoring in maintaining public confidence in vaccines.	• Define vaccine safety and its importance in public health. • Explain the concept of risk–benefit assessment in vaccination. • Describe factors influencing vaccine safety (vaccine components, storage conditions, administration technique). • Describe types of vaccine reactions (local, systemic, allergic reactions). • Explain the role of safety monitoring in	Whiteboard and markers, Charts, PowerPoint slides, WHO guidelines, Lecture notes, vaccine safety articles, Textbooks etc			

		maintaining public confidence in vaccines.				
General Objective 2.0: Understand regulatory frameworks governing vaccines						
3-4	2.1 Define vaccine regulation and its objectives. 2.2 Highlight national and international vaccine regulatory authorities 2.3 Describe the roles of regulatory bodies in vaccine approval, monitoring, and quality assurance	• Explain vaccine regulation and its objectives. • Highlight national and international vaccine regulatory authorities • Describe the roles of regulatory bodies in vaccine approval, monitoring, and quality assurance	Vaccine safety articles, classification charts, Lecture notes, Document Highlight immune t slides, Textbooks, Whiteboard and markers WHO guidelines etc			
General Objective 3.0: Understand the vaccine development and approval processes						
5-8	3.1 Outline stages of vaccine development (research, preclinical studies, clinical trials). 3.2 Describe phases of clinical trials (Phase I, II, III, and IV). 3.3 Explain the process of vaccine registration and licensing. 3.4 Discuss quality control and quality	• Outline stages of vaccine development (research, preclinical studies, clinical trials). • Describe phases of clinical trials (Phase I, II, III, and IV). • Explain the process of vaccine registration and licensing. • Discuss quality control and quality assurance during vaccine production.	Projector, Charts Whiteboard Slides Lecture note Textbooks etc			

	assurance during vaccine production. 3.5 Describe emergency use authorization procedures.	• Describe emergency use authorization procedures.				
General Objective 4.0: Recognise vaccine adverse event and their management						
9-10	4.1 Define adverse events following immunization (AEFI). 4.2 Classify types of AEFI (vaccine-related, programmatic errors, coincidental events). 4.3 Describe common vaccine reactions and complications. 4.4 Explain procedures for managing vaccine adverse events. 4.5 Describe reporting mechanisms for AEFI.	• Define adverse events following immunization (AEFI). • Classify types of AEFI (vaccine-related, programmatic errors, coincidental events). • Recognize common vaccine reactions and complications. • Explain procedures for managing vaccine adverse events. • Describe reporting mechanisms for AEFI.	Charts, WHO control manuals, Textbooks			
General Objective 5.0: Understand vaccine safety monitoring and pharmacovigilance systems						
11-13	5.1 Define pharmacovigilance in relation to vaccines. 5.2 Explain the purpose of vaccine safety surveillance systems.	• Explain pharmacovigilance in relation to vaccines. • State the purpose of vaccine safety surveillance systems.	WHO epidemiology reports, Charts etc			

	5.3 Describe passive and active surveillance methods. 5.4 Outline sources of vaccine safety data. 5.5 Explain how safety signals are detected and investigated	• Discuss passive and active surveillance methods. • Describe sources of vaccine safety data. • Mention how safety signals are detected and investigated				
Course Assessment Course Work: 20% Tests: 20% Examination: 60% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: INTRODUCTION TO COMMUNICABLE AND NON-COMMUNICABLE DISEASES	**COURSE CODE: IDV 127**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 hours/week	**THEORETICAL: 2 hours/week**
YEAR: 1 SEMESTER: II	**PRE-REQUISITE:**	**PRACTICAL: 0**
GOAL: This course is designed to equip students with the basic knowledge of Communicable and Non-Communicable Diseases		
GENERAL OBJECTIVES On completion of this course, the students should be able to: 1.0 Understand the concept of disease; 2.0 Understand the concept of communicable diseases; 3.0 Understand the concept of non-communicable diseases; 4.0 Understand the prevention and control of communicable and non-communicable diseases; 5.0 Understand current policies and intervention strategies in diseases control.		

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY					
COURSE: INTRODUCTION TO COMMUNICABLE AND NON-COMMUNICABLE DISEASES		COURSE CODE: IDV 127		CREDIT UNIT: 2	
		CONTACT HOURS: 2 hours/week		THEORETICAL: 2 hours/week	
YEAR: 1 SEMESTER: II		PRE-REQUISITE:		PRACTICAL: 0	
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL					
GOAL: This course is designed to equip students with the basic knowledge of Communicable and Non-Communicable Diseases					
General Objective 1.0 Understand the concept of disease					
THEORETICAL CONTENT				PRACTICAL CONTENT	
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-3	1.1 Define disease. 1.2 Explain the broad classification of diseases. 1.3 Differentiate between health and disease.	• Define disease • Explain the broad classification of diseases • Differentiate between heath and disease	Textbooks Charts Marker board Marker etc			
General Objective 2.0: Understand the concept of communicable diseases						
4-6	2.1 Define communicable diseases and its related terms. 2.2 Explain the classification of communicable diseases by pathogens: i. Viral ii. Bacterial iii. Protozoan iv. Fungal etc 2.4 Explain causative agent 2.5 Discuss routes of transmission, signs and symptoms and	• Define communicable diseases and its related terms • Explain the classification of communicable diseases by pathogens. • Discuss causative agent, routes of transmission, signs and symptoms, management of diseases	Textbooks Reading materials Posters Chart etc			

	management of diseases					
General Objective 3.0 Understand the concept of non-communicable diseases						
7-9	3.1 Define non-communicable diseases and its terms. 3.2 List common non-communicable diseases e.g. hypertension, coronary disease, diabetes mellitus, sickle cell disease, enzyme deficiency (G6PD - glucose-phosphate hydrogenase) and stroke, etc. 3.3 Explain each of the diseases listed above, under the following: i. risk factors ii. signs and symptoms iii. prevention and control iv. management of the diseases	• Explain non-communicable diseases. • State examples of common non-communicable diseases. • Discuss the risk factors, signs and symptoms, prevention and control management of the non-communicable diseases	Textbook Reading materials Slides Chart Marker board etc			
General Objective 4.0: Understand the prevention and control of communicable and non-communicable diseases.						
10-12	4.1 Explain the principles and approaches to prevention and control of communicable and non-communicable diseases 4.2 Explain the strategies for prevention and	• Explain the principles and approaches to prevention and control of communicable and non-communicable diseases • Explain the strategies	Textbook Chart Posters Maps Board Marker board			

	control of common communicable diseases [i.e. health education, 4.3 Explain the strategies for prevention and control of common non-communicable diseases	for prevention and control of common communicable diseases [i.e. health education, • Explain the strategies for prevention and control of common non-communicable diseases,				
General Objective 5.0: Understand current policies and intervention strategies in disease control						
13-15	5.1 Explain government policies and interventions in disease control 5.2 Explain the current policies and intervention strategies in disease control, such as: i. Roll back malaria programme, ii. National TBL control programme, iii. HIV/AIDS scale-up programme, iv. National Filarial control programme v. National Policy on immunization, etc 5.3 Describe the role of government and global health organizations	• Explain government policies and interventions in disease control • Explain the current policies and intervention strategies in disease control, such as: - Roll back malaria programme, - National TBL control programme, - HIV/AIDS scale-up programme, - National Lymphatic Filariasis Elimination programme	Textbook Chart Policy documents Reading materials Board Marker board etc			

	(e.g., WHO, CDC) in disease control and policy implementation. 5.4 Recognize challenges affecting the implementation of disease control policies in developing countries.	- National Policy on immunization, etc • Describe the role of government and global health organizations (e.g., WHO, CDC) in disease control and policy implementation. • Recognize challenges affecting the implementation of disease control policies in developing countries.				
Course Assessment Course Work: 20% Tests: 20% Examination: 60% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: INTRODUCTORY BACTERIOLOGY	**COURSE CODE: IDV 128**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 hours/week	**THEORETICAL: 1 hour/week**
YEAR: I SEMESTER: II	**PRE-REQUISITE: GENERAL MICROBIOLOGY (IDV 114)**	**PRACTICAL: 1 hour/week**
GOAL: This course is designed to equip students with the knowledge and skills of identification and laboratory diagnosis of bacteria		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand bacterial systematics;
2.0 Know bacterial structural characteristics;
3.0 Understand bacterial growth requirements;
4.0 Know bacterial reproduction processes;
5.0 Understand principles of clinical specimen collection and handling;
6.0 Understand bacterial culture techniques;
7.0 Know bacterial staining techniques and identification.

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: INTRODUCTORY BACTERIOLOGY	COURSE CODE: IDV 128	CREDIT UNIT: 2
	CONTACT HOURS: 2 hours/week	THEORETICAL: 1 hour/week
YEAR: I SEMESTER: II	PRE-REQUISITE: IDV 114	PRACTICAL: 1 hour/week
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to equip students with the knowledge and skills of identification and laboratory diagnosis of bacteria		
General Objective 1.0: Understand bacterial systematics		

THEORETICAL CONTENT				PRACTICAL CONTENT		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1	1.1 Define systematic bacteriology 1.2 Explain traditional bacterial taxonomy (classification, nomenclature, and identification) 1.3 Describe the criteria for classification of bacteria 1.4 Explain the importance of bacterial taxonomy 1.5 Enumerate major bacterial groups	• Explain systematic bacteriology • Explain traditional bacterial taxonomy (classification, nomenclature, and identification) • Describe the criteria for classification • Explain importance of bacterial taxonomy • Explain major bacterial groups	Textbooks, Articles Computers, Projector, Markerboard, Marker, Videos, Documentaries Journals, etc			
General Objective 2.0: Know bacterial structural characteristics						
2-3	2.1 Describe bacterial cell structure 2.2 Explain bacterial cell wall types 2.3 Describe internal bacterial functional organelles	• Describe bacterial cell structure • Explain bacterial cell wall types • Describe internal bacterial functional	Textbooks Articles Computer Projector Markerboard Marker Educational			

	2.4 Describe external bacterial functional organelles	organelles • Describe external bacterial functional organelles	Videos or Documentaries Journals			
General Objective 3.0: Understand bacterial growth requirements						
4-5	3.1 Define bacterial growth. 3.2 Describe nutritional requirements for bacterial growth. 3.3 Explain environmental growth factors.	• Explain bacterial growth. • Describe nutritional requirements. • Explain environmental growth factors.	Textbooks Articles Computer Projector Markerboard Marker Educational Videos or Documentaries Journals			
General Objective 4.0: Know bacterial reproduction processes						
6 – 7	4.1 Define bacterial reproduction. 4.2 Describe bacterial asexual reproduction (binary fission). 4.3 Explain generation time. 4.4 Explain bacterial sexual reproduction 4.5 Discuss mechanisms of genetic variation (conjugation, transformation,	• Explain bacterial reproduction. • Describe bacterial asexual reproduction (binary fission). • Explain generation time. • Explain bacterial sexual reproduction • Discuss mechanisms of genetic variation (conjugation, transformation,	Textbooks Articles Computer Projector Markerboard Marker Educational Videos or Documentaries Journals			

	transduction).	transduction).				
General Objective 5.0: Understand principles of clinical specimen collection and handling						
8-9	5.1 Define clinical specimen. 5.2 Discuss types of clinical specimens. 5.3 Describe aseptic collection techniques. 5.4 Explain specimen labelling and registration procedures. 5.5 Describe transport and storage requirements 5.6 Explain the importance of biosafety precautions	• Explain the concept and proper specimen collection. • Discuss common clinical specimens (urine, sputum, stool, wound swabs). • Describe aseptic collection techniques. • Explain correct specimen labelling and registration procedures. • Describe transport media and storage conditions for different specimens • Emphasize biosafety measures and infection control	Textbooks Articles Computer Projector Markerboard Marker Educational Videos or Documentaries Journals	• Identify appropriate specimen containers. • Demonstrate aseptic specimen collection. • Register specimens correctly. • Fill laboratory request forms accurately. • Apply proper transport and storage procedures. • Observe biosafety precautions.	Guide students to: • Identify appropriate specimen containers. • Demonstrate aseptic specimen collection. • Label and register specimens correctly. • Fill laboratory request forms accurately. • Apply proper transport and storage procedures. • Observe biosafety precautions.	Specimen bottles, Swab sticks with transport media, Blood sample bottles, Microscope slides, Laboratory request forms Refrigerator (2–8°C storage), Biohazard waste bins, Gloves, Face masks, Lab coats, Hand sanitizers, Disinfectants (e.g., 70% alcohol), Labels and markers
General Objective 6.0: Understand bacterial culture techniques						
10- 12	6.1 Define bacterial culture 6.2 Describe types of culture media. 6.3 Explain aseptic	• Explain media types: selective, differential, and enriched.	Textbooks Articles Computer Projector	• Identify types of culture media. • Inoculate specimen on	Guide students to: • Inoculate specimen on culture media	Wire loop, Bunsen Burner Culture media, Specimen bottles, Swab sticks with transport media, Blood

	techniques. 6.4 Describe inoculation methods. 6.5 Differentiate isolation and purification techniques. 6.6 Discuss colony morphology for preliminary identification	• Describe types of culture media. • Explain aseptic techniques. • Demonstrate inoculation methods. • Differentiate isolation and purification techniques	Markerboard Marker Educational Videos or Documentaries Journals etc.	culture media • Demonstrate aseptic handling. • Demonstrate inoculation methods: streak, spread, pour plate. • Isolate pure cultures from mixed samples. • Identify colony morphology for preliminary identification	• Identify types of culture media. • Demonstrate aseptic handling. • Show inoculation methods: streak, spread, pour plate. • Isolate pure cultures from mixed samples. • Identify colony morphology for preliminary identification. .	sample bottles, Microscope slides, Incubator, Water bath Autoclave Laboratory request forms Biohazard waste bins, Gloves, Face masks, Lab coats, Hand sanitizers, Disinfectants (e.g., 70% alcohol), Labels and markers Glass wares
General Objective 7.0: Know bacterial staining techniques and identification						
13- 15	7.1 Define bacterial staining and techniques. 7.2 Differentiate microscopic features of Gram-positive and Gram-negative bacteria. 7.3 Describe Ziehl Neelsen staining technique. 7.4 Describe bacterial spore (Schaeffer–Fulton) staining	• Define bacterial staining and techniques. • Differentiate microscopic features of Gram-positive and Gram-negative bacteria. • Describe Ziehl Neelsen staining technique. • Describe bacterial spore staining technique	Textbooks Articles Computer Projector Markerboard Marker Educational Videos or Documentaries Journals	• Prepare clean grease-free slides, smears correctly, perform heat fixation safely, • Demonstrate simple staining technique, and observe stained bacteria under oil immersion. • Demonstrate step-by-step	Guide students to: • Prepare clean grease-free slides, smears correctly, perform heat fixation safely, • demonstrate simple staining technique, and observe stained bacteria under oil immersion. • Demonstrate	Gram staining reagents, Ziehl Neelsen reagents, Staining rack, Bacterial cultures, Malachite green, Bunsen burner, Microscope Spore-forming organism (e.g., Bacillus subtilis) PPE, Slides Immersion oil Slide rack

	technique 7.5 Explain staining for bacterial identification.	• Explain staining for bacterial identification.		Gram staining (crystal violet, iodine, decolourizer, safranin) • Demonstrate step-by-step Ziehl–Neelsen (carbol fuchsin, acid alcohol, methylene blue) • Demonstrate step-by-step bacterial spore staining technique	step-by-step Gram staining (crystal violet, iodine, decolourizer, safranin) • Demonstrate step-by-step Ziehl–Neelsen (carbol fuchsin, acid alcohol, methylene blue) • Demonstrate step-by-step bacterial spore staining technique	
Course Assessment Course Work: 10% Tests: 10% Practical: 40% Examination: 40% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: INTRODUCTION TO INFECTION PREVENTION AND CONTROL (IPC)	COURSE CODE: IDV 129	CREDIT UNIT: 2
	CONTACT HOURS: 2 Hours/Week	THEORETICAL: 1 Hour/Week
YEAR: I SEMESTER: II	PRE-REQUISITE:	PRACTICAL: 1 Hour/Week
GOAL: This course is designed to equip students with essential skills for Infection Prevention and Control (IPC)		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand the basic concepts and principles of infection prevention and control (IPC);
2.0 Understand infection prevention in healthcare settings;
3.0 Understand standard precautions used in infection prevention and control;
4.0 Know appropriate use of personal protective equipment (PPE);
5.0 Understand sterilization, disinfection, and waste management practices;
6.0 Understand transmission-based precautions and isolation practices for common infectious diseases.

