SCHOOL OF BIOMEDICAL AND ALLIED HEALTH SCIENCES

DEPARTMENT OF NUTRITION AND DIETETICS

Master of Science  Dietetics Programme

ADMISSION REQUIREMENTS

Applicants must have a good first degree in a related science course including Dietetics, Nutrition, Food Science, Home Science, Biochemistry and Biological Sciences.

Short-listed applicants will be interviewed for selection and may be required to take an examination.

REGULATIONS

The programme shall be governed by the general regulations for graduate studies in the University of Ghana as set out in the Graduate Handbook of the School of Research and Graduate Studies.

DURATION

The Masters in Dietetics programme is to be organized as 24-calendar-month full time residential/non-residential programme by course work divided into four semesters with a total of a minimum of 74 credits and maximum 77 credits as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Semester I</td>
<td>14</td>
</tr>
<tr>
<td>Semester II</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>27</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Semester I</td>
<td>17</td>
</tr>
<tr>
<td>Semester II</td>
<td>18</td>
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<td>Total</td>
<td>35</td>
</tr>
<tr>
<td>Inter Semester Clinical Courses</td>
<td>4 Credits</td>
</tr>
<tr>
<td>Electives (2-3 courses)</td>
<td>8 - 11 Credits</td>
</tr>
<tr>
<td>Total Credits</td>
<td>74 – 77 Credits</td>
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</tbody>
</table>

STRUCTURE OF SEMESTER

A Semester shall normally be of 20 weeks duration and shall be structured as follows:

17 weeks of teaching
1 week of revision
2 weeks of Examinations
Total Clinical Hours: 1008 hours

COURSE STRUCTURE

YEAR 1

SEMESTER I

<table>
<thead>
<tr>
<th>CODE</th>
<th>COURSE</th>
<th>CREDIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIET 601</td>
<td>Review of Basic Nutrition</td>
<td>2</td>
</tr>
<tr>
<td>DIET 603</td>
<td>Therapeutic Catering Practice</td>
<td>2</td>
</tr>
<tr>
<td>DIET 605</td>
<td>Nutrition Science Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>DIET 607</td>
<td>Nutrition and Immunology</td>
<td>2</td>
</tr>
<tr>
<td>DIET 609</td>
<td>Dietetic Professional Practice</td>
<td>2</td>
</tr>
<tr>
<td>DIET 611</td>
<td>Social Psychology</td>
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TOTAL                                      12

SEMESTER II

<table>
<thead>
<tr>
<th>CODE</th>
<th>COURSE</th>
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</thead>
<tbody>
<tr>
<td>DIET 602</td>
<td>Nutrition &amp; Diet-Related Diseases I</td>
<td>3</td>
</tr>
<tr>
<td>DIET 604</td>
<td>Diet Therapy I</td>
<td>2</td>
</tr>
<tr>
<td>DIET 606</td>
<td>Clinical Attachment I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>(12hrs x 17 weeks: <strong>204hrs</strong>)</td>
<td></td>
</tr>
<tr>
<td>DIET 608</td>
<td>Biostatistics &amp; Research Methodology</td>
<td>3</td>
</tr>
<tr>
<td>DIET 612</td>
<td>Food Safety &amp; Toxicology</td>
<td>2</td>
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</table>

TOTAL                                      14

YEAR 2

SEMESTER III

<table>
<thead>
<tr>
<th>CODE</th>
<th>COURSE</th>
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<tbody>
<tr>
<td>DIET 623</td>
<td>Clinical Attachment II:</td>
<td>4</td>
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<tr>
<td></td>
<td>(12hrs x 17 weeks: <strong>204hrs</strong>)</td>
<td></td>
</tr>
<tr>
<td>SAHS 601</td>
<td>Principles &amp; Practice of Management</td>
<td>2</td>
</tr>
<tr>
<td>DIET 621</td>
<td>Pharmacology in Dietetics</td>
<td>2</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>DIET 625</td>
<td>Nutrition &amp; Diet-Related Diseases II</td>
<td>3</td>
</tr>
<tr>
<td>DIET 627</td>
<td>Diet Therapy II</td>
<td>2</td>
</tr>
<tr>
<td>DIET 629</td>
<td>Food Resources</td>
<td>2</td>
</tr>
<tr>
<td>DIET 631</td>
<td>Current Nutrition Topics</td>
<td>2</td>
</tr>
<tr>
<td>DIET 633</td>
<td>Nutrigenetics</td>
<td>2</td>
</tr>
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<td></td>
<td><strong>TOTAL</strong></td>
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**SEMESTER I**

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>DIET 610</td>
<td>Project</td>
<td>6</td>
</tr>
<tr>
<td>DIET 614</td>
<td>Nutrition &amp; Diet-Related Diseases III</td>
<td>3</td>
</tr>
<tr>
<td>DIET 616</td>
<td>Diet Therapy III</td>
<td>2</td>
</tr>
<tr>
<td>DIET 618</td>
<td>Clinical Attachment III: (12 hrs x 17 weeks: <strong>204 hrs</strong>)</td>
<td>4</td>
</tr>
<tr>
<td>DIET 620</td>
<td>Seminar</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

**ELECTIVES**

The under-listed courses are electives to be undertaken in the first and second semester. Students must select a minimum of two (2) credits per semester in the first year based on student’s undergraduate background.

