



**West African Genetic Medicine Centre (WAGMC)**

**College of Health Sciences**

**HANDBOOK FOR POSTGRADUATE PROGRAMMES  
March, 2020**

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Language of Instruction: English

Read this handbook in conjunction with the University's Graduate student handbook. The University Graduate student handbook has general information, rules and regulations pertaining to the Graduate School.

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## 1. DIRECTOR'S WELCOME

Welcome to the West African Genetic Medicine Centre (WAGMC), an African Centre of Excellence (ACE) of Higher Education in the University of Ghana (UG). We are located on the university's serene Legon campus in the capital city of Accra. WAGMC was conceived in response to the ACE Impact initiative of the World Bank. This initiative aims to equip Africa to use postgraduate education to address major developmental challenges of the continent. We identified human genetic disorders as a major regional health challenge. I am thrilled to share with you that the World Bank gave our application a perfect score for our strategy to address the problems posed by human genetics, and the seed funds to establish WAGMC.

WAGMC offers training in behavioural, clinical and biomedical genetics, conducts large-scale and cutting-edge genomics research that is supported by additional funding from the NIH as part of the H3Africa consortium. We are building a sustainable platform for genomics entrepreneurship in Ghana in alignment with the strategic plan of the UG (UG) to becoming a major research-intensive entity in the region <http://www.ug.edu.gh/publicaffairs/ug-strategic-plan-2014-2024>. The UG offers a vibrant academic environment for our large pool of outstanding lecturers. Visiting lecturers from universities with some of the leading genetics programmes in the world add to the richness and diversity of our faculty. Our educational programmes are designed for students seeking postgraduate training in behaviour, clinical, human and medical genetics. The MSc in Genetic Counselling is the first in the sub-region. Our programmes have relevant and applicable course content, to gain accreditation from recognized bodies, and meet international standards. We work closely with many sectoral partners such as the Ghana Psychology Council, the Ghana College of Physicians and Surgeons, the Sickle Cell Foundation of Ghana, and regional partners including the African Society of Human Genetics. These partnerships offer our students exciting internship opportunities in many aspects of genomics medicine all over the world.

Our research is focused on genetic disorders that pose a major public health burden in Africa notably sickle cell disease. We are focused also on the genetics that drive the pathobiology of common diseases, including breast cancer, prostate cancer, haematologic malignancies, diabetes and rare diseases. Mentorship is a WAGMC core value, and it is defined by models that empower students to establish solid academic and social foundation for lifelong learning. By joining WAGMC you will learn from an internationally diverse faculty committed to grooming a new generation of genetics health professionals to take on the challenges of genetic disorders in Africa. You will have the opportunity to learn in a diverse culture; we are committed to recruiting at least 40% of our students from outside Ghana. Our administrative staff are ready to guide and support your academic journey.

As a *molecular geneticist*, it gives me great pleasure to be part of your journey to becoming a geneticist. It is a challenging and yet achievable career goal. Let your journey be guided by passion, integrity, courage and compassion. Allow the transformative energy inside you to propel you to greater heights than you have imagined for yourself. As we say in Ghana, *Akwaaba*; join WAGMC and be part of the genetics revolution simmering at the origins of the human race. I am looking forward to continuing this dialogue. Contact me to learn more about the WAGMC [sofori-acquah@ug.edu.gh](mailto:sofori-acquah@ug.edu.gh).

## 2. VISION and MISSION

### **Our Vision**

To improve access to genetic health

### **Our Mission**

We foster a culture that integrates research, teaching and learning, service and community and public engagement to advance knowledge of human genetics, and to further the ability to overcome genetic disorders to promote health.

## 3. GOVERNING STRUCTURES

WAGMC operates as an academic Centre of the College of Health Sciences under the statutes of UG <https://www.ug.edu.gh/about/statutes-of-the-university>. The UG statutes define a Centre as an establishment which conducts specialized programmes normally oriented to providing services including teaching, research or advocacy. It is governed by the by-laws, and other UG policies <http://www.ug.edu.gh/legalcounsel/rules%20and%20regulations>. WAGMC is dedicated to the provision of services including teaching, research and advocacy related to genetic medicine. The Centre has financial autonomy and is responsible to mobilize and spend its resources with oversight from the UG Finance Directorate. UG provides administrative, academic, procurement and financial management support. The WAGMC Director has exactly the same status as a Dean in UG with the authority to hire faculty, and to develop degree programmes. All major strategic and operational activities of WAGMC is approved by a CMC, which chaired by the Centre Director.

The membership of the CMC includes the following officers:

1. Director of WAGMC (chair)
2. Deputy Director of WAGMC
3. Chair of the WAGMC SAB
4. Chair of the WAGMC ISAB
5. WAGMC Education and Training Coordinator
6. WAGMC Sectoral Liaison Officer
7. WAGMC Research Coordinator
8. WAGMC Monitoring and Evaluation Officer
9. WAGMC Environmental and Social Safeguards Officer
10. Directors of the WAGMC Core Laboratories
11. Representative of the UG Vice-Chancellor of professorial rank
12. Representative of the Chief Executive Officer of the major tertiary/quaternary partner hospital (e.g. UGMC) of WAGMC who holds the position of Director within the hospital
13. Industry partners representative
14. Dean of the School of Medicine and Dentistry
15. Dean of the School of Biomedical and Allied Health Sciences
16. Head, Department of Psychology
17. Head, Department of Biochemistry, Cell and Molecular Biology

18. A non-faculty staff representative of WAGMC
19. A representative of the WAGMC student body
20. Project Manager/Centre Administrator (Secretary, ex officio)

## 4. GENDER EQUALITY

In an effort to accelerate social progress and achievement of developmental goals within Ghana and the rest of West Africa, WAGMC is committed to ensuring every student regardless of gender is given equal opportunity and access to resources to help them reach their highest potential regardless of gender. We strive to create an environment that is devoid of discrimination and in so doing positively impact the success of our students, and beyond that to groom individuals and professionals who will continue with this culture where ever they find themselves. Every student will be provided with necessary support within reason to help them successfully complete their programme. Access to mentorship and research opportunities is available to all without bias or favour. Awards of fellowships and scholarships are based on merit and need.