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: INTRODUCTION TO INFECTION PREVENTION AND CONTROL (IPC)	COURSE CODE: IDV 129	CREDIT UNIT: 2
	CONTACT HOURS: 2 Hours/Week	THEORETICAL: 1 Hour/Week
YEAR: I SEMESTER: II	PRE-REQUISITE:	PRACTICAL: 1 Hour/Week
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to equip students with essential skills for Infection Prevention and Control (IPC)		
General Objective 1.0: Understand the basic concepts and principles of Infection Prevention and Control (IPC).		

THEORETICAL CONTENT				PRACTICAL CONTENT		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-3	1.1 Define infection prevention and control and related key terms. 1.2 Explain the chain of infection and its components. 1.3 Describe modes of transmission of infectious agents. 1.4 Describe factors influencing the spread of infections in healthcare and community settings.	• Define infection prevention and control and related key terms. • Explain the chain of infection and its components. • Describe modes of transmission of infectious agents. • Describe factors influencing the spread of infections in healthcare and community settings.	Textbooks, Articles, Computer, Projector, Markerboard Marker, Educational Videos or Journals			
General Objective 2.0: Understand infection prevention in healthcare settings.						
4-5	2.1 Describe common healthcare-associated infections (HAIs). 2.2 Explain measures to prevent HAIs. 2.3 Describe the role of	• Describe common healthcare-associated infections (HAIs). • Explain measures to prevent HAIs.	Textbooks Articles Computer Projector Markerboard			

	healthcare workers in infection control. 2.4 Explain Point of Care Risk Assessment (POCRA) and its utility.	• Describe the role of healthcare workers in infection control. • Explain Point of Care Risk Assessment (POCRA) and its utility.	Marker Educational Videos or Journals			
General Objective 3.0: Understand standard precautions used in infection prevention and control.						
6-7	2.1 Explain the concept and importance of standard precautions. 2.2 Differentiate between universal and standard precaution 2.3 Enumerate the components of standard precaution. 2.4 Describe hand hygiene techniques and indications. 2.5 Explain appropriate use of personal protective equipment (PPE). 2.6 Explain safe injection practices and sharps handling.	• Explain the concept and importance of standard precautions. • Differentiate between universal and standard precaution • Enumerate the components of standard precaution. • Describe hand hygiene techniques and indications. • Explain appropriate use of personal protective equipment (PPE). • Explain safe injection practices and sharps handling.	Textbooks Articles Computer Projector Markerboard Marker Educational Videos or Journals	• Demonstrate hand hygiene techniques	Guide students to: • Demonstrate hand hygiene techniques	Water system Hand sanitisers Hand wash liquid Hand towels Hand dryer etc
General Objective 4.0: Know appropriate use of Personal Protective Equipment (PPE)						
8-9	4.1 Define PPE 4.2 Describe types of PPE 4.3 Explain indications for PPE use (emphasis appropriate use of	• Define PPE • Describe types of PPE • Explain indications	Textbooks Articles Computer Projector	• Identify PPE • Correctly use PPE for infection control procedures	Guide students to: • Identify PPE • Correctly use	Gloves, masks, gowns, face shields, biohazard

	PPE) 4.4 Describe donning and doffing procedures	for PPE use • Describe donning and doffing procedures	Markerboard Marker Educational Videos or Journals	• Carryout donning and doffing	PPE for infection control procedures • Carryout donning and doffing	disposal bags Hand wash Sanitizer Handwashing station
General Objective 5.0: Understand sterilization, disinfection, and healthcare waste management practices.						
10-12	5.1 Differentiate between sterilization and disinfection. 5.2 Describe methods of cleaning, disinfection and sterilization. 5.3 Describe proper segregation and disposal of healthcare waste. 5.4 Explain risks associated with poor waste management.	• Differentiate between sterilization and disinfection. • Describe methods of cleaning, disinfection and sterilization. • Describe proper segregation and disposal of healthcare waste. • Explain risks associated with poor waste management.	Textbooks Articles Computer Projector Markerboard Marker Educational Videos or Journals	• Identify colour coded bins • Carryout segregation using colour coded bins • Clean healthcare environment	Guide students to: • Identify colour coded bins • Carryout segregation using colour coded bins • Clean healthcare environment	Colour coded bins, PPE Disinfectants, Towels, Mobile carts containing materials, disinfectants, waste bags etc
General Objective 6.0: Understand transmission-based precautions and isolation practices for common infectious diseases.						
13-15	6.1 Differentiate between contact, droplet, and airborne precautions. 6.2 Describe isolation procedures for infectious diseases. 6.3 Describe appropriate precautions for common infectious conditions.	• Differentiate between contact, droplet, and airborne precautions. • Describe isolation procedures for infectious diseases. • Describe appropriate precautions for common infectious conditions.	Textbooks Articles Computer Projector Markerboard Marker Educational Videos or Journals			

Course Assessment	
Course Work:	10%
Tests:	10%
Practical:	40%
Examination:	40%
Total:	100%

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE TITLE: COMPUTER APPLICATIONS IN INFECTIOUS DISEASE AND VACCINOLOGY	**COURSE CODE: IDV 131**	**Contact Hours: 2 Hours/Week**
Year: I Semester: II	**Credit Unit: 2**	**Theoretical: 1 Hour/Week**
	Pre-requisite: Introduction to Computing	**Practical: 1 Hour/Week**
GOAL: This course is designed to equip students with the knowledge and practical skills to apply computer-based tools, informatics methods, and data analytics to the surveillance, modeling, prevention, and management infectious diseases, with a specific focus on infectious disease and vaccinology.		
GENERAL OBJECTIVES At the end of this course, the student should be able to: 1.0 Understand the use of statistical software and electronic data to conduct basic data management and analysis. 2.0 Utilize geographic information systems (GIS) software to map disease distribution and identify outbreak clusters. 3.0 Navigate and retrieve data from global infectious disease databases and surveillance platforms.		

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY						
Course Title: COMPUTER APPLICATIONS IN INFECTIOUS DISEASE AND VACCINOLOGY		**Course Code: COM 131**		**Contact Hours: 2 Hours/Week**		
		Credit Unit: 2		**Theoretical: 1 Hour/Week**		
Year: I Semester: II		**Pre-requisite: Introduction to Computing**		**Practical: 1 Hour/Week**		
COURSE SPECIFIFCATION: THEORETICAL AND PRACTICAL						
GOAL: This course is designed to equip students with the knowledge and practical skills to apply computer-based tools, informatics methods, and data analytics to the surveillance, modelling, prevention, and management infectious diseases, with a specific focus on infectious disease and vaccinology.						
THEORETICAL CONTENT				**PRACTICAL CONTENT**		
General Objective 1.0: Understand the use of statistical software and electronic data to conduct basic data management and analysis.						
1-5	1.1 Explain the function of Electronic Data Capture (EDC) systems in vaccine clinical trials. 1.2 Describe the process of adverse event reporting in vaccine safety monitoring. 1.3 Explain how to Import and manage data using statistical software (Excel, SPSS, Epi info or R). 1.4 Explain how to perform descriptive statistics (mean, median, standard deviation) on antibody titre data.	• Explain the function of Electronic Data Capture (EDC) systems in vaccine clinical trials. • Describe the process of adverse event reporting in vaccine safety monitoring. • Explain how to Import and manage data using statistical software (Excel, SPSS, Epi info or R). • Explain how to perform descriptive statistics (mean, median, standard deviation) on antibody titre data.	Laptop computers, smart board, Projector, Writing Materials, White board, Markers, Internet Pictures Videos etc	• Import and manage data using statistical software (Excel, SPSS, or R). • Perform descriptive statistics (mean, median, standard deviation) on antibody titer data	Guide students to: • Import and manage data using statistical software (Excel, SPSS, or R). • Perform descriptive statistics (mean, median, standard deviation) on antibody titer data	Computers with Excel, SPSS, or R, internet access.

General Objective 2.0: Utilize Geographic Information Systems (GIS) software to map disease distribution and identify outbreak clusters.						
6-10	2.1 Describe the capabilities of GIS software for disease surveillance. 2.2 Explain how spatial analysis tools identify clusters and hotspots. 2.3 Describe the Installation and use of open QGIS (open-source GIS software) on a computer. 2.4 Explain how to Import epidemiological data (CSV format) and administrative boundary shapefiles into QGIS. 2.5 Explain how to create a thematic (choropleth) map showing disease incidence rates by region. 2.6 Describe spatial analysis tools to identify and mark disease hotspots on the map.	• Describe the capabilities of GIS software for disease surveillance. • Explain how spatial analysis tools identify clusters and hotspots. • Describe the Installation and use of open QGIS (open-source GIS software) on a computer. • Explain how to Import epidemiological data (CSV format) and administrative boundary shapefiles into QGIS. • Explain how to create a thematic (choropleth) map showing disease incidence rates by region. • Describe spatial analysis tools to identify and mark disease hotspots on the map.	Laptop computers, smart board, Projector, Writing Materials, White board, Markers, Internet Pictures Videos etc	• Install and open QGIS (open-source GIS software) on a computer. • Import epidemiological data (CSV format) and administrative boundary shapefiles into QGIS. • Create a thematic (choropleth) map showing disease incidence rates by region. • Use spatial analysis tools to identify and mark disease hotspots on the map.	Guide students to: • Install and open QGIS (open-source GIS software) on a computer. • Import epidemiological data (CSV format) and administrative boundary shapefiles into QGIS. • Create a thematic (choropleth) map showing disease incidence rates by region. • Use spatial analysis tools to identify and mark disease hotspots on the map.	Computers installed with QGIS, Shapefiles of countries/regions Disease datasets.
General Objective 3.0 Navigate and retrieve data from global infectious disease databases and surveillance platforms.						
	3.1 Describe major global infectious disease	• Describe major global infectious	Laptop Computers, smart board,	• Access and navigate the WHO, CDC, and GISAID	Guide students to:	Computers with internet

11-15	databases (WHO, CDC, GISAID, ProMED). 3.2 Perform effective search strategies to retrieve epidemiological data. 3.3 Explain how to access and navigate the WHO, CDC, and GISAID databases. 3.4 Describe advanced searches to extract outbreak data, case counts, and epidemiological metadata for a specific infectious disease (e.g., Mpox, Cholera). 3.5 Explain how to download datasets in various formats (CSV, FASTA) and organize them for analysis.	disease databases (WHO, CDC, GISAID, ProMED). • Perform effective search strategies to retrieve epidemiological data. • Explain how to access and navigate the WHO, CDC, and GISAID databases. • Describe advanced searches to extract outbreak data, case counts, and epidemiological metadata for a specific infectious disease (e.g., Mpox, Cholera). • Explain how to download datasets in various formats (CSV, FASTA) and organize them for analysis.	Projector, Writing Materials, White board, Markers, Internet etc	databases. • Perform advanced searches to extract outbreak data, case counts, and epidemiological metadata for a specific infectious disease (e.g., Mpox, Cholera). • Download datasets in various formats (CSV, FASTA) and organize them for analysis.	• Access and navigate the WHO, CDC, and GISAID databases. • Perform advanced searches to extract outbreak data, case counts, and epidemiological metadata for a specific infectious disease (e.g., Mpox, Cholera). • Download datasets in various formats (CSV, FASTA) and organize them for analysis.	access, Projector.

Course Assessment

Course Work:	10%
Tests:	10%
Practical:	40%
Examination:	40%
Total:	100%

YEAR II SEMESTER I COURSES

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: INTRODUCTION TO PUBLIC HEALTH	**COURSE CODE: IDV 211**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 hours/week	**THEORETICAL: 2 hours/week**
YEAR: II SEMESTER: I	**PRE-REQUISITE:**	**PRACTICAL: 0**
GOAL: The goal of the course is to provide the students with knowledge on public health, history and principles.		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand the concept and scopes of public health;
2.0 Understand the historical background of public health;
3.0 Understand the determinants of health;
4.0 Understand the organization of public health system;
5.0 Understand the importance of infectious disease control in public health;
6.0 Understand the strategies involved in health promotion and disease prevention.

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY						
COURSE TITLE: INTRODUCTION TO PUBLIC HEALTH		**COURSE CODE: IDV 211**		**CREDIT UNIT: 2**		
		CONTACT HOURS: 2 hours/week		**THEORETICAL: 2 hours/week**		
YEAR: II SEMESTER: I		**PRE-REQUISITE:**		**PRACTICAL: 0**		
COURSE SPECIFIFCATION: THEORETICAL AND PRACTICAL						
GOAL: The goal of the course is to provide the students with knowledge on public health, history and principles.						
General Objective 1.0: Understand the concept, scopes and history of public health.						
THEORETICAL CONTENT				**PRACTICAL CONTENT**		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-3	1.1 Define Public Health 1.2 Discuss the evolution and History of Public Health (Health situations– past & present). 1.3 Describe the scope of public health. 1.4 Explain the role of public health in health and human development in the community. 1.5 Explain contributions of national and international figures in public health. 1.6 Explain the	• Define Public Health • Discuss the evolution and History of Public Health (Health situations– past & Present) • Describe the scope of public health. • Explain the role of Public Health in health and human development in the community. • Explain contributions of national and international figures in public health • Explain the foundational framework of public health • Highlight relevant	Bulletins Charts Internet/Intranet Journal Lecture notes Pictorials Projector Text books etc			

	foundational framework of public health. 1.7 Highlight relevant public health laws and institutions of public health importance. 1.8 Explain the principles of prevention of infectious diseases in community.	public health laws and institutions of public health importance • Explain the principles of prevention of infectious diseases in Community				
General Objective 2.0: Understand the determinants of health						
4-6	2.1 Define determinants of health. 2.2 Explain social, environmental and behavioural determinants. 2.3 Explain how determinants of health affect life expectancy.	• Define determinants of health • Explain social, environmental and behavioural determinants • Explain how determinants of health affects life expectancy	Bulletins, Charts, Internet /Intranet, Journals, Lecture notes, Pictorials, Projector, Text books etc			
General Objective 3.0: Understand the organization of public health systems						
7-9	3.1 Define health care delivery system. 3.2 Explain the components of healthcare delivery system. 3.3 Describe the structure of Nigerian	• Define health care delivery system • Explain the components of healthcare delivery system • Describe the structure of Nigerian healthcare delivery system	Bulletins, Charts Internet/ Intranet Journals Lecture notes Pictorials Projector			

	healthcare delivery system. 3.4 Explain the levels of health care delivery system in Nigeria. 3.5 Explain roles of PHC, secondary and tertiary health institutions. 3.6 Explain the roles of government and international organizations in infectious disease control.	• Explain the levels of health care delivery system in Nigeria • Explain roles of PHC, secondary and tertiary health institutions • Explain the roles of government and international organizations in infectious disease control.	Text books etc			
General Objective 4.0: Understand the importance of infectious disease control in public health						
10-13	4.1 Explain infectious diseases 4.2 Explain the measures for control of infectious diseases 4.3 Explain the impact of infectious diseases in public health 4.4 Explain the importance of controlling infectious diseases. 4.5 Explain the role of surveillance in infectious disease control.	• Explain infectious diseases • Explain the impact of infectious diseases in public health • Explain the measures for control of infectious diseases • Explain the importance of controlling infectious diseases • Explain the role of surveillance in infectious disease control	Bulletins Charts Internet/Intranet Journals Lecture notes Pictorials Projector Text book			
General Objective 5.0: Understand the strategies involved in health promotion and disease prevention						

14-15	5.1 Define disease prevention and health promotion. 5.2 Explain health promotion strategies. 5.3 Explain levels of disease prevention.	• Define disease prevention and health promotion. • Explain health promotion strategies • Explain levels of disease prevention	Bulletins Charts Internet/Intranet Journals Lecture notes Pictorials Projector Text books			
Course Assessment Course Work: 20% Tests: 20% Examination: 60% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: INTRODCUTION TO DEMOGRAPHY	**COURSE CODE: IDV 212**	**CREDIT UNIT: 1**
	CONTACT HOURS: 1 hour/week	**THEORETICAL: 1 Hour/Week**
YEAR: II SEMESTER: I	**PRE-REQUISITE: 0**	**PRACTICAL: 0**
GOAL: This course is designed to equip students with knowledge on population dynamics and their direct impact on the spread, control, and prevention of infectious diseases through vaccination and public health interventions		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand the concepts and principles of demography;
2.0 Analyse population dynamics and growth components;
3.0 Evaluate the impact of population structure on infectious disease epidemiology;
4.0 Know the theory and application of demographic transition.