**SEMESTER 1**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIET 613</td>
<td>Advances in Nutrition in Stress and Sports</td>
<td>2</td>
</tr>
<tr>
<td>DIET 615</td>
<td>Human Anatomy and Physiology</td>
<td>3</td>
</tr>
<tr>
<td>DIET 619</td>
<td>Advances in Nutrition in the Life Cycle</td>
<td>2</td>
</tr>
</tbody>
</table>

**SEMESTER 2**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIET 622</td>
<td>General Pathology</td>
<td>2</td>
</tr>
<tr>
<td>DIET 624</td>
<td>Public Health Nutrition</td>
<td>2</td>
</tr>
<tr>
<td>DIET 626</td>
<td>Communication Skills and Health Promotion</td>
<td>2</td>
</tr>
</tbody>
</table>

**NOTE:** Compulsory electives for student without dietetics background **DIET 615** and **DIET 622**

And for students without nutrition background – **DIET 613 and DIET 619**
INTER-SEMESTER CLINICAL PLACEMENT COURSES

DIET 600  Professional practice placement
(4 weeks **160 Hrs**)

DIET 600  Professional practice placement
(8 weeks **320 Hrs**)

DIET 600  Professional practice placement
(3 weeks **120 Hrs**)

**TOTAL CREDITS**  4

**COURSE DESCRIPTIONS**

**SAHS 601**  PRINCIPLES AND PRACTICE OF MANAGEMENT

This course surveys the practical problems that the manager of any health facility is likely to encounter and to offer some guidelines to their solution. It covers; Principles, purpose and nature of management; Leadership and the role of the supervisor; Individual behaviour and social psychology; Recruitment, selection, employment, induction and monitoring of staff; Health and safety; The law and the supervisor. Business planning, tendering and contracting

**DIET 601**  REVIEW OF BASIC NUTRITION


**DIET 602**  NUTRITIONAL AND DIET-RELATED DISEASES I

Development of nutritional and diet-related diseases; Diseases of infancy and childhood; Gastrointestinal disease; Diseases of the liver; Diseases of the gall bladder; Pancreatic diseases; Dental and oral disorders.

**DIET 603**  THERAPEUTIC CATERING PRACTICE

Quantitative and qualitative standards in dietary management of diseases; Foods and their nutritive values; Menu planning and recipe development; Feeding special groups; Hospital Meals Service; Catering management. Group work. Practicals and professional visits.

**DIET 604**  DIET THERAPY I

DIET 605      NUTRITION SCIENCE LABORATORY

DIET 606      CLINICAL ATTACHMENT I

In patient affiliation: Rapport with other health workers on the ward. Reading patients folder and Doctor’s referrals. Planning the nutrition care process. Record keeping. Patient Follow-up.

DIET 607      NUTRITION AND IMMUNOLOGY

DIET 608:      BIOSTATISTICS AND RESEARCH METHODOLOGY
Review of basic statistics. Data analysis and presentation. Use of statistical programme packages.

Research Methods:- Research planning and design, scientific literature review, design of survey instruments, referencing systems, pilot testing of a research proposal, reporting research outcomes, grant and Proposal writing.

DIET 609      DIETETICS PROFESSIONAL PRACTICE
DIET 612     FOOD SAFETY & TOXICOLOGY

Food safety: Microorganisms in food – the food ecology, factors affecting microbial growth in food, microbial food borne disease and food poisoning, bioterrorism, street foods, prevention of microbial food-borne diseases. Toxicology of foods: Absorption of toxicants, distribution and storage of toxicants, elimination of toxicants, target organ toxicity, naturally occurring food toxicants, food additives – direct, indirect and incidental additives, agro-chemical residues in food – pesticides, hormones, fertilizers and other growing aids, pollutants (e.g. PCB), irradiation, toxicological evaluation of substances in foods, nutrition, processing, packaging and labeling issues of food safety.

DIET 613     ADVANCES IN NUTRITION IN STRESS AND SPORTS

Nature of Stress – Physiologic and metabolic response to stress, life cycles stress period; stress related to work, high risk stress management, nutrition and stress management.

Nutrition and physical fitness, metabolic demands of exercise and sports, energy and nutrient requirements during sports, fluid balance, thermoregulation during exercise. Nutritional supplements/ergogenic aids, sports drinks, disability sports, dietary plans for training and competitions, ethical issues in sports, current research in sports nutrition.

DIET 614     NUTRITION AND DIET-RELATED DISEASES  III

Dietary management of disease: Aetiology, pathogenesis and medical management of cancer, sepsis, trauma, burns, surgery, food allergies, bone and joint disorders. Enteral and parenteral nutrition.