## 5. STUDENT CITIZENSHIP

Our core values are service, transparency, innovation and entrepreneurship. Every student, faculty and staff of WAGMC should feel they belong and have a collective responsibility to live our values. We encourage our students to develop a sense of social responsibility and a passion for making an impact by adding their voices and playing an active role in the activities planned at WAGMC. We offer several opportunities to participate in our community engagement events which are tailored to help WAGMC make a real impact on genetic disorders in Ghana and beyond by creating awareness and educating the public about the programmes WAGMC is offering to help combat the challenge of genetic disorders. We hope that by being a part of WAGMC every student and fellow will develop this sense of service to the nation and Africa at large. It is important to us that every student comes to appreciate the role that transparency plays in the success of any organization. The management of WAGMC make every effort to be transparent in its dealings as is demonstrated by the display of policies and procedures on our website. In line with this we wish that by graduating from WAGMC every student will come to understand and apply transparency in their individual activities as well as the organizations they eventually work for. The Centre also strives for innovation in ideas, tools and practice. We make every endeavour to advance new concepts that challenge existing paradigms that have failed to overcome barriers. In the same vain we encourage our students to work towards new ideas that address long standing problems in our society, to develop these ideas into goods and services that truly improve the wellbeing and standard of living in our region and to fight any culture that does not advance the improvement of our human state.

## 6. STUDENT WELFARE

### 6.1 Registration and Induction

The University requires all fresh students to report at least one week before the commencement of the academic year to go through a process of registration and orientation. Orientation is compulsory for all freshmen. All students are required to register fully with the Hall of Residence, the Academic Affairs Directorate and their relevant School/ Department(s). In addition to the orientation organized by the university, students enrolled by WAGMC will be required to participate in a short orientation programme at the Centre. Students may contact the following offices for more information on registration and induction/orientation.

The Director (Academic Affairs Directorate), University of Ghana,  
Registrar's Office  
P.O. Box LG 25, Legon, GHANA.  
Email: [academic@ug.edu.gh](mailto:academic@ug.edu.gh)

The School Administrator  
School of Graduate Studies,  
University of Ghana  
Legon.  
E-mail: [sgsadmissions@ug.edu.gh](mailto:sgsadmissions@ug.edu.gh)

The Centre Administrator  
West African Genetic Medicine Centre  
1 Ebenezer Road  
University of Ghana  
Email: [mnuno@wagmc.org](mailto:mnuno@wagmc.org)

### 6.2 Student Voice and Wellbeing

The UG tutorial system offers an opportunity for the voice of the student body to be heard. There are several committees and associations through which students' rights and interests are protected.

**Students Representative Council (SRC) and Junior Common Room (JCR) Committees:** The SRC and JCR are responsible for all aspects of students' welfare within the University. They coordinate the activities of academic, cultural, religious, political and recreational clubs and societies for students. All students automatically become members of the SRC when they register as students at the University. Executives of the SRC represent the student body at meetings of the University Council Board and all committees that deal with student welfare issues. The JCR executives in the UG are presidents of the residential halls who are elected by residents of the halls to run social events and activities, provide advice and support as a mechanism to voicing student concerns. The SRC also fosters good relations between students of the University and the outside world by coordinating with other student organisations both nationally and internationally.

**The Graduate Students' Association:** The Graduate Students' Association was formed to cater for the special needs of graduate students. All graduate students registered at the University are automatically members of the Association. The Association organizes seminars, special fora and social mix events, all aimed at enhancing greater interaction among graduate students. Students are encouraged to partake in their annual events.

**Disabled Students Association:** This association caters for students with special needs aimed at promoting their interest and welfare on campus.

### 6.3 Emergency and Security Services

The UG and WAGMC regards the safety of students and their belongings of paramount importance and will do everything possible to prevent the occurrence of crime on the University campus. The University employs a team of qualified security officers which is managed by the Physical Development and Municipal Services Directorate. The security team is responsible for ensuring a safe environment and protecting property of the University. Members of the University security team dress in green uniforms and carry ID cards making it easy to identify them. The main security office is located at the main gate of the University. There are also several security posts at vantage locations all over campus.

#### UG Security Contact Details

Head of Security: +233 (0) 24 333 6619

Office line (Main gate): +233 (0) 30 397 5594

James Topp Nelson Yankah Gate: +233 (0) 55 064 4644

Okponglo Gate: +233 (0) 55 063 3633

Security Hotlines: +233 (0) 54 103 1602 /+ 233 (0) 20 735 6867 / +233 (0) 27 096 7985

Security Operations: + 233 (0)24 263 4881

Security Night Patrols: +233 (0) 24 496 0201

**Ghana Emergency Contact Number:** For circumstances involving immediate danger and /or if crime is in progress dial the emergency phone number **112** to access Police, Fire Service, and Ambulance services.

### 6.4 Accommodation

The University believes in community living as an essential part of student life. It is therefore primarily residential, providing accommodation in Halls of Residence for both undergraduate and postgraduate students as well as flats and guest rooms for senior members and guests. There are 13 halls of residence and 2 hostels (available to all students) on the Legon campus, and additional hostels on the Korle Bu campus.

Some Halls consist of junior members (students) and senior members (academic and senior administrative and professional staff) and is managed by a Council comprising members elected by persons belonging to the Hall. Each Hall has Junior and Senior Common Rooms for students and faculty, respectively. Each Hall has a kitchen and a dining hall to cater for students' feeding.

The halls and hostels are below.

### **University Halls**

- Legon Hall
- Akoafo Hall
- Commonwealth Hall
- Volta Hall
- Mensah Sarbah Hall
- Jubilee Hall
- Hilla Limann Hall
- Alexander Adum Kwapong Hall
- Jean Nelson Aka Hall
- Elizabeth Frances Sey Hall
- International Students' Hostel

### **Private halls**

- African Union Hall [Ghana Hostels Limited]
- James Topp Nelson Yankah Hall [TF Hostel]
- United Nations Hall [Evandy Hostel]
- Bani Hostel

### **Graduate Hostel**

The Valco Trust Hostel is a block of purpose-built, self-contained flats for graduate students. The hostel has the capacity to accommodate 190 students. It is located behind Mensah Sarbah Hall on the southern part of the campus. The flats are arranged in single and double study bedrooms with en suite shower and toilet. There is a shared kitchen for every twelve rooms. Facilities in the hostels include common rooms, washrooms and a restaurant.

### **International Students' Hostels**

There 2 International Student's Hostels are located on the southern part of the campus off the road to the Noguchi Memorial Institute for Medical Research. Each has 43 single rooms and 85 double rooms. To ensure the safety of students the hotels are well fortified with security fencing. In addition, there are facilities such as kitchenettes and restaurants.

## Other Hostels

There are also a number of private hostels situated close to the Legon Campus. A list of these can be obtained from the Office of the Dean of Student Affairs.

For information about accommodation cost visit: <https://www.ug.edu.gh/aad/fees>

## University Guest Centre and Yiri Lodge

The University Guest Centre and the Yiri Lodge both have restaurants and rooms for the University's guests.

## 6.5 Banks

There are many banks that offer banking and financial services on UG campus. Most are located at the Banking Square (near the University Basic School) and also behind the University Bookshop. There are also a number of ATM's located at vantage points on campus.

## 6.6 Restaurants and Mini Market

There are restaurants in the various Halls of residence and hostels on the University campus. There is also a bush canteen which serves mainly local dishes to the University community as well as the general public. Students also have the option of shopping from the mini market or the convenience shop located near the International Students Hostel and the Banking Square.