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: INTRODUCTION TO DEMOGRAPHY	COURSE CODE: IDV 212	CREDIT UNIT: 1
	CONTACT HOURS: 1 Hour/week	THEORETICAL: 1 Hour/week
YEAR: II SEMESTER: I	PRE-REQUISITE: 0	PRACTICAL: 0
COURSE SPECIFIFCATION: THEORETICAL		
GOAL: This course is designed to equip students with knowledge on population dynamics and their direct impact on the spread, control, and prevention of infectious diseases through vaccination and public health interventions		
General Objective 1.0: Understand the concepts and principles of demography		

THEORETICAL CONTENT				PRACTICAL CONTENT		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-4	1.1 Define demography, census, population and vital statistics. 1.2 Explain the history of demography. 1.3 Explain importance of demography. 1.4 Explain the principles of demography. 1.5 Explain the relationship between population density and disease transmission.	• Define demography, census, population and vital statistics; • Explain the history of demography • Explain importance of demography • Explain the principles of demography • Explain the relationship between population density and disease transmission.	Whiteboard, Projector, Charts etc			
General Objective 2.0: Analyse population dynamics and growth components.						
5-8	2.1 Explain population dynamics. 2.2 Explain how to calculate the following;	• Explain population dynamics • Explain how to calculate the	Whiteboard Projector Charts			

	• Fertility rates • mortality rates • morbidity rates; etc 2.3 Explain the factors that affect population dynamics. 2.4 Describe how these factors influence the "herd" size required for effective vaccination. 2.5 Explain the components of population growth	following; • Fertility rates • mortality rates • morbidity rates; etc. • Explain the factors that affect population dynamics • Describe how these factors influence the "herd" size required for effective vaccination. • Explain the components of population growth				
General Objective 3.0: Evaluate the impact of population structure on infectious disease epidemiology.						
9-11	3.1 Explain population pyramid. 3.2 Interpret population pyramids. 3.3 Explain why age-specific cohorts (e.g., paediatric vs. geriatric) require different vaccination strategies. 3.3 Describe the impacts of population structure in infectious diseases.	• Explain population pyramid • Interpret population pyramids ; • Explain why age-specific cohorts (e.g., paediatric vs. geriatric) require different vaccination strategies. • Describe the impacts of population structure in infectious diseases	Whiteboard Projector Charts etc			
General Objective 4.0: Know the theory and application of Demographic Transition.						

12-15	4.1 Describe the types of demographic theories. 4.2 Explain the theories of demographic transition. 4.3 Describe the stages of demographic transition. 4.4 Correlate the shift from infectious diseases to chronic diseases as population matures.	• Explain the theories of demographic transition. • Describe the stages of demographic transition • Correlate the shift from infectious diseases to chronic diseases as population matures.	Whiteboard Projector Charts etc			
Course Assessment Course Work: 20% Tests: 20% Examination: 60% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: INTRODUCTION TO DISEASE SURVEILLANCE	**COURSE CODE: IDV 213**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 hours/week	**THEORETICAL: 1 hour/week**
YEAR: II **SEMESTER:** I	**PRE-REQUISITE:**	**PRACTICAL: 1 hour/week**
GOAL: This course is designed to equip students with the knowledge and basic skills required to understand the principles, structure, and implementation of disease surveillance for effective detection, reporting, and control of priority diseases and public health events.		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand the concept of disease surveillance;
2.0 Understand integrated diseases surveillance and response (IDSR) strategy;
3.0 Know priority diseases and conditions under IDSR;
4.0 Understand disease detection and reporting procedures;
5.0 Understand data collection, analysis, interpretation, and use in disease surveillance**;**
6.0 Understand outbreak investigation and response strategies;
7.0 Understand the role of laboratories in disease surveillance;
8.0 Know the importance of community participation in surveillance and response.

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: INTRODUCTION TO DISEASE SURVEILLANCE	COURSE CODE: IDV 213	CREDIT UNIT: 2
	CONTACT HOURS: 2 HRS	THEORETICAL: 1 hour/week
YEAR: 2 SEMESTER: 1	PRE-REQUISITE:	PRACTICAL:1 hour/week
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to equip students with the knowledge and basic skills required to understand the principles, structure, and implementation of Integrated Disease Surveillance and Response (IDSR) for effective detection, reporting, and control of priority diseases and public health events.		
General Objective 1.0: Understand the concept of disease surveillance		

THEORETICAL CONTENT				PRACTICAL CONTENT		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-2	1.1 Define disease surveillance and related terms (e.g., monitoring, reporting, notification). 1.2 Explain the objectives of disease surveillance in public health. 1.3 Describe the different types of surveillance (passive, active, sentinel). 1.4 Enumerate key components of a surveillance system (data collection, analysis, interpretation, dissemination). 1.5 Explain the role of	• Define disease surveillance and related terms (e.g., monitoring, reporting, notification). • Explain the objectives of disease surveillance in public health. • Describe the different types of surveillance (passive, active, sentinel). • Enumerate key components of a surveillance system (data collection, analysis, interpretation, dissemination). • Explain the role of	Lecture notes, projector, charts WHO/IDSR guidelines Slides, IDSR manuals WHO publications			

	surveillance in outbreak detection and control. 1.6 Discuss the importance of timely reporting and feedback. 1.7 Describe diseases commonly under surveillance in their country.	surveillance in outbreak detection and control. • Discuss the importance of timely reporting and feedback • Describe diseases commonly under surveillance in their country.				
General Objective 2.0: Understand Integrated Diseases Surveillance and Response (IDSR) strategy						
3-4	2.1 Explain the concept (objectives, importance and development) of IDSR. 2.2 Explain the structure and components of the IDSR system. 2.3 Describe the different surveillance levels. 2.4 Describe core surveillance functions 2.5 Enumerate stakeholders in surveillance systems.	• Explain the concept (objectives, importance and development) of IDSR • Explain the structure and components of the IDSR system • Describe the different surveillance levels • Describe core surveillance functions • Enumerate the stakeholders in surveillance systems	Lecture notes, projector, charts WHO/IDSR guidelines Slides, IDSR manuals WHO publications	• Identify existing surveillance systems • Draw IDSR reporting flow	Guide students to: • Review surveillance reports • Draw IDSR reporting flow	IDSR forms, surveillance reports
General Objective 3.0: Know priority diseases and conditions under IDSR.						
5-6	3.1 Define priority communicable diseases. 3.2 Explain epidemic-prone diseases. 3.3 Outline diseases targeted for eradication/ elimination.	• Explain priority communicable diseases • Explain epidemic-prone diseases • Explain diseases targeted for	IDSR disease list Charts, videos WHO materials Case studies	• Classify diseases based on IDSR categories	Guide students to • Classify diseases based on IDSR categories	IDSR forms, surveillance reports

	3.4 Highlight Public health events and conditions	eradication/elimination • Highlight Public health events and conditions				
General Objective 4.0: Understand disease detection and reporting procedures.						
7	4.1 Define standard case definitions. 4.2 Explain disease outbreak detection methods. 4.3 Describe disease outbreak reporting procedures. 4.4 Outline surveillance tools.	• Define standard case definitions • Explain detection methods • Describe reporting procedures • Outline surveillance tools	IDSR manuals, Slides, Reporting forms, IDSR forms etc	• Correctly fill surveillance forms	Demonstrate form completion	IDSR reporting forms
General Objective 5.0: Understand data collection, analysis, interpretation, and use in disease surveillance.						
8-9	5.1 Outline data collection methods. 5.2 Explain basic data analysis. 5.3 Describe surveillance data presentation. 5.4 Explain how data informs public health responses.	• Explain data collection methods • Explain basic data analysis • Explain surveillance data presentation • Explain how data informs public health response	Lecture notes, Graphs, Projector, Case studies	• Analyse, interpret and present simple surveillance data	Guide students to: • Analyze, interpret and present simple surveillance data	IDSR reporting forms Mobile devices GPS devices
General Objective 6.0: **Understand outbreak investigation and response strategies**.						
10-11	6.1 Define outbreak. 6.2 Differentiate between outbreak, epidemic, endemic and pandemic. 6.3 Describe the steps in outbreak investigation. 6.4 Explain control strategies of disease	• Explain outbreak • Explain between outbreak, epidemic, endemic and pandemic • Describe the steps in outbreak investigation • Explain control	Slides WHO outbreak guidelines Case studies	• Review a case study of an outbreak investigation	Guide students to: Review a case study of an outbreak investigation	Scenario materials

	outbreak.	strategies of disease outbreak				
General Objective 7.0: Understand the role of laboratories in disease surveillance.						
12-13	7.1 Explain the role of laboratories in disease surveillance 7.2 Outline the types of laboratory specimens collected in disease surveillance 7.3 Explain specimen collection procedures 7.4 Explain the reporting of laboratory results	• Explain the laboratory roles in disease surveillance • Explain types of laboratory specimens collected in disease surveillance • Explain specimen collection procedures • Explain the reporting of laboratory results	Lab manuals Sample containers Reporting charts	• Demonstration of specimen collection • Report laboratory results	Guide students to: • Demonstration of specimen collection	Specimen bottles, PPE
General Objective 8.0: Know the importance of community participation in disease outbreak surveillance and response.						
14-15	8.1 Define community surveillance 8.2 Describe roles of community stakeholders 8.3 Explain risk communication 8.4 Explain the importance of community participation in disease outbreak surveillance	• Prepare lecture slides and notes to: • Define community surveillance • Describe roles of community stakeholders • Explain risk communication • Explain the importance of community participation in disease outbreak surveillance	Lab manuals Sample containers Reporting charts Posters	• Community surveillance scenario exercise	• Conduct role-play activities	Role-play materials

Course Assessment	
Course Work:	10%
Tests:	10%
Practical:	40%
Examination:	40%
Total:	100%

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: MENTAL HEALTH IN INFECTIOUS DISEASES AND VACCINOLOGY	**COURSE CODE: IDV 214**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 hours/week	**THEORETICAL: 2 hours/week**
YEAR: II SEMESTER: I	**PRE-REQUISITE: None**	**PRACTICAL: 0**
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to enable students understand the fundamentals of mental health in infectious diseases and vaccinology		

GENERAL OBJECTIVES

On completion of this course, the student should be able to:

1.0 Understand basic concepts of mental health and illness.
2.0 Know common mental health conditions associated with infectious diseases.
3.0 Understand the psychological impact of outbreaks and pandemics.
4.0 Recognise stigma and discrimination related to infectious diseases.
5.0 Understand basic psychological first aid principles.
6.0 Understand effective communication skills in distressed populations.
7.0 Promote mental well-being in public health settings

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: MENTAL HEALTH IN INFECTIOUS DISEASES AND VACCINOLOGY	COURSE CODE: IDV 214	CREDIT UNIT: 2
	CONTACT HOURS: 2 hours/week	THEORETICAL: 2 hours/week
YEAR: II SEMESTER: I	PRE-REQUISITE: 0	PRACTICAL: 0
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to enable students understand the fundamentals of mental health in infectious diseases and vaccinology		
General Objective 1.0: Understand basic concepts of mental health and illness.		

THEORETICAL CONTENT				PRACTICAL CONTENT		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1	1.1 Define mental health and illness. 1.2 Explain determinants of mental health. 1.3 Differentiate stress from mental disorders. 1.4 Describe common mental health myths. 1.5 Describe signs of emotional distress. 1.6 Discuss common stressors in healthcare settings	• Explain mental health and illness. • Explain determinants of mental health. • Differentiate stress from mental disorders. • Describe common mental health myths. • Describe signs of emotional distress. • Discuss common stressors in healthcare settings.	National mental health policy documents Charts and slides Lecture notes Projector etc			
General Objective 2.0: Know common mental health conditions associated with infectious diseases						
2-3	2.1 Explain Anxiety disorders 2.2 Explain depression	• Explain Anxiety disorders • Explain depression	Case discussions Evidence-based review			

	2.3 Explain Post-Traumatic Stress Disorder (PTSD) 2.4 Discuss Substance use disorders 2.5 Discuss Psychological reactions to chronic illness	• Explain Post-Traumatic Stress Disorder (PTSD)Discuss Substance use disorders • Discuss Psychological reactions to chronic illness	Psychosocial support messages Discuss coping strategy National mental health policy documents Charts and slides Lecture notes Projector			
General Objective 3.0: Understand the psychological impact of outbreaks and pandemics.						
4	3.1 Explain outbreak and pandemics 3.2 Discuss Psychological effects of some common infectious diseases e.g HIV, Tuberculosis etc 3.3 Discuss Mental health impact of epidemics (e.g., COVID-19, Ebola) 3.4 Discuss Isolation, quarantine, and psychological consequences	• Explain outbreak and pandemics • Discuss Psychological effects of some common infectious diseases e.g HIV, Tuberculosis etc • Discuss Mental health impact of epidemics (e.g., COVID-19, Ebola) • Discuss Isolation, quarantine, and psychological consequences.	Case discussions Evidence-based review Psychosocial support messages Discuss coping strategy National mental health policy documents Charts and slides Lecture notes Projector			
General Objective 4.0: Recognise stigma and discrimination related to infectious diseases.						
5-6	4.1 Define stigma 4.2 Explain Social determinants of stigma 4.3 Describe mental health	• Definition of stigma • Explain Social determinants of	Case discussions Evidence-based review Psychosocial			

	effects of discrimination 4.4 Explain Psychological drivers of vaccine hesitancy	stigma • Describe mental health effects of discrimination • Explain Psychological drivers of vaccine hesitancy	support messages Discuss coping strategy National mental health policy documents Charts and slides Lecture notes Projector			
General Objective 5.0: Understand basic psychological first aid principles.						
7-8	5.1 Explain Psychological First aid 5.2 Discuss Principles of Psychological First Aid i.e "Look, Listen, Link" approach 5.3 Discuss Referral pathways	• Explain Psychological First aid • Discuss Principles of Psychological First Aid I.e • "Look, Listen, Link" approach • Discuss Referral pathways	Case discussions Evidence-based review Psychosocial support messages Discuss coping strategy National mental health policy documents Charts and slides Lecture notes Projector			
General Objective 6.0: Understand effective communication skills in distressed populations.						
9-10	6.1 Discuss Communication Skills in Mental Health Support 6.2 Describe Active listening 6.3 Describe Empathy and non-judgmental approach 6.4 Discuss Confidentiality and ethical considerations 6.5 Discuss Breaking bad	• Discuss Communication Skills in Mental Health Support • Describe Active listening • Describe Empathy and non-judgmental	Case discussions Evidence-based review Psychosocial support messages Discuss coping strategy National mental health policy			

	news basics	approach • Discuss Confidentiality and ethical considerations • Discuss Breaking bad news basics	documents Charts and slides Lecture notes Projector			
General Objective 7.0: Promote mental well-being in public health settings						
11-12	7.1 Explain mental well being 7.2 Discuss ways of Promoting Mental Well-being in Public Health Practice 7.3 Discuss Stress management techniques 7.4 Describe Burnout prevention in healthcare workers 7.5 Explain methods of Building resilience 7.6 Explain Community Mental Health Promotion	• Explain mental well being • Discuss ways of Promoting Mental Well-being in Public Health Practice • Discuss Stress management techniques • Describe Burnout prevention in healthcare workers • Explain methods of Building resilience • Explain Community Mental Health Promotion	White Board Public Addressing System Projector Charts and slides Lecture notes Projector			
Course Assessment Course Work: 20% Tests: 20% Examination: 60% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY (IDV)		
COURSE: COLD CHAIN MANAGEMENT AND VACCINE LOGISTICS	**COURSE CODE: IDV 215**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 Hours/week	**THEORETICAL: 1 Hour/week**
YEAR: II SEMESTER: I	**PRE-REQUISITE:**	**PRACTICAL: 1 Hour/week**
GOAL: This course is designed to equip students with knowledge and practical skills in cold chain management, vaccine storage, handling, transportation, monitoring and logistics systems.		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand principles of cold chain system;
2.0 Know cold chain equipment and their functions;
3.0 Understand vaccine storage and handling procedures correctly;
4.0 Monitor and document temperature effectively;
5.0 Manage vaccine logistics and inventory systems.