DIET 615     HUMAN ANATOMY AND PHYSIOLOGY


DIET 616     DIET THERAPY III (3 CREDITS)


DIET 618     CLINICAL ATTACHMENT III

DIET 619 ADVANCES IN NUTRITION IN THE LIFE CYCLE


DIET 621 PHARMACOLOGY IN DIETETICS


DIET 622 GENERAL PATHOLOGY


DIET 623 CLINICAL ATTACHMENT II


DIET 624 PUBLIC HEALTH NUTRITION


DIET 625 NUTRITION AND DIET-RELATED DISEASES II

Diagnostic tests and their interpretation. Aetiology, pathogenesis and medical management of: Cardiovascular diseases, Renal Diseases, nutritional anaemias, Diabetes Mellitus, weight imbalance, HIV/AIDS.
DIET 626 COMMUNICATION SKILLS AND HEALTH PROMOTION
Principles of oral communication necessary for interaction with individuals and groups.

Dynamics of communications- verbal communication, active/effective listening, Empathetic responding; interview skills, Non verbal Communication. Communication process:- Channels of communication and factors promoting good communication, Barriers in communication Interpersonal communication skills – professional communication. Educational theories and models of health behaviour related to patient learning. Developments of nutritional health promotion programmes. Ethics of health promotion. Strategies for health promotion and lifestyle changes. Preparation of a health education material for use in a health education context. Principles of programme management, including assessment, planning, implementation and evaluation

DIET 627 DIET THERAPY II (3 CREDITS)

Dietary management of: Cardiovascular diseases, renal Diseases, nutritional anaemias, diabetes mellitus, weight imbalance, HIV /AIDS, eating disorders.

DIET 629 FOOD RESOURCES

DIET 631 CURRENT NUTRITION AND DIETETICS TOPICS
This is a student-centred course comprising a series of student-led seminars designed to provide avenues for students to develop critical thinking and clinical reasoning. Current research findings and current topical issues in nutrition and dietetics will be reviewed. Some current dietetic practices will be examined in the light of current research evidence. Students will be required to research on current nutrition and dietetics issues and make presentations in class. Case scenarios requiring critical clinical reasoning will form a part.

DIET 633 NUTRIGENETICS

DIET 610: DISSERTATION
This course is designed to provide students with experience in designing and executing a research project. At the end of the course the student must present for assessment a dissertation
not totaling more than 15000 (fifteen thousand) words. The assessment of this course will include an oral examination.

**INTER-SEMESTER CLINICAL PLACEMENT COURSES**

**DIET 600 PROFESSIONAL PRACTICE PLACEMENT**

The course is taken during the inter-semester breaks and so runs in three segments.

The first segment is a four-week, whole day clinical training at the end of semester 1.

Students will undertake introductory clinical training involving direct observation and clinical experience to allow them to become familiar with Departmental routine and to experience patient care in the clinical reception. The students will learn about appointment system, initial referral clinic appointments, review clinic/appointment and follow-up clinic/appointment and the organization of dietetic service in the country.

The second segment is an 8-week, whole day clinical training period at the end of semester 2. Students will begin to apply theoretical knowledge and develop the range of skills needed to work as a dietitian with specified clients/care groups in a range of work settings.

The third and last segment is a three-week clinical posting to offer students experiences in a range of settings which include acute hospital wards and out patients’ centres. Students are expected to develop their dietetic practice which will include devising, monitoring and review of care plans for various nutrition-related conditions. The training programme should also offer health promotion experiences.

The attachment will be undertaken in Korle-Bu Teaching Hospital, Ridge Hospital, 37 Military Hospital, Princess Marie Louise Hospital and Tema General Hospital and any other suitable hospital as determined by the Department and approved by the SAHS Board.

Students will complete a logbook and will be assessed at the end of the training using the logbook and an oral examination.

The final mark for the course will be determined by the mark for each segment appropriately weighted by the number of contact hours.
DEPARTMENT OF AUDIOLOGY, SPEECH AND LANGUAGE

MSc. AUDIOLOGY

ADMISSION REQUIREMENTS

Audiology is a science-based allied health profession. Applicants seeking admission into this specialized programme must therefore have a good first degree (at least a second class lower division or minimum FGPA of 3.5) in any of the Allied Health Professions (AHPs), Biological Sciences, Nursing (BSc option), Physical Sciences, Pharmacy, and Psychology (BSc option). Applicants with degree qualifications in Special Education with a major in Communication Disorders may be considered on condition that they have adequate science (i.e. physics, human anatomy and physiology) education at the university level.

REGULATIONS

Regulations governing graduate programmes in the University of Ghana as stated in the Handbook for Graduate Studies shall apply to these programmes.

COURSES

The Master of Science (MSc) in Audiology is a two-year professional programme specially designed and tailored to produce qualified and clinically competent audiologists imbued with requisite professional and academic knowledge. The programme consists of course work, clinical practicum and a thesis/dissertation. The programme is organized into 24 months full time and is divided into four semesters with a total minimum of 71 credits and maximum of 75 credits.