## 6.7 Student Staff Liaison Committee (SSLC)

The views of students enrolled at WAGMC is taken seriously. WAGMC provides a safe environment for students to provide feedback about academic programmes as well as organizational processes to their faculty and administrative staff. This feedback helps us improve upon student experience and ensure that students are given the opportunity to reach their potential. The SSLC at WAGMC is chaired by the Student Representative on the WAGMC Core Management Committee. Other members include an elected student representative from each programme/department and coordinators or directors of programmes. The SSLC will meet twice in a semester. It is the duty of the representatives to follow up on suggestions so as to implement impactful change.

## 6.8 Personal Tutors and Senior Tutors

Each residential hall has personal and senior tutors who are responsible for the welfare of students residing in their halls. They provide leadership and guidance on matters relating to student welfare. They work in partnership with heads of academic units and some resource centres to provide support to students. List of personal and senior tutors can be found at: <https://www.ug.edu.gh/university-leadership/halls>.

## 6.9 Communication

All WAGMC students have the freedom and right to communicate. In article 19 of the Universal Declaration of Human rights, “Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers (United Nations, 1948). Students are therefore encouraged express to their opinions and are given an opportunity to be heard although this should be done in a respectful manner.

## 6.10 Faculty Communities

Students can join in activities organized by the faculties on campus. The Political Science Students Association, the Law Students Union, the National Association of Science Students, the Medical School Writers Club, the Ghana Association of Medical Students, the Agricultural Science Students Association and the Ghana National Association of Teachers (Legon Branch) are a few examples of such associations which seek to protect and promote their respective academic and professional interests.

# 7. UNIVERSITY RESOURCE CENTRES

## 7.1 Health Services

The University Hospital consists of an Out-patient Department, an Operating Theatre, an X-Ray Department, a Laboratory and a Ward section, a Paediatric Ward, an Emergency Unit and a Dental Clinic. The Hospital offers medical attention to all members of the University community, namely, students, staff and staff dependents, as well as members of the public. All new students to the University are given a thorough medical examination at the beginning of their first year. Likewise, members of staff go through thorough medical examinations on their first appointment. The University also has a Students Clinic located in the Central Cafeteria Building where students can access medical treatment.

Below are the telephone number for the University Hospital.

+ 233 (0) 30 397 4641

+ 233 (0) 30 703 0184

+ 233 (0) 59 555 1971

## 7.2 Office of Students with Special Needs

The UG is committed to a policy of equal opportunity in education and to ensuring that students with disabilities have as complete and equitable access to all facets of University life as can be reasonably provided. The University has taken steps to ensure that no student with any form of disability is disadvantaged in the pursuit of academic laurels. Toward this end, the University has an Office of Students with Special Needs located on the La Road. The Office has a Coordinator who is supported by a number of resource persons. Students with the following categories of disability may register with the office.

- Hearing Impairment/Deafness
- Visual Impairment/Blindness
- Specific Learning Difficulties
- Physical Disability
- Medical Disability
- Mental Health Difficulties

The Office helps identify varied needs of the affected students and provides support services to enable them achieve optimum academic outcomes. The support includes: brailles, readers, interpreters, enlarged prints, note-takers and alternative examination arrangements.

### 7.3 Library Facilities

The University library system consists of the main library, the Balme Library and libraries of Schools, Colleges and Institutes as well as Departmental and Hall libraries. Together they form the library facilities that support teaching, learning and research in the University. Non-members of the University are allowed use of these facilities but do not have borrowing rights. The University library system has been automated using the Innopac Millennium Library Management System. Resources of the Library System may be accessed online at <http://library.ug.edu.gh/>. Also available are online academic databases covering all the subject disciplines.

### 7.4 IT Centre

The UG Computing Systems (UGCS) department located in the left side of the Balm Library is responsible for providing IT services required by the University to advance teaching and research. The department also provides and maintains the core IT systems, tools and services used to keep the University running. Internet facilities are available in the UGCS building, schools and departmental computer laboratories and libraries. There is Wi-Fi internet access in most halls of residence and academic areas.

For more information contact UGCS via email: [helpdesk@ug.edu.gh](mailto:helpdesk@ug.edu.gh) or on phone +233 (0) 302 213 820, (0) 302 213 850.

### 7.5 University Bookshop (Managed by Kingdom Books & Stationery Limited)

Located at the University Square, the University Bookshop stocks a wide selection of textbooks and other reading material and is open to the general public.

### 7.6 Language Centre

The Language Centre is responsible for teaching and research related to improving proficiency in English and Ghanaian Languages. The Centre also runs a Certificate programme in English Proficiency for students from non-English speaking countries.

For more information about the Language Centre please visit <https://www.ug.edu.gh>.

Email: [pad@ug.edu.gh](mailto:pad@ug.edu.gh)

Tel: + 233 (0) 302 500 381.

## 7.7 Student Careers and Counselling Centre

The Careers and Counselling Centre offers comprehensive, professional counselling as well as a career and placement service to all members of the University. The Centre strives to maintain an independent and congenial environment in which people can freely seek information and professional help on various concerns.

Counselling is confidential and is provided only at the request of, or with the concurrence of, the person involved. Students may report for individual counselling on a variety of concerns ranging from short-term academic, social, personal and family concerns to longer-term emotional and psychological problems. Group counselling is provided on specific concerns frequently expressed by students. Preventive counselling lectures and seminars are organised at various times of the year on topics intended to stimulate positive and healthy development and discourage habits which tend to create problems for students.

The Centre also offers a basic career and placement service for students and alumni. Under this programme:

- i. Students are assisted with self-assessment, career choice, and self-penetration, including writing of applications and resumés, and performance at interviews;
- ii. Colloquia between students and representatives of major employing organisations are held yearly at which students learn about the functions and operations of major establishments in the country, the range of jobs offered to university graduates, and the corresponding qualifications and personal attributes required;
- iii. Students and alumni are assisted to get placement on jobs through introductory letters, direct canvassing by the Centre and liaison with employers for campus interviews.

The Centre has an information room containing literature on post-graduate and professional courses offered by this University and foreign institutions as well as a modest collection of books and leaflets on a number of careers suitable for graduates in various disciplines.

For more information visit: <https://careers.ug.edu.gh>

Email: [careers@ug.edu.gh](mailto:careers@ug.edu.gh)

Tel: + 233 (0) 20 499 9221

## 7.8 Child Care - University Nursery

The University inaugurated the UG Crèche and Early Childhood Learning Centre on the Legon campus. The Centre, called The Baby Nest started operating in 2015 and is under the management of The Baby Nest Company Ltd. The facility provides a crèche facility to mothers who work or study on the University campus as well as the general public. They accept children from 3 months to 4 years old offering them a fun, safe and stimulating learning

environment with sessions and activities catered to meet the needs of every child. The staff at Baby Nest are qualified professionals who make the safety of children in their care a high priority.