PROGRAMME: NATIONAL DIPLOMA DISEASES INFECTIOUN AND VACCINOLOGY (IDV)						
COURSE: COLD CHAIN MANAGEMENT AND VACCINE LOGISTICS		**COURSE CODE: IDV 215**		**CREDIT UNIT: 2**		
		CONTACT HOURS: 2 Hours/week		**THEORETICAL: 1 Hour/week**		
YEAR: II SEMESTER: I		**PRE-REQUISITE:**		**PRACTICAL: 1 Hour/week**		
COURSE SPECIFIFCATION: THEORETICAL AND PRACTICAL						
General Objective 1.0: Understand Principles of Cold Chain System (Week 1–2)						
THEORETICAL CONTENT				**PRACTICAL CONTENT**		
Week	**Specific Learning Outcome (Theory)**	**Teacher's Activities**	**Resources (Theory)**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-3	1.1 Define cold chain management. 1.2 Explain temperature ranges. 1.3 Explain the principles of cold chain system. 1.4 Explain temperature sensitive vaccines.	• Define cold chain management • Explain temperature ranges. • Explain the principles of cold chain system • Explain temperature sensitive vaccines	White Board Public Addressing System Projector Charts and slides Lecture notes Projector	• Demonstrate temperature ranges	Guide students to: Demonstrate temperature ranges	Thermometer.
General Objective 2.0: Know Cold Chain Equipment						
4-6	2.1 Describe cold chain equipment. 2.2 Describe the categories of cold chain equipment 2.3 Explain the applications/uses of cold chain equipment.	• Describe cold chain equipment. • Describe the categories of cold chain equipment • Explain the applications/uses of cold chain equipment.	White Board Public Addressing System Projector Charts and slides Lecture notes Projector			
General Objective 3.0: Understand vaccine storage and handling procedures correctly						
7-9	3.1 Explain vaccine storage and handling. 3.2 Explain the importance of	• Explain vaccine storage and handling • Explain the importance	White Board Marker Projector	• Visit cold chain facilities • Demonstrate	Guide students to carry out:	Functional cold chain facility

	vaccine storage and proper handling. 3.3 Explain the procedure for vaccine storage and handling.	of vaccine storage and proper handling • Explain the procedure for vaccine storage and handling	Public Addressing System Charts and slides Lecture notes Projector	vaccine storage procedures	• Visitation to cold chain facilities • Vaccine storage procedures	
General Objective 4.0: Monitor and Document Temperature effectively						
10-12	4.1 Explain temperature monitoring methods. 4.2 Explain the use of thermometer and temperature charts. 4.3 Explain vaccine vial monitor (VVM). 4.4 Describe proper documentation of temperature. 4.5 Explain the assessment and verification of vaccine potency. 4.6 Enumerate the visual inspection, cold chain temperature monitoring, shake test methods, expiry date verification and integrated approach.	• Prepare lecture and slides to: • Explain temperature monitoring methods. • Explain the use of thermometer and temperature charts • Explain vaccine vial monitor (VVM) • Describe proper documentation of temperature • Explain the assessment and verification of vaccine potency • Enumerate the visual inspection, cold chain temperature monitoring, shake test methods, expiry date verification and integrated approach	White Board Marker Projector Public Addressing System Charts and slides Lecture notes Projector	• Record temperature and interpret VVM • Use Temperature charts and document	Guide students to: • Record temperature and interpret VVM • Use Temperature charts and document	Temperature charts Thermometers VVM Samples
General Objective 5.0: Manage Vaccine Logistics & Inventory						
13-15	5.1 Explain vaccine management 5.2 Explain vaccine supply chain structure	• Explain vaccine management • Explain vaccine supply chain structure	White Board Marker Projector Vaccine Inventory			

	5.3 Explain national immunisation logistics system 5.4 Explain challenges in vaccine distribution 5.5 Explain vaccine inventory charts 5.6 Explain forecasting and stock management.	• Explain national immunisation logistics system • Explain challenges in vaccine distribution • Explain vaccine inventory charts • Explain forecasting and stock management.	Charts Stock cards Flip charts			
Course Assessment Course Work: 10% Tests: 10% Practical: 40% Examination: 40% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY (IDV)		
COURSE: BIOSTATISTICS	**COURSE CODE: IDV 216**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 Hours/week	**THEORETICAL: 1 Hour/week**
YEAR: II SEMESTER: I	**PRE-REQUISITE:**	**PRACTICAL: 1 Hour/week**
GOAL: This course is designed to enable students acquire foundational knowledge in statistical principles and methods applicable to public health, infectious disease surveillance, vaccine trials, and healthcare research.		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand fundamental statistical concepts;
2.0 Know the measure of central tendency;
3.0 Understand measurement of dispersion;
4.0 Understand probability and distributions;
5.0 Understand the practical application of basic statistical tests and the use of software in data analysis;
6.0 Understand statistical findings in health research;
7.0 Know how to organize, report and present health data.

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: BIOSTATISTICS	COURSE CODE: IDV 216	CREDIT UNIT: 2
	CONTACT HOURS: 2 Hours/Week	THEORETICAL: 1 Hour/Week
YEAR: II SEMESTER: I	PRE-REQUISITE:	PRACTICAL: 1 Hour/Week
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to enable students acquire foundational knowledge in statistical principles and methods applicable to public health, infectious disease surveillance, vaccine trials, and healthcare research.		
General Objective 1.0: Understand fundamental statistical concepts.		

THEORETICAL CONTENT				PRACTICAL CONTENT		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-2	1.1 Define statistics and biostatistics. 1.2 Differentiate between statistics and biostatistics. 1.3 Explain types of data (qualitative and quantitative). 1.4 Differentiate population and sample 1.5 Explain sample size calculation.	• Explain statistics and biostatistics • Differentiate between statistics and biostatistics • Explain types of data (qualitative & quantitative) • Differentiate population and sample • Explain sample size calculation	Statistics textbook Charts Sample datasets	• Determine sample size using data analytics software • Obtain quantitative data and qualitative data	Guide students to: • Determine sample size using data analytics software • Obtain; - Quantitative data - Qualitative data	Statistical Package, Computer, Charts Data sets, Calculator
General Objective 2.0: Know the measure of central tendency.						
3-4	2.1 Define mean, median, mode 2.2 Describe grouped data calculations 2.3 Explain ways of	• Define mean, median, mode • Describe grouped data calculations • Explain ways of	Calculator Epidemiological data Worksheets	• Compute mean, median, mode • Calculate standard deviation • Calculate grouped	Guide students to: • Compute mean, median, mode • Calculate standard	Case definition charts, Video clips, Computers Case definition charts, Graph Sheets

	interpreting average values in disease data	interpreting average values in disease data		data • Interpreting average values in disease data	deviation • Calculate grouped data • Interpreting average values in disease data	
General Objective 3.0: Understand measurement of dispersion						
5-6	3.1 Define dispersion 3.2 Explain range and variance 3.3 Explain variability in health statistics	• Explain dispersion • Explain range and variance • Describe variability in health statistics	Lecture note Textbooks Worksheets Projectors	• Compute range and variance • Interpret variability in health statistics	Guide students to: • Compute range and variance • Interpret variability in health statistics	Epidemiological data, Calculators, Graph Charts
General Objective 4.0: Understand probability and distributions.						
7-9	4.1 Define probability 4.2 Explain normal distribution 4.3 Describe probability in disease prediction	• Explain probability • Explain normal distribution • Describe probability in disease prediction	Textbook, charts, case data			
General Objective 5.0: Understand the practical application of basic statistical tests and the use of software in data analysis.						
10-11	5.1 Explain statistical test 5.2 Explain types of statistical testing (hypothesis testing 5.3 Describe simple t-test (conceptual level) 5.4 Explain chi-squared test application	• Define statistical test • Describe types of statistical testing (hypothesis testing • Describe simple t-test (conceptual level) • Explain chi-squared test application	Research samples, Worksheets, Case examples	• Conduct: - Chi – squared - simple t-test (conceptual level)	Guide students to: Conduct Chi – squared and simple t-test (conceptual level)	Worksheets, Computer Statistical packages, Calculators etc
General Objective 6.0: Understand statistical findings in health research.						

12-13	6.1 Explain p-value and confidence interval 6.2 Explain research findings 6.3 Describe epidemiological tables	• Explain p-value and confidence interval • Explain research findings • Describe epidemiological tables	Research articles Published data Journal papers	• Interpret p-value and confidence interval • Critically evaluate research findings • Analyse epidemiological tables	Guide Students to: Interpret p-value and confidence interval Critically evaluate research findings Analyse epidemiological tables	Worksheets Computer Statistical packages Calculators
General Objective 7.0: Know how to organize, report and present health data.						
14-15	7.1 Explain reporting of health data 7.2 Describe types of reporting system 7.3 Describe bar charts, pie charts, histograms 7.4 Describe frequency tables 7.5 Explain graphic interpretation	• Explain reporting of health data • Describe types of reporting system • Describe bar charts, pie charts, histograms • Describe frequency tables • Explain graphic interpretation	Sample data, Graph sheets, Charts etc	• Organize health data • Report health data • Present Health data using the following: Bar charts, pie charts, histograms, frequency tables • Interpret graphical presentations	Guide students to: • Organize health data • Report health data • Present Health data: Bar charts, pie charts, histograms, frequency tables • Interpret graphical presentations	Video clips, Computers Calculators, Graph Charts, Software packages
Course Assessment Course Work: 10% Tests: 10% Practical: 40% Examination: 40% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: SEMINARS IN INFECTIOUS DISEASES AND VACCINOLOGY	**COURSE CODE: IDV 217**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 Hours/week	**THEORETICAL: 2 Hours/week**
YEAR: II SEMESTER: I	**PRE-REQUISITE: 0**	**PRACTICAL: 0**
GOAL: This course is designed to enable students develop skills in academic inquiry, scientific presentation, evidence-based discussion, and professional communication in Infectious Disease and Vaccinology (IDV).		
GENERAL OBJECTIVES On completion of this course, the student should be able to: 1.0 Understand academic seminar and scientific communication; 2.0 Conduct a basic literature search and information gathering; 3.0 Prepare and deliver structured seminar presentations; 4.0 Critically analyse scientific information; 5.0 Demonstrate academic writing skills; 6.0 Engage in professional discussion and peer review; 7.0 Understand the importance of professional development in academic presentation.		

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY						
COURSE: SEMINARS IN INFECTIOUS DISEASES AND VACCINOLOGY		COURSE CODE: IDV 217		CREDIT UNIT: 2		
		CONTACT HOURS: 2 hours/week		THEORETICAL: 2 hours/week		
YEAR: II SEMESTER: I		PRE-REQUISITE: None		PRACTICAL:		
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL						
GOAL: This course is designed to enable students develop skills in academic inquiry, scientific presentation, evidence-based discussion, and professional communication in Infectious Disease and Vaccinology (IDV).						
General Objective 1.0: Understand Academic Seminar and Scientific Communication						
THEORETICAL CONTENT				PRACTICAL CONTENT		
Week	Specific Learning Outcome	Teacher's Activities	Resources	Specific Learning Outcome	Teacher's Activities	Resources
1	1.1 Define seminar and its purpose in academic training. 1.2 Explain components of a seminar paper. 1.3 Discuss ethics in academic presentation (plagiarism, referencing). 1.4 Describe contemporary issues in infectious diseases and vaccinology.	• Define seminar and its purpose in academic training. • Explain components of a seminar paper. • Discuss ethics in academic presentation (plagiarism, referencing). • Describe contemporary issues in infectious diseases and vaccinology	Sample seminar papers, Referencing guide			
General Objective 2.0: Conduct a basic literature search and information gathering						
2	2.1 Define literature and information gathering. 2.2 Enumerate sources of scientific information 2.3 Describe basic literature search techniques.	• Define literature and information gathering • Outline sources of scientific information • Describe Basic literature search techniques	Journals, Library materials, Internet access etc			

	2.4 Explain how to evaluate credible sources. 2.5 Explain referencing styles.	• Explain how to evaluate credible sources • Explain referencing styles				
General Objective 3.0: Prepare and deliver structured seminar presentations.						
3-4	3.1 Identify emerging and priority topics such as: i. Antimicrobial resistance; ii. Vaccine hesitancy; iii. Emerging infectious diseases; iv. Outbreak response strategies; v. Immunization equity 3.2 Engage in topic allocation and individual reporting	• Introduce Students to emerging and priority topics such as Antimicrobial resistance, Vaccine hesitancy, Emerging infectious diseases, Outbreak response strategies, Immunization equity • Engage in topic allocation and individual reporting	Journals, Library materials, Internet access etc			
General Objective 4.0: Critically analyse scientific information						
5-7	4.1 Explain Seminar Paper Development. 4.2 Discuss Seminar Structuring: introduction, body, conclusion and recommendations, references. 4.3 Discuss relevance of Integrating evidence in writing. 4.4 Explain how to develop logical arguments. 4.5 Discuss how to write abstracts.	• Explain Seminar Paper Development • Discuss Seminar Structuring: introduction, body, conclusion and recommendations, references. • Discuss relevance of Integrating evidence in writing • Explain how to develop logical arguments • Discuss how to write abstracts	Journals, Library materials, Internet access etc			

General Objective 5.0: Demonstrate academic writing skills						
8-10	5.1 Discuss oral presentation Skills 5.2 Explain public speaking skills 5.3 Describe PowerPoint presentation slide design principles. 5.4 Explain time management. 5.5 Explain how to handle or answer question after presentation	• Develop Oral Presentation Skills • Develop Public speaking skills • Describe PowerPoint presentation slide design principles • Explain time management • Explain how to handle questions.	Journals, Library materials, Internet access etc			
General Objective 6.0: Engage in professional discussion and peer review.						
11-13	6.1 Explain the importance of attending seminar presentation. 6.2 Explain the importance of students' engagement during seminar. 6.3 Explain the importance of submitting final written paper	• Explain the importance of attending seminar presentation. • Explain the importance of students' engagement during seminar • Explain the importance of submitting final written paper	Journals, Library materials, Internet access etc			
General Objective 7.0: Understand the importance of professional development in academic presentation.						
14-15	7.1 Explain the importance of professional development. 7.2 Explain the importance of reflective learning. 7.3 Explain the importance of Professional growth.	• Explain the importance of Professional Development • Explain the	Journals, Library materials, Internet access etc Journals, Library materials, Internet access etc			

	7.4 Describe the role of research in infectious disease control	importance of Reflective learning • Explain the importance of Professional growth • Describe the role of research in infectious disease control				

Course Assessment
Course Work: 20%
Tests: 20%
Examination: 60%
Total: 100%

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: RESEARCH METHODOLOGY	**COURSE CODE: IDV 218**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 hours/week	**THEORETICAL: 2 hours/week**
YEAR: II SEMESTER: I	**PRE-REQUISITE:**	**PRACTICAL:**
GOAL: This course is designed to equip students with the knowledge on the nature, process and techniques of research		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand the concept and nature of research;
2.0 Understand the formulation of research problem/topic;
3.0 Understand steps of research methodologies;
4.0 Understand the general format for research for research writing, reporting, utilisation and dissemination;
5.0 Understand the importance of citation and referencing;
6.0 Understand the ethical consideration in research;
7.0 Understand the application of Artificial Intelligence and other search engines for research.