The normal academic semester of 20 weeks duration is structured as follows:

- 17 weeks of teaching and clinical practicum,
- 1 week of revision
- 2 weeks of examinations

Total clinical hours = 1056 hours

YEAR 1

SEMESTER I

<table>
<thead>
<tr>
<th>Core Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUDY 601 Anatomy, Physiology, Metabolism of Auditory Systems and Speech Mechanisms</td>
<td>3</td>
</tr>
<tr>
<td>AUDY 603 Speech Perception and Psychoacoustics</td>
<td>2</td>
</tr>
<tr>
<td>AUDY 605 Introduction to Communication Disorders (includes practicum and observations in Speech Language Pathology)</td>
<td>2</td>
</tr>
<tr>
<td>AUDY 607 Psycholinguistics and Phonetics, Developmental Phonetics and Phonology</td>
<td>2</td>
</tr>
<tr>
<td>AUDY 609 Computer Applications Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>AUDY 611 Health Law and Ethics</td>
<td>2</td>
</tr>
<tr>
<td>SAHS 601 Principles and Practice of Management</td>
<td>2</td>
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</table>
AUDY 615  Clinical (Vocational) Training I  2

**SEMESTER II**  
Core Courses

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>AUDY 602</td>
<td>Clinical Practicum I</td>
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</tr>
<tr>
<td>AUDY 604</td>
<td>Instrumentation</td>
<td>2</td>
</tr>
<tr>
<td>AUDY 606</td>
<td>Counseling in Communication Disorders</td>
<td>2</td>
</tr>
<tr>
<td>AUDY 608</td>
<td>Aural Rehabilitation</td>
<td>3</td>
</tr>
<tr>
<td>AUDY 612</td>
<td>Audiology I</td>
<td>4</td>
</tr>
<tr>
<td>AUDY 614</td>
<td>Pediatric Audiology (Pre-school, school, neonatal and infant populations)</td>
<td>3</td>
</tr>
<tr>
<td>DIET 608</td>
<td>Research Methodology and Biostatistics</td>
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AUDY 621  Clinical (Vocational) Training II  2

**YEAR II**  

**SEMESTER III**

<table>
<thead>
<tr>
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<th>Course Title</th>
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<tbody>
<tr>
<td>AUDY 610</td>
<td>Clinical Practicum II: Advanced Audiology Practicum</td>
<td>2</td>
</tr>
<tr>
<td>AUDY 613</td>
<td>Audiology II</td>
<td>4</td>
</tr>
<tr>
<td>AUDY 617</td>
<td>Seminar I</td>
<td>2</td>
</tr>
<tr>
<td>AUDY 619</td>
<td>Industrial Audiology and Special Topics in Audiology</td>
<td>2</td>
</tr>
<tr>
<td>AUDY 620</td>
<td>Project Dissertation</td>
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</table>

AUDY 623  Vocational (Clinical) Training III  2

**SEMESTER IV**

<table>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>AUDY 610</td>
<td>Clinical Practicum III: Advanced Audiology Practicum</td>
<td>2</td>
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<tr>
<td>AUDY 616</td>
<td>Amplification</td>
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<tr>
<td>AUDY 618</td>
<td>Seminar II</td>
<td>2</td>
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<tr>
<td>AUDY 620</td>
<td>Project Dissertation</td>
<td>6</td>
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<tr>
<td>AUDY 6xx</td>
<td>Elective(s) (at least 1; at most 3)</td>
<td>2 - 6</td>
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**PRESCRIBED ELECTIVES**
The following electives are prescribed:

- AUDY 622  Occupational Hearing Loss
- AUDY 624  Earmold Technology
- AUDY 626  Newborn Hearing Screening
- AUDY 628  Evaluation of Vestibular Function
- AUDY 632  Auditory Brain-stem Responses
- AUDY 634  Sign Language
COURSE DESCRIPTION

AUDY 601  ANATOMY, PHYSIOLOGY, METABOLISM OF AUDITORY SYSTEMS AND SPEECH MECHANISMS
The course introduces students to basic structure and functions of the auditory and speech systems and relates these to the diagnostic procedures that the student will be exposed to in the programme.

- Embryological development of the auditory system
- Auditory and vestibular systems
- Central auditory system – auditory brain-stem, primary auditory cortex, secondary cortical areas associated with the brain
- Respiratory system
- Articulatory, phonatory and resonatory systems
- The speech areas of the brain (biological aspects)
- Damaged structures and the physiological aspects in speech production
- Neuro-anatomy and physiology
- Genetics and human development

AUDY 603  SPEECH PERCEPTION AND PSYCHOACOUSTICS
The course is designed to help the student to critically evaluate theories and models of speech perception and their relevance to communication sciences; become familiar with linguistic and non-linguistic factors influencing speech perception and describe how concepts, models and findings from speech perception research can inform the understanding and treatment of communication disorders.

It also gives students a basic understanding of psychoacoustics and the decibel scale, and how it relates to communication science.