For more information about registration kindly visit them on [www.thebabynest.org](http://www.thebabynest.org) or contact them by telephone on +233 (0) 20 536 2340.

### 7.9 Office of the Dean of Student Affairs

The Office of the Dean of Student Affairs provides counselling and information services for students, administers the non-academic student disciplinary system and student grievance procedure, and assists in non-academic programme development. The Dean works in close collaboration with the Heads of Halls, the SRC, the Sports Directorate, the Careers and Counselling Centre and the Public Affairs Directorate.

For more information contact the Office via email on: [deanstudents@ug.edu.gh](mailto:deanstudents@ug.edu.gh) and by phone on + 233 (0) 302 500 7881.

### 7.10 International Programmes Office (IPO) - International House

The Office of International Programmes co-ordinates and promotes all of the university's external relations with regard to international students, visiting scholars, external staff training programmes and research collaboration. The office offers a variety of services to international students and scholars from reception and orientation programmes to volunteer opportunities. The Office also provides nana students with opportunities to study abroad.

The office of the IPO can be located on the first floor of the International House, Annie Jiagge Road, P.O.Box LG 586, Accra-Ghana.

Email: [arip@ug.edu.gh](mailto:arip@ug.edu.gh)/[sip@ug.edu.gh](mailto:sip@ug.edu.gh)

Tel: +233 (0) 30 393 7244

### 7.11 Extra-curricular activities/Sports/Clubs

There is a wide choice of clubs and societies on campus for students. Students maintain interaction with each other and the wider community through recognized clubs and societies. There are also a number of charitable and benevolent societies which operate on campus, for instance, the Child Survival Club, the Rotaract Club and the Student Services Organization, to name a few. Extra-curricular activities do not end with clubs and societies. A number of international clubs are also very active on campus.

Hall Weekends are big events on campus. Students' imagination and innovation are put to the test in week-end celebrations. Inter Hall Football Galas are also organized to the delight of sports fans. There is also an annual inter Halls Cross Country race coordinated by the Sports Directorate. The University in 2005, begun a process to better integrate sports into academic programmes and has also taken steps to increase focus on wellness issues for students and

staff. This has involved significant administrative, infrastructural and programme development.

<https://www.ug.edu.gh/sports/>.

## 7.12 Religious Activities

Chapels and a Mosques are also available for use by various religious denominations. A Chaplaincy Board co-ordinate the activities of religious groups. Religion is catered for by a variety of religious bodies and associations which include the Presbyterian Students Union, the Legon Pentecostal Students Union, PaxRomana, the Ghana Muslim Students Association, the Ahmaddiya Muslim Students Union, the Anglican Society, the University Christian Fellowship and the NichirenShoshu to name a few.

## 8. LINKS TO IMPORTANT UNIVERSITY POLICIES

University Rules and Regulations

<https://www.ug.edu.gh/about/statutes-of-the-university>

<http://www.ug.edu.gh/legalcounsel/rules%20and%20regulations>

Sexual Harassment Policy

<https://www.ug.edu.gh/pad/sites/pad/files/u6/paddocs/Sexual%20Harassment%20and%20Misconduct%20Policy%20Web.pdf>

Research Policy

<http://www.orid.ug.edu.gh/research-policy-0>

Scholarships

WAGMC Scholarship Policy: <https://www.wagmc.org/students/scholarships/>

Student Financial Aid Office website: <https://www.ug.edu.gh/aid/welcome/>

## 9. KEY WAGMC CONTACTS

All further enquiries regarding WAGMC should be sent to the addresses below.

### **Centre Leader**

Professor Ofori-Acquah

Email: [soforiacquah@edu.gh](mailto:soforiacquah@edu.gh)

### **Deputy Centre Leader**

Professor Lorna Awo Renner

Email: [larenner@ug.edu.gh](mailto:larenner@ug.edu.gh)

### **The Centre Administrator**

Melissa Nuno

Tel: +233 (0) 302 959 246

Email: [mnuno@wagmc.org](mailto:mnuno@wagmc.org)

### **Communications and Marketing**

Jane Hutchison

Tel: + 233 (0) 302 959 246

Email: [jhutchison@wagmc.org](mailto:jhutchison@wagmc.org), [info@wagmc.org](mailto:info@wagmc.org)

### **Student Liaison**

Derek Doku

Email: [amarteydd@gmail.com](mailto:amarteydd@gmail.com)

Enquiries on Graduate School programme offerings may be sent to the contacts below.

### **Dean, Graduate School**

Professor Kwaku Tano-Debrah

Email: [dgs@ug.edu.gh](mailto:dgs@ug.edu.gh)

### **Administrative and Admissions Offices**

Email: [sgsadmissions@ug.edu.gh](mailto:sgsadmissions@ug.edu.gh), [thesisoffice@ug.edu.gh](mailto:thesisoffice@ug.edu.gh)

Phone: +233 (0) 30 396 6098, (0) 50 023 1039, (0) 54 546 2156

## 10. ETHICS IN RESEARCH AND RESEARCH COMPLIANCE

WAGMC recognizes that ethics is an integral part of the research endeavour, and should be evident throughout the entirety of research, from planning through implementation to dissemination of results. The Centre and UG recognizes the protection of the dignity, rights, safety and well-being of human participants and the prevention of cruelty to animals in all research. Ethical research also encompasses the avoidance of misconduct, plagiarism, data forgery, misuse of Centre and University resources and conflict of interest, among others. All human subject research conducted at WAGMC must be performed under a research protocol approved by the College of Health Sciences ethics board. <https://chs.ug.edu.gh/research/ethical-protocol-review>. In addition, all research undertaken UG by faculty, students and research affiliates of the University shall comply with UG ethical guidelines in order to promote best practice. To achieve this, UG has put in place the measures below.

1. *Mandated relevant Units to set up ethics and research committees.*
2. *Established a university-wide system of ethical clearance for research building on existing Ethical Review Committees in relevant academic units.*
3. *Trained and certified researchers working with human and animal subjects in ethical research.*
4. *Provided guidance on research ethics for all staff and students.*
5. *Prepared a code of practice for research.*

UG-wide policies and guidelines on the ethical conduct of research is available at the Office of Research, Innovation and Development.

[https://orid.ug.edu.gh/sites/orid.ug.edu.gh/files/research\\_ethics\\_policy/files/assets/basic-html/index.html#1](https://orid.ug.edu.gh/sites/orid.ug.edu.gh/files/research_ethics_policy/files/assets/basic-html/index.html#1)

## 11. ACADEMIC INFORMATION AND YOUR DEGREE COURSE

### 11.1 University Calendar and Course Timetables

The university provides students, faculty and staff with information on events, important dates, course and exams timetables. All members of WAGMC are encouraged to visit the UG website for details of the academic calendar. <https://www.ug.edu.gh/academics/calendar>.