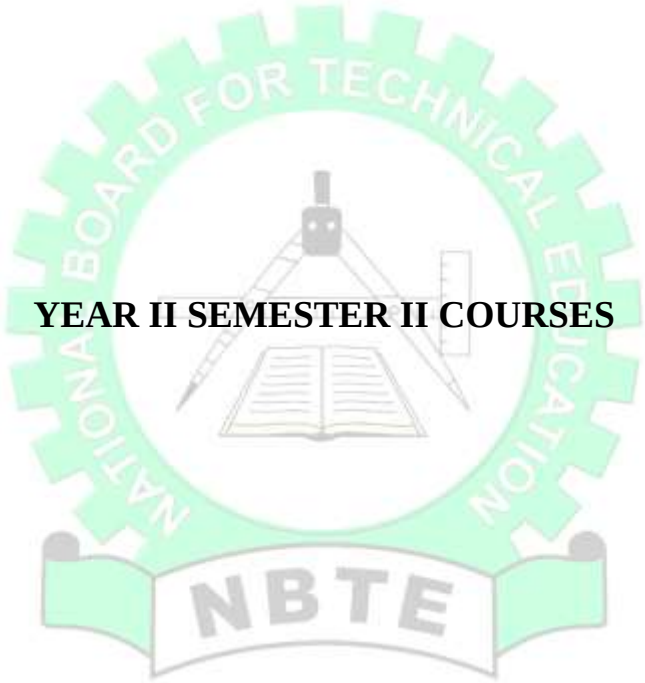
PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY					
COURSE: RESEARCH METHODOLOGY		**COURSE CODE: IDV 218**		**CREDIT UNIT: 2**	
		CONTACT HOURS: 2 hours/week		**THEORETICAL: 2 hours/week**	
YEAR: II SEMESTER: I		**PRE-REQUISITE:**		**PRACTICAL: 0**	
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL					
GOAL: This course is designed to equip students with the knowledge on the nature, process and techniques of research					
General Objective 1.0 Understand the concept and nature of research					
THEORETICAL CONTENT				**PRACTICAL CONTENT**	
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-2	1.1 Define research 1.2 Explain Research methodology 1.3 Explain types of research 1.4 Explain the nature of research 1.5 Explain the Characteristics of research 1.6 Explain the Significance of research in infectious disease control and vaccinology 1.7 Explain the application of research in health care system	• Define of research • Explain Research methodology • Explain types of research • Explain the nature of research • Explain the Characteristics of research • Explain the Significance of research in infectious disease control and vaccinology • Explain the application of research in health care system	Textbooks Journals, Board maker, Maker, Textbooks Journals Board maker Maker			
General Objective 2.0 Understand the formulation of research problem/topic						

3	2.1 Define research problem/topic 2.2 Explain the techniques of research topic formulation 2.3 Explain characteristics of a researchable topic 2.4 Describe the factors to consider in selecting a research topic	• Define research problem/topic • Explain the techniques of research topic formulation • Explain characteristics of a researchable topic • Describe the factors to consider in selecting a research topic	Textbooks Journals Board maker Maker			
• **General Objective 3.0: Understand steps of research methodologies**						
4 - 6	3.1 Enumerate the steps in research methodology. 3.2 Explain how to identify research problems. 3.3 Explain how to review literature. 3.4 Explain how to formulate research objectives. 3.5 Describe research design 3.6 Explain sampling design 3.7 Enumerate data collection methods. 3.8 Explain data collection 3.9 Explain data presentation and analysis. 3.10 Explain interpretation of results. 3.11 Explain conclusion and recommendations.	• Enumerate the steps in research methodology • Explain how to identify research problems • Explain how to review literature • Explain how to formulate research objectives • Describe research design • Explain sampling design • Enumerate data collection methods • Explain data	Textbooks Journals Board maker Maker etc			

		collection • Explain data presentation and analysis • Explain interpretation of result • Explain conclusion and recommendation				
General Objective 4.0: Understand the General format for research for research writing, reporting, utilisation and dissemination						
7-8	4.1 Describe the preliminary pages. 4.2 Explain the chapters for research reporting. 4.3 Describe the format for research reporting. 4.4 Explain ways to disseminate results of research. 4.5 Explain the factors for effective utilization and benefit of research in the community.	• Explain the preliminary pages • Explain the chapters for research reporting • Describe the format for research reporting • Explain ways to disseminate results of research • Explain the factors for effective utilization and benefit of research in the community	Textbooks Journals Board maker Maker			
General Objective 5.0: Understand the importance of citation and referencing						
9-11	5.1 Explain the various style and techniques for citation. 5.2 Explain the various referencing style in research. 5.3 Explain why citation and referencing is important in research.	• Explain the various style and techniques for citation • Explain the various referencing style in research • Explain why citation and referencing is	Textbooks, Journals, Board maker, Maker etc			

		important in research.				
General Objective 6.0: Understand the ethical consideration in research						
12-12	6.1 Explain the meaning of ethical consideration in research. 6.2 Explain the application of ethical consideration in research. 6.3 Explain the importance of ethical consideration in research. 6.4 Define plagiarism 6.5 Explain the importance of consent in research.	• Explain the meaning of ethical consideration in research • Explain the application of ethical consideration in research • Explain the importance of ethical consideration in research. • Define plagiarism • Explain the importance of consent in research	Textbooks Journals Board maker Maker			
General Objective 7.0: Understand the application of Artificial Intelligence and other search engines for research						
13-15	7.1 Define artificial intelligence. 7.2 Describe AI applications that can be used for research 7.3 Explain generative AI 7.4 Describe search engines relevant for research purposes	• Define artificial intelligence • Describe AI applications that can be used for research • Explain generative AI • Describe search engines relevant for research purposes				

Course Assessment	
Course Work:	20%
Tests:	20%
Examination:	60%
Total:	100%



YEAR II SEMESTER II COURSES

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES CONTROL AND VACCINOLOGY		
COURSE: INTRODUCTION TO HEALTH EDUCATION AND PROMOTION	**COURSE CODE: IDV 221**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 Hours/week	**THEORETICAL: 1 hour/week**
YEAR: II SEMESTER: II	**PRE-REQUISITE:**	**PRACTICAL: 1 hour/week**
GOAL: This course is designed to provide students with the knowledge and skills to understand the concept of health education and promotion for positive behavioural change		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand the concepts and principles of health and health education;
2.0 Understand the historical basis of health education;
3.0 Know the basic concepts and principles of Health Promotion;
4.0 Know the methods/strategies of health education;
5.0 Understand the basic principles and methods of effective communication in health promotion;
6.0 Know the stages in community diagnosis;
7.0 Appreciate health promotion activities;
8.0 Understand the procedure for the care and maintenance of audio-visual aids in health promotion practice.

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES CONTROL AND VACCINOLOGY		
COURSE: INTRODUCTION TO HEALTH EDUCATION AND PROMOTION	COURSE CODE: IDV 221	CREDIT UNIT: 2
	CONTACT HOURS: 2 hours/week	THEORETICAL: 1 hour/week
YEAR: II SEMESTER: II	PRE-REQUISITE:	PRACTICAL: 1 hour/week
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to provide students with the knowledge and skills to understand the concept of health education and promotion for positive behavioural change		
General Objective 1.0: Understand the concepts and principles of health and health education		

THEORETICAL CONTENT				PRACTICAL CONTENT		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1 -2	1.1 Explain the concept of health. 1.2 Define health education. 1.3 Explain the role of health education in promoting health. 1.4 Define health triangle 1.5 Describe health triangle in relation to health education. 1.6 Explain the components of health in relation to health education. 1.7 State the aim and objectives of health education.	• Explain the concept of health • Define health education • Explain the role of health education in promoting health • Define health triangle • Describe health triangle in relation to health education • Explain the components of health in relation to health education • State the aim and objectives of health education	Textbooks, Marker board, Overhead slides, Projector			
General Objective 2.0: Understand the historical basis of health education						

3	2.1 Discuss the historical background of health education and promotion. 2.2 Highlight the contributions of professional development in health education. 2.3 Discuss past, present and future trends in health education and promotion.	• Discuss the historical background of health education and promotion • Highlight the contributions of professional development in health educations • Discuss past, present and future trends in health education and promotion	Textbooks Marker board Projector			
General Objective 3.0: Know the basic concepts and principles of Health Promotion						
4-5	3.1 Define Health Promotion 3.2 Explain concept of health promotion. 3.3 Illustrate the three pillars of health promotion by WHO. 3.4 Explain the pillars of health promotion. 3.5 State the settings for health promotion. 3.6 Outline the strategies for behavioural change. 3.7 Enumerate methods of health promotion	• Explain Health Promotion • Explain concept of health promotion • Explain the pillars of health promotion • Explain the settings for health promotion • Explain the strategies for behavioural change. • Enumerate methods of health promotion	Textbook Marker board Chart Overhead slides Projector	• Illustrate the three pillars of health promotion by WHO using diagrams	Guide the student to: illustrate the three pillars of health promotion by WHO	Flip Chart, Projector
General Objective 4.0: Understand the basic principles and methods of effective communication in health promotion						
6-7	4.1 Define communication.	• Define communication. • Describe the process of	Textbook Chalkboard	• Prepare ISC materials for health	Guides students through the	Charts Posters Computer IEC

	4.2 Describe the process of communication. 4.3 Describe some communication theories. 4.4 Explain elements of effective communication. 4.5 State the purpose of communication. 4.6 Enumerate various communication materials and equipment, e.g. posters, audio-visuals, etc. 4.7 Describe preparation of IEC materials. 4.8 Explain preparation of proposals for capacity building in effective communication of health promotional messages. 4.9 Explain barriers to effective communication.	communication. • Describe some communication theories. • Explain elements of effective communication. • State the purpose of communication. • Enumerate various communication materials and equipment, e.g. posters, audio-visuals, etc. • Describe preparation of IEC materials. • Explain Preparation of proposals for capacity building in effective communication of health promotional messages. • Explain barriers to effective communication	Posters Charts Audio-visuals Visuals (computer)	interventions. • Dramatize the elements of effective communication	preparation and dramatization	material (handbills
General Objective 5.0: Know the methods/strategies of health education						
8-9	5.1 Explain the methods and strategies of health education and promotion. 5.2 Explain the	Prepare slide and lecture notes: • Explain the methods and strategies of health education and promotion	Textbooks Marker board Projector	• Carry out health education using different methods and strategies • Use IEC the	Guide students to: • Carry out health education using different	Public address system Posters Costumes Flip charts Projector Video clips

	classification of the methods/strategies of health education and promotion. 5.3 Explain the materials used in health education and promotion. 5.4 Explain steps in various strategies of health education and promotion. 5.5 Explain the factors to consider in selecting methods for health education and promotion.	• Explain the classification of the methods/strategies of health education and promotion • Explain the materials used in health education and promotion • Explain steps in various strategies of health education and promotion • Explain the factors to consider in selecting methods for health education and promotion		materials to conduct health education • Demonstrate various strategies in health education	methods and strategies • Use IEC the materials to conduct health education • Demonstrate various strategies in health education	
General Objective 6.0: Know the stages in community diagnosis						
10-11	6.1 Define the following terms: i. Community, ii. Community diagnosis iii. Community participation & involvement iv. Community mobilization. 6.2 Describe the organisational structure of a community 6.3 Describe the process of entering a community (Entry behaviour) 6.4 Describe the role and	• Explain the following terms; • Community • Community diagnosis • community participation & involvement • community mobilization. • Describe the process of entering a community (Entry behaviour) • Describe the	Textbooks Chalkboard Charts Observation schedule Interview guide Questionnaire	• Design an organisational structure of the community • Demonstrate the methods used for data collection in community diagnosis e.g home based record. • Prepare an action plan for health promotion intervention	Guide students to: • Design an organisational structure of the community • Demonstrate the methods used for data collection in community diagnosis eg home based record. • Prepare an	Flip charts Institutional organogram Marker Flex banner

	rationale of community diagnosis in health promotion. 6.5 Explain the methods used for data collection in community diagnosis e.g. home based record. 6.6 Explain the preparation of an action plan for health promotion intervention.	organizational structure of a community			action plan for health promotion intervention	
General Objective 7.0 Appreciate health promotion activities						
12-13	7.1 Explain health promotion activities 7.2 Explain how to design indicators for measuring health intervention programme. 7.3 Explain how to carry out process and outcome evaluation.	• Narrate health promotion activities • Show how to design indicators for measuring health intervention programme. • Discuss how to carry out process and outcome evaluation.	Textbook Marker board Chart Overhead slides Projector	• Design material resources for various health promotion interventions • Carry out health talk on: - Proper hand washing - Use of PPE • Carry out process and outcome evaluation	Guides students to: • Design material resources for various health promotion interventions • Carry out health talk on proper hand washing • Use of PPE • Carry out process and outcome evaluation	Cardboard Flip charts Posters Workplan Flex Banner Jingle
General Objective 8.0: Understand the procedure for the care and maintenance of audio-visual aids in health promotion practice						
14-15	8.1 Describe the methods for proper care and routine maintenance of: - Overhead slide and LCD projector	• Explain the method for proper care and routine maintenance of: - Overhead slide and • LCD projectors - Lenses, digital cameras,	Textbook Chalkboard Overhead slide LCD projectors Lenses	• Demonstrate the proper handling, care and maintenance of Overhead slide, LCD projectors, lenses, digital cameras, video	Guides students through the demonstration	Overhead slide LCD projectors Lenses Digital camera Video recorder Playback head

	Lenses, digital cameras, video recorder, and playback heads, 8.2 Describe the precautionary measures involved in the handling of audio-visual aids	video recorder, and playback heads, • Explain the precautionary measures involved in the handling of audio-visual aids	Digital camera Video recorder Playback head	recorder, playback head.		
Course Assessment Course Work: 10% Tests: 10% Practical: 40% Examination: 40% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: DIET THERAPY IN INFECTIOUS DISEASE MANAGEMENT	**COURSE CODE: IDV 222**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2hours/week	**THEORETICAL: 1 hour/week**
YEAR: II SEMESTER: II	**PRE-REQUISITE:**	**PRACTICAL: 1 hour/week**
GOAL: This course is designed to equip students with the knowledge and skills required to apply nutritional and diet therapy principles in the management and recovery of patients with infectious diseases.		

GENERAL OBJECTIVES

On completion of this course, students should be able to:

1.0 Understand the role of nutrition in infection prevention and recovery;
2.0 Understand the interaction between infectious diseases and nutritional status;
3.0 Know nutritional requirements during infectious diseases;
4.0 Plan diet therapy for patients with common infectious diseases;
5.0 Understand nutritional management in immunocompromised individuals;
6.0 Comprehend nutrition education and promotion in infectious disease control programmes.

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: DIET THERAPY IN INFECTIOUS DISEASE MANAGEMENT	COURSE CODE: IDV 222	CREDIT UNIT: 2
	CONTACT HOURS: 2 hours/week	THEORETICAL: 2 hour/week
YEAR: II SEMESTER: 2	PRE-REQUISITE:	PRACTICAL: 0
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to enable students acquire		
General Objective 1.0: Understand the role of nutrition in infection prevention and recovery		

THEORETICAL CONTENT				PRACTICAL CONTENT		
Week	Specific Learning Outcome	Teacher's Activities	Resources	Specific Learning Outcome	Teacher's Activities	Resources
1-2	1.1 Define Nutrition and itemize classes of food 1.2 Define dietetics 1.3 Describe the Relationship Between Nutrition and Infection 1.4 Define diet therapy. 1.5 Explain the concept of therapeutic nutrition. 1.6 Describe the role of nutrition in immune function. 1.7 Explain how infections affect nutritional status.	• Define Nutrition and itemize classes of food • Define dietetics • Describe the Relationship Between Nutrition and Infection • Define diet therapy. • Explain the concept of therapeutic nutrition. • Describe the role of nutrition in immune function. • Explain how infections affect nutritional status.	Charts and nutrition guides, WHO nutrition guidelines			
General Objective 2.0: Understand the interaction between infectious diseases and nutritional status.						