- Speech perception: an introduction
- Theories and models of speech perception
- Development of speech perception
- Constraints of speech perception
- Speech perception and communication disorders
- Psychophysical methods
- Masking
- Intensity processing
- Frequency processing
- Pitch perception
- Binaural hearing
AUDY 604 INSTRUMENTATION
This course provides the student with a basic knowledge of the principles of electronics and electrical safety and of the instrumentation relevant to clinical audiology practice and its operation. The student will be able to analyze the integral parts of equipment utilized in audiological and vestibular measurements and use them correctly according to manufacturers’ specification. These include audiometers, impedance meters, audio and video recorders, voice and speech synthesizers and analyzers.

Each student will compile a comparative instrumentation profile for a piece of audiologic instrumentation. The profile must include literature including technological specifications as well as pricing. This formative assessment exercise must receive an 80% or greater score in order to pass. The lists of possible instrumentation include:

- Sound level meter
- Diagnostic audiometer
- Immitance meter
- Auditory evoked potential unit
- Diagnostic OAE unit
- ENG unit
- Hearing aid test box and probe unit
- Portable audiometer
- Electroneuronography unit
- Assistive listening devices

Lecture Series
- Introduction to electrical safety
- Basic electronics, biological audiometer calibration
- Electroacoustic calibration of audiometers
- Acoustic immitance units
- Advanced calibration and instrumentation considerations
- Auditory evoked potentials and otoacoustic emissions
- Test room measurements

AUDY 605 INTRODUCTION TO COMMUNICATION DISORDERS
This course gives an introduction to disorders in speech, language and hearing. It will include definitions, symptomatology, aetiologies and basic intervention principles for communication disorders.

- Normal speech production
- Language disorders in children
- Dysphasia
- Voice disorders
- Dysarthria
- Disorders of speech flow
- Audiology and the audiologist
• Manual communication

AUDY 606  COUNSELING IN COMMUNICATION DISORDERS
This course will examine ways a communicative disorder can affect both the life of the person with the communication disorder as well as the lives of the important persons in his/her life and ways to elicit from clients and/or their families the narrative of their experience of a communicative disorder.

• The “art” and “science” of counseling
• Clinician-client communication
• Suffering and the psychosocial effects of communication disorders on the client and significant others
• The psychosocial effects of disease processes that may include a communication disorder (e.g. stroke, meningitis), including the implications of acute versus chronic illnesses, stable versus progressive conditions, and abnormal versus acquired conditions
• Stigma
• Burnout and the client-clinician relationship
• Healing and loss and grief
• Working with families
• Coping mechanisms used by clients/families
• Working with groups and the use of power in the therapeutic relationship
• Cultural factors that may affect clinical relationships, assessment, and treatment outcomes

AUDY 607  INTRODUCTION TO PSYCHOLINGUIOSTICS, DEVELOPMENTAL PHONETICS AND PHONOLOGY
This course introduces the student to a basic knowledge of psycholinguistics, the theories, the processes and facts of normal phonological and phonetic acquisition, and the basis for identifying phonological impairment. It is expected that at the end of the course, the student will gain transcription and descriptive skills for a child with disordered speech, be able to develop an exposition regarding normal development, and develop basic knowledge about speech development of the hearing impaired.

• Normal and abnormal communication behavior throughout the lifespan in these areas: phonetics and phonology, morphology and syntax, semantics, pragmatics, discourse, nonverbal communication, and sociolinguistics
• The nature and theories of second language development
• Methods of observation and analysis useful in the description of communicative behavior in the following areas: phonetics and phonology, morphology and syntax, semantics, pragmatics, discourse, nonverbal communication, and sociolinguistics
AUDY 608  AURAL REHABILITATION
This course is designed to help the student assess the communication abilities and needs of the client. The student will be able to plan and conduct auditory, visual, and auditory-visual training to help their clients reach optimal potential with their residual hearing.

- Introduction and overview of aural rehabilitation
- Psychosocial aspects of hearing loss
- Self-assessment tools for hearing loss
- Outcome measures
- Conversation and communication strategies
- Self-help groups and resources
- Visual and auditory training
- Assistive listening devices: hearing assistance technology – solutions for TV, other media, telecommunication, etc
- Alerting and other non-auditory devices
- Tinnitus and basic management
- Profound hearing loss – deaf culture
- Multi-handicapped clients

AUDY 609  COMPUTER APPLICATIONS LABORATORY
This course is designed to help the student acquire the relevant computer-related skills and computer literacy that will lead to an understanding of the computer, how it works, its usage in problem solving and how it can be used as a tool in the work environment. The course consists of theory and practical components.

- Introduction to computers
- Word processing
- Spreadsheets
- Databases
- PowerPoint presentations
- Internet and the worldwide web

SAHS 601  PRINCIPLES AND PRACTICE OF MANAGEMENT
The purpose of this course is to survey the practical problems that the manager of any health facility is likely to encounter and to offer some guidelines to their solution. The course provides coverage of the important factors of supervision including knowledge necessary for the development of supervisory skills and creating an effective staff.