Students enrolled at WAGMC will also be given course timetables and schedules specific to their programmes by course leaders. A schedule of other activities and events pertaining to the Centre will be periodically posted on the Centre's website [www.wagmc.org](http://www.wagmc.org).

### 11.2 Postgraduate Programmes

WAGMC offers students the opportunity to pursue MSc, MPhil and PhD degrees studying a wide spectrum of genetics topics, ranging from genetic counselling to cancer genetics. Courses are hosted by WAGMC and several affiliate departments. Students have the opportunity to conduct research, clinical practice, and other field work at partner academic institutions in Africa, Europe and in the US.

#### 11.2.1 MSc Genetic Counselling

*Programme Leader, Annabella Opore-Henaku, PhD in Counselling Psychology, Virginia Commonwealth University, USA.*

The MSc in Genetic Counselling programme is hosted by WAGMC. It is a uniquely designed programme intended to prepare students to practice as Genetic Counsellors, while setting the tone for life-long learning in the field via development of skills in research, teaching, public education, critical thinking, and leadership. The programme provides current knowledge in human genomics, genetics, genetic analysis and bioinformatics, and equip students with relevant communication and counselling skills required to work in genetic counselling. The course adopts a science-practitioner model that enables broader view of clinical practice and ensures competencies for effectively bridging the gap between the complex scientific knowledge of human genetics and the information and support services available to patients, individuals, and families at risk of or affected by genetic conditions.

## A. Objectives

- To provide students with in-depth understanding in genetics necessary to support clients with accurate explanations of the genetic bases of inherited diseases and those acquired through somatic mutations.
- To empower students to competently and professionally explain to clients, genetic screening procedures for different types of conditions as well as the biopsychosocial implications of genetic disorders and risks.
- To introduce students to the fundamental aspects of genomics and bioinformatics that underpin clinical practice.
- To equip students with essential psychological principles and skills in communicating complex health information to clients of varied socioeconomic and cultural backgrounds.
- To prepare students to offer ethical and professional genetic counselling services with the ability to competently manage ethical, legal, and social issues that may arise in practice
- To offer the opportunity for students to pursue specializations in genetic counselling and other in career pathways including genetics education, public advocacy, and research
- To generate postgraduates capable of addressing the clinical, laboratory, psychosocial, educational, and research needs of individuals, families, societies, and other healthcare professionals and trainees in ways that meet national and international standards in genetic counselling.

## B. Admission Requirements

Students need a good first degree in the biomedical sciences, psychological sciences, public health, and other health sciences to qualify to be enrolled in the MSc Genetic Counselling programme.

## C. Duration of Programme

The MSc in Genetic Counselling is a 2-year, full time programme by course work, research, and clinical practice at a number of off-campus hospitals and medical centres.

## D. Programme Structure

The 2-year MSc Genetic Counselling programme comprises of core and elective courses in the first and second semesters of year 1. During the first and second semesters in year 2, and in-between semesters (i.e., year 1 semester 1 vacation, year 1 semester 2 vacation, and year 2 semester 1 vacation), students complete a total of 1024 clinical practicum hours. Practicum hours are rotated across various laboratory, general clinical, and specialist medical units (e.g., paediatrics, obstetrics and gynaecology, oncology, cardiology, and sickle cell units). Beginning

from the first semester of year 2, students complete a research thesis, which is defended orally at the end of year 2.

A semester is typically structured as 20 weeks comprising of:

- 17 weeks of teaching and learning
- 1 week of revision
- 2 weeks of exams

#### E. Courses Per Semester

Total minimum credits/duration of time allocated to core courses, elective courses, seminars, clinical practicum, and thesis research per semester are as follows:

<b>PERIOD</b>	<b>COURSE</b>	<b>COURSE CODES</b>	<b>CREDIT/DURATION</b>
<b>Year 1, Semester 1</b>	Core Courses	GENC 601, 603, 605, 607	12 credits
	Elective Courses	GENC 609, 611, 613, 615	2 – 5 credits
<b>Year 1, Semester1 Vacation</b>	Inter-Semester Clinical Attachment	GENC 600	160 hours (8hours a day for 4weeks)
<b>Year 1, Semester 2</b>	Core Courses	GENC 602, 604, 606, 608	12 credits
	Elective Courses	GENC 614, 616, 168, 622	2 – 5 credits
	Seminar I	GENC 612	3 credits
<b>Year 1, Semester2 Vacation</b>	Inter-Semester Clinical Attachment	GENC 600	320 hours (8hours a day for 8 weeks)
<b>Year 2, Semester 1</b>	Core courses	GENC 617, 619	6 credits
	Genetic Counselling Practicum	GENC 610	256 hours (8hours a day for 2days a week for 16 weeks)
	Dissertation	GENC 620	2 days a week
<b>Year 2, Semester1 Vacation</b>	Inter-Semester Clinical Attachment	GENC 600	160 hours (8hours a day for 4 weeks)

<b>Year 2, Semester 2</b>	Core courses	GENC 624, 626	6 credits
	Genetic Counselling Practicum	GENC 610	128 hours (8hours a day/once a week for 16 weeks)
	Dissertation	GENC 620	2 days a week
	Seminar II	GENC 628	3 credits
<b>Year 2, Semester2 Vacation</b>	Dissertation	GENC 620	Till submission on <b>31<sup>st</sup> July</b> of the second academic year

#### F. Course List and Credits

#### YEAR 1

##### Semester 1: Core Courses

<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>CREDIT</b>
GENC601	Human genetics I	3
GENC603	Clinical genetic testing	3
GENC605	Counselling skills and communication	3
GENC607	ELSI in genetic counselling	3

##### Semester 1: Electives (Students are required to take between 2 to 5 credits in semester 1)

<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>CREDIT</b>
GENC609	Fundamentals of anatomy and physiology	3
GENC611	Introduction to clinical health psychology	3
GENC613	Genetics of blood disorders	2
GENC615	Psychiatric and behavioural genetics	2

*Note: GENC609 and GENC611 are compulsory electives for students from social science backgrounds and biological/biomedical science backgrounds respectively.*

**Semester 2: Core Courses**

<i><b>COURSE CODE</b></i>	<i><b>COURSE TITLE</b></i>	<i><b>CREDIT</b></i>
GENC602	Human genetics II	3
GENC604	Genetic counselling in practice	3
GENC606	Professional development and practice	3
GENC608	Bioinformatics and Research methods	3
GENC612	Seminar I	3

**Semester 2: Electives (Students are required to take between 2 to 4 credits in semester 2)**

<i><b>COURSE CODE</b></i>	<i><b>COURSE TITLE</b></i>	<i><b>CREDIT</b></i>
GENC614	Population genetics	2
GENC616	Disability and rehabilitation	2
GENC618	Psychology of survivorship	2
GENC622	Psychology of predictive testing	2

**YEAR 2****Semester 1: Core Courses**

<i><b>COURSE CODE</b></i>	<i><b>COURSE TITLE</b></i>	<i><b>CREDIT</b></i>
GENC617	Cancer genetics	3
GENC619	New born screening	3

**Semester 2: Core Courses**

<i><b>COURSE CODE</b></i>	<i><b>COURSE TITLE</b></i>	<i><b>CREDIT</b></i>
GENC 624	Genetics education	3
GENC 626	Special topics in genetic counselling	3
GENC 610	Genetic counselling practicum	9
GENC 620	Dissertation	12
GENC 628	Seminar II	3

**G. Course Descriptions****GENC 601 Human Genetics I****Aim**

The course is designed to prepare students to provide accurate explanations of human inherited and acquired disorders.