3-4	2.1 Discuss nutritional requirements during Infection 2.2 Explain energy requirements during infections. 2.3 Describe protein requirements for tissue repair. 2.4 Discuss the importance of vitamins and minerals (A, C, D, Zinc, Iron). 2.5 2.5 Explain fluid balance during febrile illnesses	• Discuss nutritional requirements during Infection • Explain energy requirements during infections. • Describe protein requirements for tissue repair. • Discuss the importance of vitamins and minerals (A, C, D, Zinc, Iron) • Explain fluid balance during febrile illnesses	Charts and nutrition guides WHO nutrition guidelines			
General Objective 3.0: Know nutritional requirements during infectious diseases.						
5-6	3.1 Discuss diet therapy in common infectious diseases 3.2 Describe dietary management of: i. HIV/AIDS; ii. Tuberculosis; iii. Malaria; iv. Typhoid fever; v. Diarrheal diseases; vi. COVID-19 and respiratory infections etc 3.3 Discuss the effect of non-compliance with dietary management.	• Explain Diet Therapy in Common Infectious Diseases • Describe dietary management of: o HIV/AIDS o Tuberculosis o Malaria o Typhoid fever o Diarrheal diseases o COVID-19	Charts and nutrition guides WHO nutrition guidelines			

		and respiratory infections etc • Discuss the effect of non-compliance with dietary management				
General Objective 4.0: Plan diet therapy for patients with common infectious diseases.						
7-8	4.1 Define immunocompromised conditions. 4.2 Describe the nutritional needs of immunocompromised patients. 4.3 Explain the role of micronutrients in immunity. 4.4 Describe foods that enhance immune function.	• Define immunocompromised conditions • Describe the nutritional needs of immunocompromised patients. • Explain the role of micronutrients in immunity. • Describe foods that enhance immune function.	Textbook Marker board Chart Overhead slides Projector Whiteboard Nutrition guides WHO nutrition guidelines			
General Objective 5.0: Understand nutritional management in immunocompromised individuals.						
9-11	5.1 Define immunocompromised individuals 5.2 Explain the therapeutic diets in fever and gastrointestinal Infections. 5.3 Describe the diet for fever and infection recovery. 5.4 Explain diet therapy for diarrhea and vomiting. 5.5 Explain soft diet, liquid diet, and high-protein diet	• Define immunocompromised individuals • Explain the therapeutic diets in fever and gastrointestinal Infections • Describe the diet for fever and infection	Textbook Marker board Chart Overhead slides Projector Whiteboard Nutrition guides WHO nutrition guidelines			

	indications.	recovery. • Explain diet therapy for diarrhea and vomiting. • Explain soft diet, liquid diet, and high-protein diet indications.				
General Objective 6.0: Comprehend nutrition education and promotion in infectious disease control programmes						
12-15	6.1 Describe nutrition education in Infectious Disease Control 6.2 Explain the role of nutrition education in disease prevention. 6.3 Describe culturally appropriate nutrition messages. 6.4 Promote healthy dietary habits in communities.	• Describe nutrition education in Infectious Disease Control • Explain the role of nutrition education in disease prevention. • Describe culturally appropriate nutrition messages. • Promote healthy dietary habits in communities.				
Course Assessment Course Work: 20% Tests: 20% Examination: 60% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: PHARMACOLOGY AND ESSENTIAL MEDICINES IN INFECTIOUS DISEASES	**COURSE CODE: IDV 223**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2hours/week	**THEORETICAL: 1 hour/week**
YEAR: II SEMESTER: II	**PRE-REQUISITE:**	**PRACTICAL: 1 hour/week**
GOAL: This course is designed to enable students to acquire foundational knowledge of pharmacology and essential medicines used in the prevention and treatment of infectious diseases, and to apply safe medication-handling principles in public health and vaccinology practice.		
GENERAL OBJECTIVES: On completion of this course, the student should be able to: 1.0 Understand basic pharmacological concepts and principles relevant to infectious diseases; 2.0 Understand essential medicines used in infectious disease management; 3.0 Understand mechanisms of action, indications, contraindications, and side effects of common anti-infective agents; 4.0 Know safe medicine storage, handling, and distribution practices; 5.0 Apply principles of antimicrobial stewardship; 6.0 Recognize adverse drug reactions and pharmacovigilance processes; 7.0 Understand national essential medicines policy and logistics systems.		

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: PHARMACOLOGY AND ESSENTIAL MEDICINES IN INFECTIOUS DISEASES	**COURSE CODE: IDV 223**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2hours/week	**THEORETICAL: 1 hour/ week**
YEAR: II SEMESTER: II	**PRE-REQUISITE:**	**PRACTICAL: 1 hour/week**
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to enable students to acquire foundational knowledge of pharmacology and essential medicines used in the prevention and treatment of infectious diseases, and to apply safe medication-handling principles in public health and vaccinology practice.		
General Objective 1.0: Understand basic pharmacological concepts and principles relevant to infectious diseases		

THEORETICAL CONTENT				**PRACTICAL CONTENT**		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-2	1.1 Define pharmacology and its branches. 1.2 Explain pharmacokinetics (Absorption, Distribution, Metabolism, and Excretion (ADME)). 1.3 Explain pharmacodynamics. 1.4 Describe drug classifications.	• Define pharmacology and its branches. • Explain pharmacokinetics [Absorption, Distribution, Metabolism, and Excretion (ADME)]. • Explain pharmacodynamics. • Describe drug classifications.	WHO Model Formular, National Essential Medicines List (NEML), Projector, charts	• Identify dosage forms (tablet, suspension, injectable). • Interpret basic drug labels.	Demonstration of dosage forms Label interpretation exercises	Sample drug packages Mock prescriptions
General Objective 2.0: Understand essential medicines used in infectious disease management.						
3-4	2.1 State the classes of antibiotics. 2.2 Describe Antivirals and anti-retroviral	• State the classes of antibiotics • Describe Antivirals	Standard treatment guidelines, National TB and HIV protocols etc			

	2.3 Describe Antimalarials 2.4 Describe Antifungals. 2.5 Describe Anti-TB medicine.	and anti-retroviral • Describe Antimalarials • Describe Antifungals • Describe Anti-TB medicine				
General Objective 3.0: Understand actions, indications, contraindications, and side effects of common anti-infective agents						
5	3.1 Explain common anti-infective agents. 3.2 Describe indications common anti-infective agents. 3.3 Explain contra indications and side effects of common anti-infective agents.	• Explain common anti-infective agents • Describe indications common anti-infective agents • Explain contra indications and side effects of common anti-infective agents	Textbook Marker board Chart Overhead slides Projector Whiteboard etc			
General Objective 4.0: Know safe medicine storage, handling, and distribution practices.						
6-7	4.1 Describe Safe Medicine Storage and Cold Chain Principles 4.2 Discuss Storage conditions for medicines. 4.3 Discuss expiry date management. 4.4 Describe stock rotation (First to Expire First Out FEFO). 4.5 Discuss Vaccine versus	• Describe Safe Medicine Storage and Cold Chain Principles • Discuss Storage conditions for medicines • Discuss Expiry date management • Describe Stock rotation (First to Expire First Out	Textbook Marker board Chart Overhead slides Projector Whiteboard Sample stock cards etc			

	medicine storage differences. 4.6 Explain methods of drug distribution.	FEFO) • Discuss Vaccine vs medicine storage differences • Explain methods of drug distribution				
General Objective 5.0: Apply principles of antimicrobial stewardship.						
8	5.1 Define antimicrobial stewardship. 5.2 Explain the importance of antimicrobial stewardship. 5.3 Explain rational drug use. 5.4 Explain prescription auditing principles. 5.5 Describe public health consequences of misuse of antimicrobial agents.	• Define antimicrobial stewardship • Explain the importance of antimicrobial stewardship • Explain Rational drug use • Explain Prescription auditing principles • Describe Public health consequences of misuse of antimicrobial agents	Textbook Marker board Chart Overhead slides Projector Whiteboard etc			
General Objective 6.0: Recognize adverse drug reactions and pharmacovigilance processes.						
9-11	6.1 Define adverse drug reaction (ADR). 6.2 Describe types of ADR. 6.3 Explain adverse event following Immunisation (AEFI) & ADR 6.4 Explain the reporting channels of ADR & AEFI in Nigeria.	• Define Adverse Drug Reaction (ADR) • Describe types of ADR • Explain Adverse Event Following Immunisation (AEFI) & ADR • Explain the reporting channels of ADR &	National pharmacovigilance forms Textbook Marker board Chart Overhead slides Projector Whiteboard etc	• Complete mock ADR form • Carry out case review of drug reactions		

		AEFI in Nigeria				
General Objective 7.0: Understand national essential medicines policy and logistics systems.						
12-15	7.1 Discuss essential medicines policy. 7.2 Explain logistics systems. 7.3 Explain the concept of essential medicines. 7.4 Outline WHO essential medicines list. 7.5 Highlight Nigeria National Essential Medicines List. 7.6 Explain drug procurement systems. 7.7 Explain Drug Revolving Fund (DRF) 7.8 Describe supply chain basics.	• Narrate the significance of Essential Medicines Policy • Explain Logistics Systems • Explain the Concept of Essential Medicines • Outline WHO Essential Medicines List • Highlight Nigeria National Essential Medicines List • Explain Drug procurement systems • Explain Drug Revolving Fund (DRF) • Describe Supply chain basics	National policy documents, Textbooks, Marker board, Chart, Overhead slides, Projector, Whiteboard etc	• Stock card completion • Carry ount Simple logistics reporting exercise • Perform Forecasting basic drug needs		
Course Assessment Course Work: 10% Tests: 10% Practical: 40% Examination: 40% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: GLOBAL HEALTH	**COURSE CODE: IDV 224**	**CREDIT UNIT: 1**
	CONTACT HOURS: 1 hour/week	**THEORETICAL: 1 hour/week**
YEAR: II SEMESTER: II	**PRE-REQUISITE:**	**PRACTICAL: 0**
GOAL: This course is designed to enable students understand global health concepts, burden of diseases and strategies for their surveillance, prevention and control.		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand the concept and scope of global health;
2.0 Understand the global burden of infectious diseases;
3.0 Know international health organizations and their roles;
4.0 Understand global disease surveillance systems;
5.0 Understand international health regulations and policies;
6.0 Understand emerging and re-emerging infectious diseases.

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY						
COURSE: GLOBAL HEALTH		COURSE CODE: IDV 224			CREDIT UNIT: 1	
		CONTACT HOURS: 1 hour/week			THEORETICAL: 1 hour/week	
YEAR: II SEMESTER: I		PRE-REQUISITE: Introduction to Infectious Diseases			PRACTICAL: 0	
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL						
GOAL: This course is designed to enable students understand global health concepts, burden diseases and strategies for their surveillance, prevention and control						
General Objective 1.0: Understand the concept and scope of global health						
THEORETICAL CONTENT				PRACTICAL CONTENT		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-2	1.1 Define global health. 1.2 Differentiate global health from Public and International Health. 1.3 Explain the importance of coordinated global health	• Define global health • Differentiate Global Health from Public and International Health • Explain the importance of coordinated global health	Textbook Marker board Chart Overhead slides Projector Whiteboard			
General Objective 2.0: Understand the global burden of infectious diseases						
3-4	2.1 Describe major infectious diseases globally. 2.2 Explain morbidity and mortality patterns. 2.3 Highlight global statistics of major killer diseases.	• Describe major infectious diseases globally • Explain morbidity and mortality patterns • Explain global statistics of major killer diseases	Textbook Marker board Chart Overhead slides Projector Whiteboard			

General Objective3.0: Know international health organizations and their roles.						
5-6	3.1 Highlight international health organisations such as; WHO, UNICEF, CDC, world bank, GAVI etc. 3.2 Explain international collaboration. 3.3 Explain the limitations of international health organisations.	• Highlight international health organisations such as; WHO, UNICEF, CDC, GAVI etc. • Explain international collaboration • Explain the limitations of international health organisations	Textbook Marker board Chart Overhead slides Projector Whiteboard			
General Objective 4.0: Understand global disease surveillance systems						
7-8	4.1 Describe global diseases of public health concern. 4.2 Explain international surveillance systems. 4.3 4.3 Enumerate the steps for global diseases surveillance.	• Describe global diseases of public health concern • Explain international surveillance systems • Enumerate the steps for global diseases surveillance	Textbook Marker board Chart Overhead slides Projector Whiteboard			
General Objective 5.0: Understand international health regulations and policies.						
9-10	5.1 Explain International Health Regulations. 5.2 Discuss travel health regulations. 5.3 Describe the challenges for the implementation of international health regulations and policies 5.4 Explain the evolution of	• Explain International Health Regulations • Discuss travel health regulations • Describe the challenges for the implementation of international health	WHO documents Case materials			

	development goals i.e Millennium Development Goal (MDGs) to Sustainable Development Goals (SDGs).	regulations and policies • Explain the evolution of development goals i.e Millennium Development Goal (MDGs) to Sustainable Development Goals (SDGs)				
General Objective 6.0: Understand emerging and re-emerging infectious diseases						
13-15	6.1 Define emerging diseases 6.2 Define re-emerging diseases 6.3 Discuss global preparedness for pandemics	• Prepare lecture notes and slides on: - emerging diseases - re-emerging diseases - global preparedness for pandemics	Research journals WHO reports			
Course Assessment Course Work: 20% Tests: 20% Examination: 60% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: OUTBREAK INVESTIGATION	**COURSE CODE: IDV 225**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 hours/week	**THEORETICAL: 2 Hours/week**
YEAR: II SEMESTER: II	**PRE-REQUISITE:**	**PRACTICAL: 0**
GOAL: This course is designed to equip students with the knowledge required for investigating an outbreak.		
GENERAL OBJECTIVES: On completion of this course, the student should be able to: 1.0 Understand the principles and stages of outbreak investigation; 2.0 Know early warning systems of infectious disease outbreaks; 3.0 Understand steps of outbreak investigation; 4.0 Understand the role of Infection Prevention and Control (IPC) measures during outbreaks.		

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY					
COURSE: OUTBREAK INVESTIGATION		COURSE CODE: IDV 225		CREDIT UNIT: 2	
		CONTACT HOURS: 2 hours/week		THEORETICAL: 2 hours/week	
YEAR: II SEMESTER: I		PRE-REQUISITE:		PRACTICAL: 0	
COURSE SPECIFICATION: THEORETICAL					
GOAL: This course is designed to equip students with the knowledge required for investigating an outbreak.					
General Objective 1.0: Understand the principles and stages of outbreak investigation					
THEORETICAL CONTENT				PRACTICAL CONTENT	
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1 -3	1.1 Define outbreak, epidemic, endemic, and pandemic. 1.2 Differentiate sporadic, propagated, and common-source outbreaks. 1.3 Explain the principles and stages of disease outbreak 1.4 Explain outbreak thresholds.	• Define outbreak, epidemic, endemic, and pandemic. • Differentiate sporadic, propagated, and common-source outbreaks. • Explain the principles and stages of disease outbreak • Explain outbreak thresholds.	Textbooks, Marker board, Chart, Overhead slides, Projector, Whiteboard, National surveillance guidelines, Sample epidemic curves Projector and charts			
General Objective 2.0: Know early warning systems of infectious disease outbreaks.						
4-7	2.1 Discuss early warning systems. 2.2 Discuss the Integrated Disease Surveillance and Response (IDSR)	• Discuss early warning systems • Discuss the Integrated Disease Surveillance and	IDSR forms Reporting templates, Textbooks, Marker board Chart Overhead slides			

	framework 2.3 Enumerate channels for reporting outbreaks. 2.4 Discuss alert and verification processes.	Response (IDSR) framework • Enumerate channels for reporting outbreak • Discuss Alert and verification processes	Projector, Whiteboard, National surveillance guidelines, Sample epidemic curves, Projector and charts			
General Objective 3.0: Understand the steps of outbreak investigation.						
8-11	3.1 Enumerate the steps of outbreak investigation. 3.2 Describe preparation for field work. 3.3 Explain how to determine the existence of an outbreak. 3.4 Describe how to verify the diagnosis (i.e clinical findings and laboratory results). 3.5 Explain how to develop case definition and identify cases. 3.6 Describe data by time, place and persons. 3.7 Explain the formulation of hypotheses 3.8 Explain the evaluation of hypotheses. 3.9 Explain how to refine	• Enumerate the steps of outbreak investigation • Describe Preparation for Field Work • Explain how to determine the existence of an Outbreak • Describe how to verify the diagnosis (i.e clinical findings and laboratory results). • Explain how to develop case definition and identify cases • Describe Data by time, place and persons. • Explain the formulation of	Textbooks, Marker board, Chart, Overhead, slides, Projector, Whiteboard, National surveillance guidelines, Projector and charts etc			

	hypotheses. 3.10 Describe the iimplementation of control and prevention measures. 3.11 Explain how to communicate findings.	Hypotheses • Explain the evaluation of Hypotheses. • Explain how to refine Hypotheses • Describe the Implementation of Control and Prevention Measures • Explain how to Communicate Findings				
General Objective 4.0: Understand the role of Infection Prevention and Control (IPC) measures during outbreaks.						
12-15	4.1 Discuss standard precautions. 4.2 Explain transmission-based precautions 4.3 Explain isolation and quarantine. 4.4 Itemize personal protective equipment use. 4.5 Discuss environmental decontamination.	• Discuss Standard precautions • Transmission-based precautions • Explain Isolation and quarantine • itemize Personal Protective Equipment use • Discuss Environmental decontamination	Textbook Marker board Chart Overhead slides Projector Whiteboard National surveillance guidelines Projector and charts			
Course Assessment Course Work: 20% Tests: 20% Examination: 60% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: CONTEMPORARY ISSUES, INNOVATION AND FUTURE TRENDS IN VACCINOLOGY	**COURSE CODE: IDV 226**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 hours/week	**THEORETICAL: 2 hours/week**
YEAR: II SEMESTER: II	**PRE-REQUISITE:**	**PRACTICAL: 0**
GOAL: This course is designed to acquaint students with knowledge and skills on contemporary issues, innovation and future trends in managing infectious diseases and vaccinology.		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand contemporary issues in infectious diseases;
2.0 Know challenges in vaccinology and immunization programmes;
3.0 Understand the impact of antimicrobial resistance and pathogen evolution;
4.0 Understand zoonotic and emerging infectious diseases;
5.0 Explore innovations in vaccine development and technology;
6.0 Assess new approaches in vaccine delivery and immunization;
7.0 Evaluate future trends in infectious disease control and vaccinology.
8.0 Apply knowledge of contemporary issues to real-life public health practice.