- Principles, purpose and nature of management
- Organizations
• The role of the supervisor
• Leadership
• Organization, planning and technical supervision
• Individual behavior and social psychology
• Recruitment, selection and employment
• Induction and staff monitoring
• Education and training
• Counseling and discipline
• Employer relations: the supervisor and the trade unions
• Health and Safety
• The law and the supervisor
• The supervisor and the new technology

AUDY 611  HEALTH LAW AND ETHICS
The course provides insights into legal and ethical issues in health that confront health professionals in their practice. It will cover the regulation of professional practice and responsibility to and rights of patients.

• The Allied Health Professions Council
• Professional roles and activities
• Codes of Conduct/Standards of Practice
• Consent to audiological examination and treatment
• Negligence and personal accountability
• GHS Patient Charter
• GHS Code of Ethics
• Medico-legal issues in audiology practice

DIET 608  BIOSTATISTICS AND RESEARCH METHODOLOGY
This course expands on the student’s abilities to conduct and report the results of valid statistical analysis of quantitative health information by focusing on multiple linear regression, two-way analysis of variance models, covariance analysis with single covariate, nonparametric methods, logistic regression with dichotomous and continuous independent, variable, introductory survival analysis, and sample size determination controlling for both type I and type II errors.

The course introduces the basic statistical concepts and methods as applied to diverse problems in audiology. It demonstrates methods of exploring, organizing, and presenting data, and introduces fundamentals of probability, including probability distributions and conditional probability with applications to case-control studies and diagnostic testing. It presents the foundations of statistical inference, including concepts of population parameter, sampling and sampling distribution of estimates, and approaches to inferences using confidence intervals and hypothesis tests for normal and non-normal data, sample size estimation, contingency tables and chi-square tests, 1-way analysis of variance,
simple linear regression and correlation. Statistical software packages, STATA and SPSS are employed to manipulate data and for data analysis.

The research methods aspect provides the student the opportunity to develop competencies in the design, analysis, interpretation and evaluation of health informatics research studies. It exposes the student to theoretical approaches to and practical applications of research. An introduction to empirical methods, including qualitative and quantitative methods, the design of surveys and experiments and analysis of the resulting data, sampling, questionnaire design, data collection and data processing. The course also discusses ethical issues involved in medical research, such as patient consent and confidentiality.

AUDY 612  AUDIOLOGY I
The course provides a general overview of the principles of diagnostic audiology to assess lesions of conductive, cochlear and retro-cochlear disorders. The student will be able to relate the diagnostic procedures to the structure and function of the auditory system and to discuss the relevance of each procedure in diagnosing disorders of the auditory mechanism. The course also aims at assisting the student in acquiring the basic knowledge and practical skills necessary to facilitate and perform introductory clinical practicum.

- Hearing loss – definitions, incidence, effects and variables, prevention and understanding the audiogram. **Lab 1: Reading the audiogram**
- Effective case history, taking basic otoscopy, air and bone conduction, air-bone gaps, masking - when and how to mask. **Lab 2: Air and bone conduction testing, masking**
- Speech audiometry, purpose, relationship to speech acoustics, clinical applications, SRT, WR, MCL, LDL, PI/PB function, speech in noise. **Lab 3: Speech tests**
- Acoustic immittance measures, tympanometry procedures, relationship to ear anatomy, clinical applications. **Lab 4: Acoustic immittance testing**
- Acoustic immittance measures – the acoustic reflex procedures, clinical applications and interpreting the case battery. **Lab 5: Acoustic immittance testing continued**
- Medical correlates of hearing loss – cause and effects, medical issues, case studies, etc. (by ENT)
- Report writing

AUDY 613  AUDIOLOGY II
The course builds on and expands the skills learned in Audiology I (AUDY 612). It also provides advanced skills in physiological measures and procedures used in the assessment of the vestibular system.

- Otoacoustic Emissions (OAE)
- Evoked potential testing
- Electronystamography (ENG)
- Pseudohypoacoustics (special test, used in evaluation)
- Advanced sensoneural test battery: ABLB, MLB, DLI, SIS, tone decay, Bekesy audiometry, and brief tone audiometry. **Lab: Advanced tests**
• Central auditory test for adults. **Lab: Central tests**

**AUDY 614  PEDIATRIC AUDIOLOGY**
This course will give students a good foundation of the different aspects of pediatric audiology, including knowledge of the auditory system development, pathologic processes affecting children’s hearing, central auditory processing, and assessment tools for children and management of childhood hearing loss

• Development of the auditory system: embryology and the development of the outer, middle and inner ear
• Development of the central auditory pathway
• Hearing disorders in children, genetic factors, infectious processes, noise exposure, ototoxicity
• Neonatal indicators for hearing loss, early identification
• Newborn screening protocols
• High risks factors
• Physiological and behavioural assessment procedures for evaluating auditory function (e.g. OAE, ABR, immittance, VRA, play audiometry)
• Appropriate modification of test battery for special needs children
• Developmental milestones and implications of coexisting conditions when assessing children
• Audiology in schools, classroom acoustics
• Screening for school age populations, guidelines, sensitivity specificity, follow-up
• Central auditory processing disorders, management