**Objective**

To provide students with an understanding of the fundamental principles of genetics and associated processes including physiological, developmental, and biochemical processes that influence disease conditions and risks.

**Content**

The course will cover topics including units of heredity, gene structure and genome organization and function, Mendelian and non-Mendelian inheritance, population and quantitative genetics, the basis of human variation and disease susceptibility, family history and pedigree drawing, the role and mechanism of chromosomal aberration in human disease, and basic principles of biochemical genetics, physiology, embryology, and epidemiology.

**GENC 602 Human Genetics II****Aim**

To build on the introductory concepts in Human Genetics I, focusing on the role of genetics and genomics in human development, illness prevention, and health promotion.

**Objective**

Enable students accurately communicate information regarding the natural history, risks, diagnosis, prognosis, prediction, prevention, and care of common hereditary conditions.

**Content**

This course will introduce students to normal/abnormal human development, genetic mutation and variation and their impact on human diversity and health, developmental genetics, genetics of common inherited and acquired disorders (neural tube defects, deafness, neurodegenerative, neuromuscular, connective tissue, metabolic, mitochondrial, and ophthalmologic disorders, haemoglobinopathies, cardiomyopathies, cancers, and mental disorders), and personalized genomic medicine (surgery, pharmacology, nutrition, and psychotherapy).

**GENC 603 Clinical Genetic Testing****Aim**

This course is intended to provide students with a clear understanding of the requirements, procedures, benefits, and risks involved in testing for a variety of genetic conditions.

**Objective**

Introduce students to the theories and processes of genetic testing, which concerns laboratory analysis of genetic material to aid in the diagnosis of diseases.

**Content**

The course will address topics including principles of genetic testing; genetic testing needs assessment; family history collection; prenatal, paediatric, and adult screening; preimplantation, presymptomatic, predictive, diagnostic, and carrier testing for investigating rare disorders. The course will also focus on assessing and interpreting genetic test results, informed consent for genetic testing, risk calculation, genetic testing resources in Ghana, Africa, and worldwide.

**GENC 604 Genetic Counselling in Practice****Aim**

Provide students with an understanding of the purpose and techniques of genetic counselling.

**Objective**

Present current genetic counselling cases, providing students an opportunity to apply their knowledge of genetics, genetic testing and research, and counselling and communication principles to assessing, counselling, and appropriately intervening in the needs of clients.

**Content**

It covers patient care and education (assessing client's understanding, providing medical/genetics education, providing psychoeducation), reflective practice (self-awareness, assessing strengths, growth areas, conflicts of interest), case management (preparation, agenda, psychosocial assessment, history taking and pedigree drawing, genetic risk assessment and investigations, results interpretation and communication, counselling, intervention, follow-up support), referrals, report/letter writing and records keeping, breaking bad news, coping with grief and loss.

**GENC 605 Counselling Skills and Communication****Aim**

To prepare students to apply communication and counselling skills to effectively address genetic counselling needs of clients of diverse backgrounds.

**Objective**

To provide a solid foundation in the theories, principles, and practical techniques of interviewing, counselling and communication.

**Content**

This course will introduce students to the theories of communication and counselling; interviewing skills, risk communication, and critical thinking skills; crisis intervention; counselling about genetics and psychotherapy; tailoring information and support to clients'

unique needs; psychological responses of clients; and the psychological reactions and emotional labour of genetic counsellors.

### **GENC 606 Professional Development and Practice**

#### **Aim**

Provide students with an understanding of the current and progressive requirements of the genetic counselling profession.

#### **Objective**

Stimulate students' awareness of the code of practice for genetic counsellors, the advances in human genetic science, technology, and practice, and their professional responsibility to grow their competencies in accordance with current regulatory standards of practice in the field.

#### **Content**

The course will cover topics on the scope and objectives of the profession; standards and requirements of national and international regulatory bodies (e.g., Ghana Psychology Council, Health Professions Council of South Africa); licensure requirements; continuous professional education; specializations in genetic counselling; genetic counselling roles/models (counselling, teaching, research, laboratory, consultancy, public education, advocacy), role transition and decision making; reflection as a tool for professional development; drivers of professional stagnation; and multidisciplinary collaboration.

### **GENC 607 Ethical, Legal, and Social Implications in Genetic Counselling**

#### **Aim**

The aim of the Ethical, Legal, and Social Implications (ELSI) in genetic counselling course is to provide a rigorous theoretical grounding for students to act in accordance with the values, ethical, social, and legal principles of the profession.

#### **Objective**

To stress the importance of ethical and professional conduct in genetic counselling, while reviewing procedures for obtaining informed consent and identifying, discussing, and managing ethical, moral, and legal dilemmas that may arise in practice with different types of clients.

#### **Content**

Course content covers ethical and legal issues in genetic counselling; Code of Conduct for Genetic Counsellors; values of genetic counsellors including respect, empathy, commitment, autonomy, honesty, diversity, cultural competence/sensitivity, and confidentiality; ethical

implications of prenatal, paediatric, and adult predictive and diagnostic screening; cultural values and dimensions of health in Ghana; reproduction technology; genetic technology and bioethics; and language barriers and legal implications.

### **GENC 608 Bioinformatics and Research Methods**

#### **Aim**

To prepare students to identify, systematically study, present on, and disseminate pertinent researchable problems confronting genetic counselling services.

#### **Objective**

To equip students with advanced knowledge and skills regarding the research process, and the theories, types, methods, and ethics in research.

#### **Content**

Topics include types of research, the scientific process, research philosophies, methodology, and methods, critical literature review, research software tools, institutional requirements for research, ethics in scientific research, culture and human genetics research, academic/scientific research writing, evaluating research report, and disseminating research report.

### **GENC 609 Fundamentals of Anatomy and Physiology**

#### **Aim**

To expose students to the structure and function of the human body and the relationship between anatomy and physiology.