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: CONTEMPORARY ISSUES, INNOVATION AND FUTURE TRENDS IN VACCINOLOGY	COURSE CODE: IDV 226	CREDIT UNIT: 2
	CONTACT HOURS: 2 hours/week	THEORETICAL: 2 hours/week
YEAR: II SEMESTER: II	PRE-REQUISITE:	PRACTICAL: 0
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to equip students with knowledge and skills on contemporary issues, innovation and future trends in managing infectious diseases and vaccinology.		
General Objective 1.0: Understand contemporary issues in infectious diseases		

THEORETICAL CONTENT				PRACTICAL CONTENT		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-2	1.1 Define contemporary issues in infectious diseases 1.2 Describe emerging and re-emerging diseases (e.g., COVID-19, Lassa fever) 1.3 Explain the causes of disease emergence (climate change, globalization, urbanization) 1.4 Describe the burden of infectious diseases in developing countries 1.5 Discuss the impact of antimicrobial resistance on disease management	• Define contemporary issues in infectious diseases • Describe emerging and re-emerging diseases (e.g., COVID-19, Lassa fever) • Explain the causes of disease emergence (climate change, globalization, urbanization) • Describe the burden of infectious diseases in developing countries • Discuss the impact of antimicrobial	Projector and slides WHO and national policy documents Journals and review articles Whiteboard/flip charts			

		resistance on disease management				
General Objective 2.0: Know challenges in vaccinology and immunization programmes						
3-4	2.1 Define vaccinology and immunization. 2.2 Explain vaccine hesitancy and its causes 2.3 Describe challenges in vaccine storage and distribution (cold chain systems). 2.4 Describe inequalities in vaccine access globally. 2.5 Discuss the role of organizations such as GAVI, the Vaccine Alliance.	• Describe vaccinology and immunization • Discuss vaccine hesitancy and its causes • Somme challenges in vaccine storage and distribution (cold chain systems) • Describe inequalities in vaccine access globally • Discuss the role of organizations such as GAVI, the Vaccine Alliance	Projector and slides, WHO and national policy documents, Journals and review articles, Whiteboard/flip charts			
General Objective 3.0: Understand the impact of antimicrobial resistance and pathogen evolution						
5-6	3.1 Define antimicrobial resistance (AMR). 3.2 Explain mechanisms of resistance in microorganisms. 3.3 Describe factors contributing to AMR 3.4 Describe the impact of AMR on treatment outcomes.	• Define antimicrobial resistance (AMR) • Explain mechanisms of resistance in microorganisms • Describe factors contributing to AMR	Projector and slides, WHO and national policy document, Journals and review articles, Whiteboard/flip charts			

	3.5 Discuss strategies to control AMR in healthcare settings.	• Describe the impact of AMR on treatment outcomes • Discuss strategies to control AMR in healthcare settings				
General Objective 4.0: Understand zoonotic and emerging infectious diseases						
7-8	4.1 Define zoonotic diseases. 4.2 Describe common zoonotic infections (e.g., Monkeypox, Avian influenza). 4.3 Explain transmission pathways from animals to humans. 4.4 Describe prevention and control strategies. 4.5 Discuss the concept of One Health.	• Define zoonotic diseases • Describe common zoonotic infections (e.g., Monkeypox, Avian influenza) • Explain transmission pathways from animals to humans • Describe prevention and control strategies • Discuss the concept of One Health	Projector and slides, WHO and national policy documents, Journals and review articles, Whiteboard/flip charts			
General Objective 5.0: Understand innovations in vaccine development and technology						
9-10	5.1 Describe modern vaccine technologies (e.g., mRNA, DNA, viral vector vaccines) 5.2 Explain how mRNA vaccines work. 5.3 Describe advantages of new vaccine platforms over traditional	• Describe modern vaccine technologies (e.g., mRNA, DNA, viral vector vaccines) • Explain how mRNA vaccines work • Describe advantages of new vaccine	Projector and slides, WHO and national policy documents, Journals and review articles, Whiteboard/flip charts			

	vaccines 5.4 Discuss the role of nanotechnology in vaccine delivery 5.5 Explain the contribution of bioinformatics and AI in vaccine design.	platforms over traditional vaccines • Discuss the role of nanotechnology in vaccine delivery • Explain the contribution of bioinformatics and AI in vaccine design				
General Objective 6.0: Know new approaches in vaccine delivery and immunization						
11-12	6.1 Describe needle-free vaccine delivery methods (oral, nasal, patches). 6.2 Explain the importance of thermostable vaccines. 6.3 Describe innovations in vaccine storage and transport. 6.4 Discuss strategies for improving vaccine coverage in rural areas. 6.5 Evaluate community-based immunization approaches.	• Describe needle-free vaccine delivery methods (oral, nasal, patches) • Explain the importance of thermostable vaccines • Describe innovations in vaccine storage and transport • Discuss strategies for improving vaccine coverage in rural areas • Evaluate community-based immunization approaches	Projector and slides, WHO and national policy documents, Journals and review articles, Whiteboard/flip charts etc			
General Objective 7.0: Understand future trends in infectious disease control and vaccinology						

13-14	7.1 Describe the concept of universal vaccines. 7.2 Explain personalized vaccines and their applications. 7.3 Discuss future directions in pandemic preparedness. 7.4 Describe emerging technologies in disease surveillance. 7.5 Predict future challenges in infectious disease control.	• Describe the concept of universal vaccines • Explain personalized vaccines and their applications • Discuss future directions in pandemic preparedness • Identify emerging technologies in disease surveillance • Predict future challenges in infectious disease control	Projector and slides WHO and national policy documents Journals and review articles Whiteboard/flip charts etc			
General Objective 8.0: Apply knowledge of contemporary issues to real-life public health practice						
15	8.1 Analyse case studies of disease outbreaks. 8.2 Highlight solutions to vaccination challenges in local settings (e.g., Nigeria). 8.3 Describe basic skills in outbreak response planning. 8.4 Describe strategies to improve vaccine acceptance. 8.5 Explain infection prevention and control	• Analyse case studies of disease outbreaks • Highlight solutions to vaccination challenges in local settings (e.g., Nigeria) • Demonstrate basic skills in outbreak response planning • Describe strategies to improve vaccine acceptance	Projector and slides, WHO and national policy documents, Journals and review articles, Case studies/series, Whiteboard/flip charts etc			

	measures effectively.	• Explain infection prevention and control measures effectively				

Course Assessment
Course Work: 20%
Tests: 20%
Examination: 60%
Total: 100%

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: OCCUPATIONAL AND ENVIRONMENTAL HEALTH	**COURSE CODE: IDV 227**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 hours/week	**THEORETICAL: 1 hour/week**
YEAR: II SEMESTER: II	**PRE-REQUISITE:**	**PRACTICAL: 1 hour/week**
GOAL: This course is designed to equip students with the knowledge and practical skills required to identify, assess, prevent, and control occupational and environmental health hazards.		
GENERAL OBJECTIVES: On completion of this course, the students should be able to: 1.0 Understand the concepts, principles and scope of occupational and environmental health; 2.0 Recognise occupational hazards with emphasis on biological and infectious risks; 3.0 Know occupational health and safety measures in workplace settings; 4.0 Understand environmental determinants that influence the transmission of infectious diseases; 5.0 Know environmental control and sanitation measures for disease prevention; 6.0 Promote health education and risk communication in occupational and community settings.		

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: OCCUPATIONAL AND ENVIRONMENTAL HEALTH	COURSE CODE: IDV 227	CREDIT UNIT: 2
	CONTACT HOURS: 2 hour/week	THEORETICAL: 1 hour/week
YEAR: TWO SEMESTER: TWO	PRE-REQUISITE:	PRACTICAL: 1 hour/week
COURSE SPECIFIFCATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to equip students with the knowledge and practical skills required to identify, assess, prevent, and control occupational and environmental health hazards, particularly biological and infectious risks, in order to promote safe workplaces and healthy communities.		
General Objective 1.0: Understand the concepts, principles and scope of occupational and environmental health		

THEORETICAL CONTENT				PRACTICAL CONTENT		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-3	1.1 Explain the concept of Occupational and environmental health. 1.2 Describe the historical development of occupational health. 1.3 Explain the principles of Occupational and environmental health 1.4 Describe the scope of Occupational and environmental health. 1.5 Explain the importance of occupational and environmental health. 1.6 Highlight relevant national and	• Explain the concept of Occupational and environmental health • Discuss the historical development of occupational health • Explain the principles of Occupational and environmental health • Describe the scope of Occupational and environmental health • Highlight the importance of occupational and environmental health • Outline relevant	Text books, White Board/Marker, Multimedia projector, Laptops etc			

	international regulatory bodies. 1.7 Explain the relationship between environmental, occupational, and disease occurrence.	national and international regulatory bodies • Describe the relationship environmental, occupation, and disease occurrence				
General Objective 2.0: Understand occupational hazards with emphasis on biological and infectious risks.						
4-5	2.1 Explain occupational hazards (physical, chemical, biological, ergonomic, psychosocial). 2.2 Describe biological hazards in healthcare, laboratories, and waste management. 2.3 Describe modes of occupational transmission of infectious diseases. 2.4 Discuss high-risk occupations for infectious disease exposure. 2.5 Explain needle-stick injuries and blood-borne pathogen risks.	• Explain occupational hazards (physical, chemical, biological, ergonomic, psychosocial). • Describe biological hazards in healthcare, laboratories, and waste management. • Describe modes of occupational transmission of infectious diseases. • Discuss Recognize high-risk occupations for infectious exposure. • Explain needle-stick injuries and blood-borne pathogen risks.	Text books, White Board/Marker Multimedia projector, Laptops etc			
General Objective 3.0: Know occupational health and safety measures in workplace settings.						

6-7	3.1 Define safety in workplace 3.2 Describe standard safety measures and precautions in workplaces. 3.3 Describe hand hygiene techniques. 3.4 Describe appropriate Personal Protective Equipment (PPE) use. 3.5 Explain sterilization, disinfection, and waste disposal methods. 3.6 Describe workplace vaccination requirements (e.g., Hepatitis B immunization).	• Explain safety • Explain standard safety measures and precautions in workplaces. • Describe hand hygiene techniques. • Describe appropriate Personal Protective Equipment (PPE) use. • Discuss sterilization, disinfection, and waste disposal methods. • Explain workplace vaccination requirements (e.g., Hepatitis B immunization).	Textbooks, White Board/Marker, Multimedia projector, Laptops etc	• Draw safety signs • Demonstrate proper hand hygiene techniques. • Identify and use appropriate Personal Protective Equipment (PPE). • Disinfect, Sterilise and dispose waste	Guide students to: Draw safety signs Demonstrate proper hand hygiene techniques. Identify and use appropriate Personal Protective Equipment (PPE). Disinfect, Sterilise and dispose waste	
General Objective 4.0: Understand environmental determinants that influence the transmission of infectious diseases.						
8-9	4.1 Explain environmental determinants of infectious diseases. 4.2 Explain water-borne, food-borne, and vector-borne diseases. 4.3 Describe the impact of poor sanitation and waste management in workplace and environment. 4.4 Explain the role of	• Discuss environmental determinants of infectious diseases. • Explain water-borne, food-borne, and vector-borne diseases. • Highlight the impact of poor sanitation and waste management in	Text books, White Board/Marker, Multimedia projector, Laptops, Lecture notes etc			

	climate and seasonal variation in disease patterns. 4.5 Discuss basic environmental health risk indicators.	workplace and environment. • Describe the role of climate and seasonal variation in disease patterns. • Describe basic environmental health risk indicators.				
General Objective 5.0: Know environmental control and sanitation measures for disease prevention.						
10-11	5.1 Describe safe water supply and purification methods. 5.2 Explain sewage and waste management systems. 5.3 Outline vector control strategies. 5.4 Describe food hygiene and safety principles. 5.5 Explain environmental risk assessments in communities. 5.6 Explain principles of Water Sanitation and Hygiene (WASH)	• Explain safe water supply and purification methods. • Describe sewage and waste management systems. • Highlight vector control strategies. • Describe food hygiene and safety principles. • Discuss environmental risk assessments in communities. • Explain principles of Water Sanitation and Hygiene (WASH)	Text books, White Board/Marker, Multimedia projector, Laptops, Lecture notes etc			
General Objective 6.0: Promote health education and risk communication in occupational and community settings.						
	6.1 Explain simple health education materials on occupational safety. 6.2 Explain the	• Explain simple health education materials on occupational safety.	Text books White Board/Marker Multimedia			

12-15	importance of Communicating infectious disease risk prevention strategies to workers and communities. 6.3 Explain basic outbreak reporting procedures.	• Explain the importance of Communicating infectious risk prevention strategies to workers and communities. • Explain basic outbreak reporting procedures.	projector, Laptops Lecture notes etc			
Course Assessment Course Work: 20% Tests: 20% Examination: 60% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: MEDICAL WASTE MANAGEMENT	**COURSE CODE: IDV 228**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2hours/week	**THEORETICAL: 1 hour/week**
YEAR: II SEMESTER: II	**PRE-REQUISITE:**	**PRACTICAL: 1 hour/week**
GOAL: This course is designed to equip students with the knowledge and practical skills required to identify, handle, segregate, treat, and dispose of medical waste safely in order to prevent infection, protect healthcare workers and the public, and ensure environmental safety.		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand the concept and importance of medical waste management.
2.0 Comprehend different types of medical waste and associated hazards.
3.0 Know infection prevention and occupational safety measures in medical waste handling
4.0 Know proper procedures for segregation, collection, and storage of medical waste.
5.0 Understand methods of treatment and disposal of medical waste.
6.0 Understand regulations and policies guiding medical waste management.