**AUDY 616  AMPLIFICATION**
The course introduces students to the form and function of amplification devices for persons with hearing loss and clinical strategies for determining candidacy for these hearing devices, as well as clinical procedures for selecting and evaluating performance. It is a combined theory and practical course. The student will:

• Perform and interpret diagnostic tests of hearing aid function
• Describe the type and components of hearing aids
• Perform accurate measurements for selecting hearing aids
• Be able articulate the theoretical basis for hearing aid prescription protocols
• Perform hearing aid selection and verification of performance using real ear measures
• Identify the unique hearing aid needs for the pediatric population
• Demonstrate a professional and caring attitude in counseling new hearing aid users

**Theory**

• Introduction and overview – hearing aid history
- Hearing aid styles and components, trimmers. **Lab 1: Hearing aids, hands-on experience, listening checks**
- Ear molds. **Lab 2: Impression taking**
- Introduction to linear versus compression
- Electroacoustic analysis of hearing aids – ANSI testing. **Lab 3: ANSI test (linear and compression hearing aids)**
- Types of compression input versus output compression, WRDC, TK, multichannel programmable hearing aids. **Lab 4: More ANSI tests and reading hearing aids specs**
- Directional mics – digital features, noise reduction, expansion
- Fitting methods
- Real ear measures. **Lab 5: Real ear measures demonstration**
- NOAH and hearing aid fitting software. **Lab 6: Hearing aid software demonstration**
- Pediatric amplification
- Counseling and outcome measures

**AUDY 617  SEMINAR I**
For Year 2, each student will make a presentation soon after the Year I examinations on his/her thesis research proposal as well as presentations on selected topics to an audience. These scheduled weekly seminars are examinable and students will present progress reports by the close of Semester III.

**AUDY 618  SEMINAR II**
In Semester IV, students are expected to attend all specified seminars and make presentations on their research projects. The students’ weekly oral presentations will be assessed at each presentation. In addition, students will be expected to present a full write-up of their presentations for examination each semester. The students will focus their seminars on their research areas in respect of their research dissertations or theses.

**AUDY 619  INDUSTRIAL AUDIOLOGY & SPECIAL TOPICS IN AUDIOLOGY**
The course will provide students with a good knowledge of the most important concepts and practices involved in occupational hearing conservation. It will cover principles of noise control, hearing conservation, design of educational programmes and legislation relating to noise exposure.

- Principles of noise control
- Hearing conservation
- Education
- Legislation

**Special Topics**

- Profoundly impaired populations – special considerations
• The aging adult population – special consideration
• Cochlear implants
• Tinnitus
• Forensic audiology
• Audiology in Ghana – special considerations, e.g. validity of test measures, meeting demand for services with available personnel, cost of rehabilitation devices, social factors and the issue of noise

CLINICALS

AUDY 602  CLINICAL PRACTICUM I

This is a clinical course acquisition of experience in audiological assessment and rehabilitative procedures. Students will be in clinics each lasting 3 hours a session (9 hours a week) guided by faculty. Students will be evaluated at the end of the semester by a clinical examination. Students will be involved in:

• Interviewing and taking case histories
• All aspects of puretone testing (including masking)
• All aspects of speech testing (including masking)
• Administration of special tests, e.g. central auditory processing, ABLB, SISI, auditory evoked potential (ABR, OAE)
• Impedance imittance testing
• Stapedial reflex testing
• Electroacoustic analysis of hearing aids
• Prescription and fitting of hearing aids
• Evaluating benefit from amplification
• Report writing
• Counseling patients based on audiological findings

AUDY 610  CLINICAL PRACTICUM II: ADVANCED AUDIOLOGY PRACTICUM

This is a clinical course divided into two parts. The first part involves clinical competency development in diagnostic and rehabilitative procedures and is taken during Semester III under the guidance of faculty. The second part involves four months of clinical experience in diagnostic and rehabilitative procedures and takes place at the end of Semester III. These shall be in the form of out-patient clinics lasting 3 hours a session. Students will take a final clinical and oral examination at the end of the course.
AUDY 615  VOCATIONAL TRAINING I

This is a 6-week, whole day inter-semester clinical training period at the end of Semester I to allow students to obtain practical hands-on experience. Students will undertake introductory clinical training involving directed observation and clinical experience in audiological assessment and rehabilitative procedures and observations in speech and language clinics. This will be taken between Semester I and II.

Students shall be evaluated at the end of the clinical vocational training on the basis of student log books and oral examination.

AUDY 621  CLINICAL TRAINING II

This is a 6-week, whole day inter-semester clinical training period at the end of Semester II during which students work independently but under supervision of faculty to obtain practical hands-on experience in diagnostic and rehabilitative procedures. Students shall be evaluated at the end of this vocational training on the basis of student log books and oral examination.