#### **Objective**

To provide an in-depth understanding of the levels of organization in humans, the components and function of all body systems, and the inter-system interactions that help to maintain a stable internal environment.

#### **Content**

This course will address topics including the organization of the human body; homeostasis and regulation; and the function of various body systems such as the circulatory and respiratory systems; skeletal, muscular, and integumentary systems; reproductive systems; immune system and disease; digestive and excretory systems; and the nervous and endocrine systems.

## **GEN 610 Genetic Counselling Practicum**

### **Aim**

The genetic counselling practicum integrates clinical, specialist, and laboratory rotations as well as community experiences to provide students with an understanding of how to apply genetic counselling principles to genetic conditions in different settings.

### **Objective**

Enable students consolidate their knowledge of basic human genetics, psychology, counselling, communication, and professional practice in healthcare so that it can be applied to patient, family, and population problems.

### **Content**

Students actively participate in observing, interviewing, testing, counselling, and supporting patients, individuals, and families. They participate in multidisciplinary case management discussions, review literature on genetic conditions, collect data, write case reports and referral letters, go on community outreach programmes, and interact with support groups for various genetic conditions.

## **GENC 611 Introduction to Clinical Health Psychology**

### **Aim**

To promote appreciation for the theory and practice of clinical health psychology, which focuses on the application of psychological principles, processes, and methods to the prevention of illness, modification and management of health behaviours, and promotion of health and healthcare.

### **Objective**

Educate students about theories, methods, and principles of clinical health psychology and application of these to promote effective genetic counselling and education.

### **Content**

This course covers a range of topics including biological and biopsychosocial models of health; mind-body interaction; health as an interaction of biopsychosocial factors; health behaviours and chronic illnesses; chronic pain; health seeking behaviours; health systems integration; behaviour change models; behaviour change techniques; medication adherence and self-management of chronic illnesses; cognitive-behaviour therapies.

## **GENC 612 Seminar I**

### **Aim**

To develop competencies regarding reflective practice, research, teaching, and public education of genetics and genetic counselling.

### **Objective**

This course will offer students a dynamic forum to apply technical knowledge about genetics to address clinical, research, and public education issues related to genetics.

### **Content**

Students will present and discuss concise case summaries from clinical observations, present a complete research proposal on a pertinent topic in the field (with support from research methods course leader and other assigned faculty), engage in and report on a community outreach programme; and actively participate in both student-led and expert-led discussions on a wide range of current topics in genetic counselling.

## **GENC 613 Genetics of Blood Disorders**

### **Aim**

To help students understand the genetics of the most common blood disorders and their health and illness implications in the global population and the sub-region in particular.

### **Objective**

To introduce students to the genetic characteristics, pathophysiology, and social implications of benign and malignant disorders of erythrocytes, leucocytes, thrombocytes, and the bone marrow.

### **Content**

The course covers topic including genetics of sickle cell disease (SCD) and  $\beta$ -Thalasseмии; gene-environment interaction in hereditary hemoglobinopathies; risk assessment of inherited blood disorders from family history and genetic tests results; ethical, legal, and social implications in genetic testing of inherited blood disorders, whole exome sequencing and gene therapy in hereditary hemoglobinopathies, and acquired mutations in haematologic malignancies.

## **GENC 614 Population Genetics**

### **Aim**

To promote students' understanding of population genetics so that they are able to provide population-level explanations of inherited and acquired disorders as well as effective public education and interventions regarding genetics and health issues.

### **Objective**

To introduce students to fundamental and applied concepts in population genetics.

### **Content**

The course involves topics on population genetics terminology; origins and evolutions of human populations; genetic diversity analysis; forces shaping genetic diversity; targeted population screening and interventions; prenatal diagnosis, assisted reproduction, and embryo selection; gene-environment interaction in population health and illness; legal and social implications of public health genetic interventions; role of personalized healthcare and genetic information in public health; genomics and the human genome project.

## **GENC 615 Psychiatric and Behavioural Genetics**

### **Aim**

To provide background and training regarding the fundamental principles and recent developments in behavioural genetics.

### **Objective**

To apprise students of the genetic bases of cognitions, emotions, and behaviours, and the implications for research, classification, care, and prevention of psychopathologies and health risk behaviours (e.g., schizophrenia, epilepsy, depression, autism, alcoholism, drug abuse).

### **Content**

The course covers topics including genetic variants in mental disorders; molecular genetics of intelligence, intellectual disability, social attitudes, personality disorders, psychiatric disorders, and eating and sleeping behaviours; genetics and classification of neuropsychopathology; gene-environment interaction; cognitive endophenotypes; guidelines and ethics in genetic testing for psychopathologies; gene-expression, whole-genome association studies, and precision therapy in psychiatry; pharmacogenetics, psychotherapy, gene therapy for hereditary mental disorders and risk behaviours.

## **GENC 616 Disability and Rehabilitation**

### **Aim**

The course is intended to stimulate students' understanding of concepts surrounding disability and rehabilitation, with the main emphasis on support.

### **Objective**

To develop knowledge and skills for assessing disability from genetic disorders and risks and for advising on appropriate types and sources of support

### **Content**

This course covers areas including sociocultural meanings of disability, behavioural impairment, independence, and quality of life; spectrum of disabilities, impairments, and rehabilitation needs; perceptions of genetic testing-disability correlation; genetic disability and rehabilitation needs assessment; genomic advances and implications for multidisciplinary care; assistive technologies and rehabilitation services for common and rare genetic disorders; integrating genetic counselling and rehabilitation services; genetic counselling and community-based rehabilitation services for multi-disabilities.

## **GENC 617 Cancer Genetics**

### **Aim**

To provide an overview of the genetics of cancers that often run in families.

### **Objective**

To expose students to the characteristics and phenotypes of tumour activator and suppressor genes and types of management for inherited and acquired cancers due to genetic mutations.

### **Content**

The course covers topics including how genes play a role in cancer; oncogenes and the hallmarks and pathology of cancer cells; molecular profiling of hard-to-treat cancers; hereditary cancer-related syndromes; gene-environment interaction in inherited cancers; tumour suppressor genes and the progression of cancer; genetic testing for cancer risk; cancer risk assessment from family history; advances in precision therapy from whole exome sequencing; cancer care and gene therapy for hereditary cancers.

## **GENC 618 Psychology of Survivorship**

### **Aim**

The psychology of survivorship course is aimed at providing students with essential knowledge of the psychology of survivor guilt and syndrome and the associated care and support implications.

### **Objective**

To introduce students to the range of psychological reactions to genetic risks and disorders and their clinical implications.