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY TECHNOLOGY		
COURSE: MEDICAL WASTE MANAGEMENT	COURSE CODE: IDV 228	CREDIT UNIT: 2
	CONTACT HOURS: 2 hours/week	THEORETICAL: 1 hour/week
YEAR: II SEMESTER: II	PRE-REQUISITE:	PRACTICAL: 1 hour/week
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to equip students with the knowledge and practical skills required to identify, handle, segregate, treat, and dispose of medical waste safely in order to prevent infection, protect healthcare workers and the public, and ensure environmental safety.		
General Objective 1.0: Understand the concept and importance of medical waste management		

THEORETICAL CONTENT				PRACTICAL CONTENT		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-2	1.1 Define waste. 1.2 Define medical waste. 1.3 Explain the sources of medical waste in healthcare settings. 1.4 Describe the importance of proper medical waste management. 1.5 Describe the risks associated with improper disposal of medical waste. 1.6 Explain the role of medical waste management in infection prevention and environmental protection.	• Define waste • Define medical waste. • Explain the sources of medical waste in healthcare settings. • Describe the importance of proper medical waste management. • Describe the risks associated with improper disposal of medical waste. • Explain the role of medical waste management in infection prevention and environmental	Text books, White Board/Marker, Multimedia projector/Laptops Lecture notes etc			

		protection.				
General Objective 2.0: Understand different types of medical waste and associated hazards						
3-4	2.1 Distinguish between hazardous and non-hazardous healthcare. 2.2 Classify medical waste into categories (infectious, pathological, sharps, pharmaceutical, chemical, and general waste). 2.3 Describe examples of each category of medical waste. 2.4 Explain the hazards associated with each type of medical waste. 2.5 Recognize biohazard symbols and labelling used in healthcare facilities.	• Distinguish between hazardous and non-hazardous healthcare waste. • Classify medical waste into categories (infectious, pathological, sharps, pharmaceutical, chemical, and general waste). • Describe examples of each category of medical waste. • Explain the hazards associated with each type of medical waste. • Recognize biohazard symbols and labelling used in healthcare facilities.	Text books White Board/Marker Multimedia projector/Laptops Lecture notes	• Identify different classes waste • Identify colour coded bins for different classes of waste • Identify hazardous and non-hazardous healthcare waste. • Identify biohazard symbols and labelling used in healthcare facilities	Guide students to: • Identify different classes waste • Identify hazardous and non-hazardous healthcare waste. • Identify biohazard symbols and labelling used in healthcare facilities	Colour-coded bins/liners, PPE, Disinfectants, Charts of safety symbols etc
General Objective 3.0: **Know infection prevention and occupational safety measures in medical waste handling**						
5-7	3.1 Explain risks faced by healthcare workers during waste handling. 3.2 Describe the steps of	• Explain risks faced by healthcare workers during waste handling.	Text books White Board/Marker Multimedia	• Demonstrate the use of personal protective equipment (PPE)	Guide students to: • Demonstrate the use of personal	PPE Hand wash Water station First aid kits

	hand hygiene 3.3 Describe hand hygiene and use of Personal Protective Equipment (PPE) for safe handling of medical waste 3.4 Explain prevention of needle-stick injuries. 3.5 Describe procedures for handling spills and accidents. 3.6 Outline steps for post-exposure prophylaxis.	• Describe hand hygiene and use of Personal Protective Equipment (PPE) for safe handling of medical waste • Explain prevention of needle-stick injuries. • Describe procedures for handling spills and accidents. • Outline steps for post-exposure prophylaxis.	projector/Laptops Lecture notes	for safe handling of medical waste	protective equipment (PPE) for safe handling of medical waste	Bleach
General Objective 4.0: **Know proper procedures for segregation, collection, and storage of medical waste**						
8-9	4.1 Explain the importance of waste segregation at the point of generation. 4.2 Describe color-coded waste bins used for different categories of medical waste. 4.3 Describe safe methods of collecting medical waste. 4.4 Explain guidelines for temporary storage of healthcare waste. 4.5 Describe safe packaging and labelling of waste containers.	• Explain the importance of waste segregation at the point of generation. • Describe color-coded waste bins used for different categories of medical waste. • Describe safe methods of collecting medical waste. • Explain guidelines for temporary storage of healthcare waste. • Demonstrate safe packaging and labelling of waste	Text books White Board/Marker Multimedia projector/Laptops Lecture notes	• Segregate waste at the point of generation. • Identify the color-coded bins used for different categories of medical waste, • Demonstrate safe methods of waste collection. • Demonstrate safe packaging and labelling of waste containers	Guide students to: • Segregate waste at the point of generation • Identify the color-coded bins used for different categories of medical waste • Demonstrate safe methods of waste collection • Demonstrate	PPE Practical manuals Colour coded waste bins Charts Bin bags Waste bins Utility/Disposable gloves etc.

		containers.			safe packaging and labelling of waste containers	
General Objective 5.0: Understand methods of treatment and disposal of medical waste						
10-12	5.1 Describe common treatment methods for medical waste. 5.2 Describe the disposal of medical waste 5.3 Explain different methods of disposal of medical waste. 5.4 Explain the merits and demerits of different medical waste disposal. 5.5 Discuss safe final disposal methods for treated medical waste 5.6 Explain the principles of incineration. 5.7 Explain environmental considerations in waste disposal.	• Describe common treatment methods for medical waste. • Describe the disposal of medical waste • Explain different methods of disposal of medical waste • Explain the merits and demerits of different medical waste disposal. • Explain the principles of incineration. • Discuss safe final disposal methods for treated medical waste. • Explain environmental considerations in waste disposal	Text books White Board/Marker Multimedia projector/Laptops Lecture notes	• Demonstrate common methods of treating medical waste • Dispose medical waste using different methods	Guide students to: • Demonstrate common methods of medical waste disposal	Incinerator Temporary Dump site PPE Practical manual Chemical reagent Safety box
General Objective 6.0: **Understand regulations and policies guiding medical waste management**						
13-15	6.1 Explain national and international guidelines for medical waste	• Explain national and international guidelines for	Text books, White Board/Marker			

	management. 6.2 Explain institutional policies on waste management. 6.3 Describe the responsibilities of healthcare workers in waste management. 6.4 Explain monitoring and compliance mechanisms. 6.5 Discuss the role of government agencies in regulating medical waste disposal.	medical waste management. • Explain institutional policies on waste management. • Describe the responsibilities of healthcare workers in waste management. • Explain monitoring and compliance mechanisms. • Discuss the role of government agencies in regulating medical waste disposal.	Multimedia projector/Laptops Lecture notes			
Course Assessment Course Work: 10% Tests: 10% Practical: 40% Examination: 40% Total: 100%						

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: DISASTER RESPONSE IN INFECTIOUS DISEASES AND VACCINOLOGY	**COURSE CODE: IDV 229**	**CREDIT UNIT: 2**
	CONTACT HOURS: 2 Hours/week	**THEORETICAL: 1 Hour/Week**
YEAR: II SEMESTER: II	**PRE-REQUISITE:**	**PRACTICAL: 1 Hour/Week**
GOAL: This course is designed to equip students with skills in disaster preparedness and emergency response.		

GENERAL OBJECTIVES

On completion of this course, the students should be able to:

1.0 Understand concepts and types of disasters affecting public health
2.0 Understand the relationship between disasters and infectious diseases
3.0 Understand disaster prevention, preparedness, response, and recovery/rehabilitation
4.0 Understand the principles and structure of Integrated Disease Surveillance and Response (IDSR)
5.0 Know the procedures for disease reporting and surveillance data management
6.0 6.0 Conduct outbreak investigation using IDSR tools

PROGRAMME: NATIONAL DIPLOMA IN INFECTIOUS DISEASES AND VACCINOLOGY		
COURSE: DISASTER RESPONSE IN INFECTIOUS DISEASES AND VACCINOLOGY	COURSE CODE: IDV 229	CREDIT UNIT: 2
	CONTACT HOURS: 2 hours/week	THEORETICAL: 1 Hour/Week
YEAR: II SEMESTER: II	PRE-REQUISITE:	PRACTICAL: 1 Hour/Week
COURSE SPECIFICATION: THEORETICAL AND PRACTICAL		
GOAL: This course is designed to equip students with skills in disaster preparedness and emergency response.		
General Objective 1.0: Understand concepts and types of disasters affecting public health		

THEORETICAL CONTENT				PRACTICAL CONTENT		
Week	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**	**Specific Learning Outcome**	**Teacher's Activities**	**Resources**
1-2	1.1 Define the following terms in public health emergency; i. Disaster ii. Risk iii. Hazard iv. Vulnerability v. Emergency vi. Complex emergency, etc 1.2 Describe classes of disasters (natural, biological, technological) 1.3 Explain impact of disasters on health systems	• Define the following terms in public health emergency: - Disaster - Risk - Hazard - Vulnerability - Emergency - Complex emergency, etc • Describe types of disasters (natural, biological, technological) • Describe classes of disaster • Explain impact of disasters on health systems	Disaster management guidelines, WHO reports, Text books, White Board/Markers, Multimedia, Projector, Laptops Lecture notes etc	• Identify disaster risks affecting communities • Identify disaster prone areas	Guide students to: • Identify disaster risks affecting communities • Identify disaster prone areas	Case study materials, flip charts

General Objective 2.0: Understand the relationship between disasters and infectious diseases						
3-5	2.1 Describe the historical perspective of infectious diseases outbreak 2.2 Explain how natural and man-made disasters increase the risk of infectious disease outbreaks. 2.3 Describe common infectious diseases associated with specific types of disasters (e.g., cholera after floods, measles in displacement camps). 2.4 Describe the environmental and social factors (overcrowding, poor sanitation, disrupted health services) that promote disease transmission after disasters. 2.5 Describe the pathways through which disasters disrupt water supply, sanitation, vector control, and healthcare systems.	• Describe the historical perspective of infectious diseases outbreak • Explain how natural and man-made disasters increase the risk of infectious disease outbreaks. • Describe common infectious diseases associated with specific types of disasters (e.g., cholera after floods, measles in displacement camps). • Describe the environmental and social factors (overcrowding, poor sanitation, disrupted health services) that promote disease transmission after disasters. • Describe the pathways through which disasters disrupt water supply, sanitation, vector control, and	Text books White Board/Marker Multimedia projector/Laptops Lecture notes			

	2.6 Differentiate between immediate and long-term infectious disease risks following disasters.	healthcare systems. • Differentiate between immediate and long-term infectious disease risks following disasters.				
General Objective 3.0: Understand disaster prevention, preparedness, response, and recovery/rehabilitation						
6-7	3.1 Explain disaster preparedness planning 3.2 Explain emergency response structure. 3.3 Describe disaster management cycle. 3.4 Describe roles of health workers during emergencies. 3.5 Explain disaster response teams and their composition e.g health teams.	Prepare lecture notes and slides to: • Explain disaster preparedness planning • Explain emergency response structure • Describe disaster management cycle • Describe roles of health workers during emergencies • Explain disaster response teams and their composition e.g health teams	National emergency response guidelines, WHO emergency manuals	• Develop basic disaster preparedness plan	Guide students to: • Develop basic disaster preparedness plan	Disaster preparedness templates, planning guides
General Objective 4.0: Understand the principles and structure of Integrated Disease Surveillance and Response (IDSR)						
8-9	4.1 Define Integrated Disease Surveillance and Response (IDSR) 4.2 Describe priority diseases under IDSR 4.3 Explain surveillance data flow	• Define Integrated Disease Surveillance and Response (IDSR) • Describe priority diseases under IDSR Explain surveillance data flow	IDSR guidelines, surveillance charts	• Identify IDSR priority diseases	Guide students to: Identify IDSR priority diseases	IDSR manuals, disease classification charts
General Objective 5.0: Know the procedures for disease reporting and surveillance data management						

10-11	5.1 Describe IDSR reporting forms 5.2 Explain surveillance data collection procedures 5.3 Explain weekly and monthly reporting of surveillance data 5.4 Define surveillance data and explain its role in public health decision-making.	• Describe IDSR reporting forms • Explain surveillance data collection procedures • Explain weekly and monthly reporting of surveillance data • Define surveillance data and explain its role in public health decision-making.	IDSR reporting forms, surveillance manuals	• Identity IDSR Forms • Complete surveillance documentation • Report surveillance data	Guide students to: • Identify IDSR forms • Complete surveillance documentation • Report surveillance data	IDSR forms, line list templates, reporting registers
General Objective 6.0: Conduct outbreak investigation using IDSR tools						
12-15	6.1 Define outbreak and epidemic 6.2 Explain steps of outbreak investigation 6.3 Explain case definition and line listing 6.4 Describe the IDSR tools	Prepare lecture notes and slides to: • Define outbreak and epidemic • Explain steps of outbreak investigation • Explain case definition and line listing • Describe the IDSR tools	Outbreak investigation manuals	• Develop outbreak line list and epidemic curve • Simulate outbreak investigation using IDSR tools	Guide students to: • Develop outbreak line list and epidemic curve • Simulate outbreak investigation using IDSR tools	Line list templates, graph sheets, outbreak scenarios IDSR tools High visibility jackets PPE
Course Assessment Course Work: 10% Tests: 10% Practical: 40% Examination: 40% Total: 100%						

LIST OF MINIMUM RESOIRCES/PHYSCAL FACILITIES

INFECTIOUS DISEASE LABORATORY AND VACCINOLOGY (IDV) LABORATORY/DMONSTRATION

S/N	DESCRIPTION OF ITEMS	REQUIRED QUANTITY
1	Binocular Light Microscope	10
2	Demonstration Microscope (electron)	2
3	Autoclave (Electric, 50–75L)	1
4	Hot Air Oven	1
5	Incubator	1
6	Refrigerator (Laboratory grade)	1
7	Deep Freezer (-20°C)	1
8	Water Bath	1
9	Centrifuge (Table top)	2
10	Electronic Weighing Balance	2
11	pH Meter	8
12	Laminar Air Flow Cabinet	1
13	Colony Counter	5
14	Magnetic Stirrer	4
15	Test tubes	20
16	Test tube racks	20
17	Beakers (50–500ml assorted)	50
18	Conical flasks	40
19	Measuring cylinders	10
20	Petri dishes (glass reusable)	10
21	Slides	2000
22	Cover slips	2000
23	Inoculating loops	50
24	Pipettes (Pasteur & graduated)	100
25	Micropipettes (adjustable)	10
26	Preserved helminths (Ascaris, Taenia, Schistosoma)	20
27	Prepared blood smears	5
28	Bacterial culture plates	10

29	Parasite life cycle charts	5
30	Microbial classification wall charts	3
31	Staining technique demonstration charts	5
32	Assorted reagents (e.g blood typing, Widal etc)	5

B. DEMONSTRATION/PRACTICAL HALL

S/N	DESCRIPTION OF ITEMS	REQUIRED QUANTITY
1.	Air quality monitor (basic) – 1	5
2.	Anatomy posters/ photograph system	20
3.	Anatomy Wall Charts (complete set)	10
4.	Autoclave (shared with micro lab)	1
5.	Backup generator (shared institutional) – 1	1
6.	Body gowns	5
7.	Brain Model	5
8.	Charts of organs and systems	30
9.	Chlorine power	1
10.	Circulatory System Charts	5
11.	Cold box with icepacks	2
12.	Cold chain refrigerator – 1	1
13.	Cold-chain (Cold Box)	1
14.	Color-coded waste bins (Red, Yellow, Black, Safety box)	10
15.	Computer sets	1
16.	CPR Manikin (Adult)	1
17.	CPR Manikin (Infant)	1
18.	Data Logger (Cold Chain Monitoring)	2
19.	Digestive System Model	5
20.	Digital Thermometers	20
21.	Doll baby	9
22.	Environmental inspection kits – 5	10
23.	Face masks-	50
24.	First Aid Box (Fully equipped)	4
25.	Flip Chart/book	15

26.	Full Human Skeleton Model	2
27.	Hanging weighing scale	2
28.	Heart Model	5
29.	Hospital Bed	2
30.	Human Torso Model	2
31.	Ice packs – 40	40
32.	Ice packs different sizes 2 each,	10
33.	Immunization cards – 20	20
34.	Immunization Practice Arm Models	15
35.	Infant thigh injection model – 2	22
36.	Infrared thermometer (4)	10
37.	Intramuscular injection arm model – 1	12
38.	IV Stand	4
39.	Lab Trolleys	2
40.	Laptop	2
41.	Microscope	2
42.	Mini demonstration incinerator (model type) – 1	10
43.	Multimedia Projector	1
44.	Nebulizer	2
45.	Noise meter – 1	8
46.	Oxygen Cylinder	1
47.	Personal protective equipment	5
48.	Posters on infectious diseases	60
49.	Pulse Oximeter	4
50.	Refrigerator 1	1
51.	Refrigerator voltage stabilizer – 1	2
52.	Respiratory System Model	5
53.	Safety boxes – 20	20
54.	Sanitizers	5
55.	Screening desk setup (1)	1
56.	Sharps disposal containers (10)	10
57.	Sphygmomanometer (Manual & Digital)	6

58.	Stethoscopes	10
59.	Symbols	5
60.	Temperature monitoring chart boards – 5	10
61.	Thermometer	20
62.	Thermometer jar	10
63.	Vaccine Carrier Boxes	5
64.	Vaccine carriers – 10	10
65.	Vaccine Storage Refrigerator (WHO PQS compliant)	1
66.	Vaccine vial monitor display board – 1	1
67.	VVM (Vaccine Vial Monitor samples – expired demo)	20
68.	Wash hand basin	5
69.	Wash hand Bowls	8
70.	Waste segregation bin set (5 complete sets)	5
71.	Weighing scales (infant & adults)	4
72.	Weighing scales with height	4
73.	WHO standard vaccine refrigerator – 1	1

C. Audio Visual Studio

S/N	DESCRIPTION OF ITEMS	REQUIRED QUANTITY
1.	Desktop Computers	1
2.	Projector	1
3.	Projector Screen	1
4.	Public Address System	1

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