AUDY 623  CLINICAL TRAINING III

This is a 6-week, whole day inter-semester clinical training period at the end of Semester III during which students work independently but under supervision of faculty to obtain practical hands-on experience in diagnostic and rehabilitative procedures (See AUDY 610). Students shall be evaluated at the end of this vocational training on the basis of student log books and oral examination.

RESEARCH PROJECT (THESIS/DISSERTATION)

AUDY 620  RESEARCH PROJECT DISSERTATION

The Dissertation is to assess the student’s ability to pursue scientific research. The research project involves a supervised individual task in audiology, identification or definition of a specific problem in audiology and formulation of a research hypothesis. The student designs and plans a project to test the hypothesis, undertakes the project, discuss available literature on the problem, critically analyzes the problem, suggest appropriate solutions based on sound scientific principles and evidence-based practices, interprets the information/results obtained, and finally writes a thesis/dissertation in an acceptable scientific format. The thesis/dissertation shall comply with all the requirements set out in the University of Ghana Handbook for Graduate Studies.
ELECTIVES

The underlisted courses are electives to be taken in Semester IV. These are specialized areas in audiology and students must select at least 1 and at most 3 according to their interest and areas of future specialization.

AUDY 622 OCCUPATIONAL HEARING LOSS
This course builds on the knowledge of the most important concepts and practices involved in occupational hearing conservation covered in AUDY 619 and introduces the student to specialization in the area of occupational hearing loss. Recent advances in this field will be covered.

- Auditory effects of noise, solvents and agricultural use of pesticides and their prevention
- Training programmes in Occupational Health Conservation
- Employee training in Occupational Health Conservation
- Audiometric testing, review and referral
- Workers compensation
- Medico-legal issues
- Marketing issues

AUDY 624 EARMOLD TECHNOLOGY
This course builds on the knowledge and skills previously acquired in other courses and clinical practicum. It aims at providing the student with a firm foundation towards specialization in this special area of audiology.

- History of earmolds – purpose, earmold styles, materials, tubing, venting
- Impression taking and earmold techniques- detailed anatomy of the external ear, anatomy of earmold, otoscopy, problems in the ear, manufacture of earmolds
- Earmold counseling
- Earmold care

AUDY 626 NEWBORN HEARING SCREENING
The course builds on and expands the skills AUDY 614 (Pediatric Audiology) and provides advanced skills leading to specialization in the areas of practice. Recent advances in the specialty will be incorporated into the learning experience.

- Principles of screening, ethics
- Infant hearing screening – OAE, ABR, tympanometry, and the behavioural methods for NICU
- Significance of pre-lingual hearing loss
- Prevalence of hearing loss in early childhood
- Significance of hearing loss in early childhood
• Significance of early detection
• Hospital-based versus community-based hearing screening and their challenges, cost benefit analysis
• Targeted/Universal newborn screening
• Practical attachments to NICU

AUDY 628 EVALUATION OF VESTIBULAR FUNCTION
The course is designed to provide instructions on the anatomy and physiology of the vestibular mechanism and the vestibulo-occulomotor pathway. It is designed to equip the student with how eye movements are controlled and how certain neural lesions can cause eye movements to be deranged. The course will also assist the student in acquiring the basic knowledge and practical skills of electronystamography (ENG). At the end of the course, the student will be able to interpret ENG tracing and be able to calculate caloric test results and make notes of observation and events that would influence test interpretation.

• Applied neurophysiology- assigned reading
• ENG laboratory room- electrical safety
• Eye movement recording
• Nystamographs – basic
• Patient preparation – examination auditory canal, evaluation of eye movements, application of electrodes, inspection of tracing
• Measurement of nystagmus intensity
• Various tests - gaze, saccade, tracking, positional, caloric tests
• Normal variations and abnormalities
• Clinical observations

AUDY 632 AUDITORY BRAIN-STEM RESPONSE
The course introduces students to the electro-physiologic assessment of the auditory system using short latency potentials. This course will equip students with the theoretical and practical applications of ABR. At the end of the course, students will be able to assess the caudal levels of the brainstem in both children and adults.

• Overview
• Neural generators
• Instrumentation, calibration
• Normative aspects
• Abnormalities – hearing loss and ABR, neurologic disorders and ABR
• Clinical observations

AUDY 634 SIGN LANGUAGE
The main objective is to expose students to the various modes of communication with the deaf, i.e., sign language and manual alphabets, and the growth of deaf community as a cultural
identity. At the end of the course, students should be able to define deafness in terms of audiometric and social (cultural) perspectives, show understanding of the views on deafness and thought and assist in the management of deaf individuals (counseling) and act as interpreters for the deaf.

- Communication controversy
- Ghanaian Sign Language (GSL)
- American Sign Language (ASL) – development, manual alphabets and signs
- Linguistics analysis of ASL
- Signed English
- Growth of deaf community
- Comparison between deaf parents and their children and children of hearing parents – changing uses of the sign
- Attachment to a school for the deaf to learn basic ASL