### **Content**

The course will address topics including adjusting to negative genetic tests; surviving genetic disorders and risks; clinical and behavioural implications of negative tests and survivorship; survivor guilt and syndrome symptoms such as anxiety and fear of recurrence, depression, posttraumatic stress disorder, loss of control, mastery, and self-esteem, uncertainty and vulnerability; diagnoses, treatment, and referral of survivor guilt and syndrome; internal and external support sources such as self-talk, psychotherapy, counselling, support groups, social and spiritual support; posttraumatic growth; coping with realistic risk of recurrence.

## **GENC 619 New Born Screening**

### **Aim**

To provide the background necessary to understand new born screening programmes in ways that enables the student to effectively review existing programmes and initiate new ones relevant to the cultural context in which they practice.

### **Objective**

To introduce students to the structure, processes, successes, and learnings from existing new born screening programmes in the region and across the globe.

### **Content**

The course will address topics on disorders for new born screening including mental and behavioural disorders; principles and methods of new born screening; new born screening programmes in America, Europe, and Africa; communicating abnormal results; false-positives and concerns in new born screening; long-term multidisciplinary case management for inherited disorders; new born screening implications for prevention of birth disorders, personalized care, and population-wide interventions (folic acid during pregnancy); starting a new born genetic screening programme and implications for medicine, genetic counselling, research, and policy.

## **GENC 620 Dissertation**

### **Aim**

The thesis project is aimed at equipping students with critical research skills that set the stage for further research and publications in their professional work as genetic counsellors.

### **Objective**

To train students to demonstrate practical skills in critical literature review; quality research data collection and analysis; scientific writing, presentation, and publication.

### **Content**

Students complete a thesis presented in the form of a scientific paper for submission to a named genetic counselling journal along with a research portfolio to document the process of project development and management.

## **GENC 622 Psychology of Predictive Testing**

### **Aim**

To provide students with an understanding of the psychological factors involved in testing for genetic predispositions.

**Objective**

To introduce students to the cognitive, emotional, and behavioural determinants and implications of predictive genetic testing.

**Content**

Topics include predictive validity and predictive genetic testing; predictive testing techniques; decision making for predictive genetic testing; psychological implications of presymptomatic, predisposition, prenatal, new born, carrier, and childhood-onset and adult-onset screening; assessing pre-test and post-test emotional states and sense of identity; psychological impact of false negative and false positive results; psychological assessment instruments and techniques; ethical, social, and legal implications of predictive testing.

**GENC 624 Genetics Education****Aim**

This course is aimed at preparing students to support the growing need for basic instruction in genetics and its clinical implications among other students, disciplines, and general populations.

**Objective**

To provide students with key teaching, assessment, and mentoring skills and the underlying theories necessary to assist with quality training in the field of genetic counselling.

**Content**

The course focuses on best practices in genetic counselling education including use of innovative teaching techniques and modalities; client-centred educational approaches; formative and summative assessments; setting learning goals; lesson plan development; communicating feedback; review and application of evidence-based genetics learning frameworks; professional and ethical conduct in genetic counselling education.

**GENC 626 Special Topics in Genetic Counselling****Aim**

To prepare students to be abreast with, and effectively handle a range of current issues that impact genetic counselling practices and ponder future implications.

**Objective**

To review and discuss key clinical, psychological, sociocultural, ethical, research, educational, economic, and political issues with important implications for current and future practice of genetic counselling.

**Content**

Topics include viral vectors; sibling donation; multiplex testing; ethics of sex selection and cloning; next generation sequencing; commercialized gene therapy; access to and use of genetic databases; informed consent and nondirectiveness; dilemmas of predictive testing and euthanasia; sociocultural and religious differences in genetic counselling; strategies for developing genetically literate societies.

**GENC 628 Seminar II****Aim**

To further develop competencies in genetics expertise, analysis, and reflective counselling; research and presentation; and teaching.

**Objective**

To present students a unique platform to lead four key reflective and professional presentations in relation to clinical case management, research, teaching, and issues of genetic counselling practice in Ghana.

**Content**

Students will first present their experience of the practicum and discuss the implications of their learnings for the UG genetic counselling curriculum and for genetic counselling practice research, teaching/learning, advocacy, and policy in Ghana. Second, students will present and discuss a detailed case report of the most interesting case they assessed and managed during the second-year clinical practicum. Third, students will select, teach, and assess a genetic topic of their choice in a mock class. And finally, student will present/defend a final report of their thesis.

**H. Teaching and Assessment Methods**

*An overall minimum score of 70% is required on all coursework, seminars, clinical practicum, and thesis to satisfy the requirements of the two-year professional MSc programme.*

**Course Work:** Teaching of the course work modules emphasises innovative approaches that allow students of diverse science backgrounds to first demonstrate their unique levels of competency in the course content via formative (non-scoring) assessments. In-class teaching/lecturing and activities are then focused on meeting students' unique and collective needs thereby maximizing learning outcomes (on cumulative assessments) for all students.

Innovative teaching methods adopted include the just-in-time teaching, problem-based learning, flipped classroom, and team-based learning techniques. Formative and cumulative assessment methods that encourage self-reflection and focused learning include quizzes, opinion/reflective essays, short scientific papers, role-plays with tutor-guided discussions, and student reviews of their peers' work and experiences. An end of semester exams for each coursework will be graded over 100% and will contribute 70% to the overall grade for the course. The cumulative assessments will also together, contribute 30% to the overall grade for the course.

**Clinical Practicum:** The semester and inter-semester clinical practicum sessions will focus on clinical, laboratory, and specialist medical training at a number of sites including the sickle cell clinic, haematology clinic, maternity and child health units, and the medical Out Patient Department clinics of the Korle Bu Teaching Hospital.

The first two sessions (i.e., Year-1 Semester-1 vacation and Year-1 Semester-2 vacation) focus on skills learning via observations only of clinical cases/virtual simulated sessions, recording of observations, and presentation of cases for tutor-led discussions.

The third session (Year-2 Semester 1) focuses on medical history taking, psychological assessment, and pedigree drawing.

The last two practicum sessions (Year-2 Semester 1 vacation and Year-2 Semester 2) respectively involve supervised counselling and independent counselling.

Twice during the second year (once a semester), students engage in a simulated patient session on genetic counselling and videotape the session for self-reflection, immediate feedback from the patient actor(s), and a review of their videotape with their tutors and then peers. A grade is received for transcribing the videotape, critically analysing the content and interactions, and writing a reflective report on the process.

Logged clinical cases are graded and there is skills assessment of role plays, case presentations, and simulated and real genetic counselling sessions using relevant sections (e.g., A and B) of the Skills Assessment Form (SAF) (see Appendix 1). Prior to the clinical practicum, all students sign a Confidentiality and Privacy Form (see Appendix 2). Students obtain grades for clinical practicum only after completion of the minimum clinical hours at the end of the second semester.

**Seminars:** Each student is required to lead a clinical case presentation and discussion independently and as part of an assigned group; teach a mock class on a genetic counselling topic of choice; present and lead a discussion of a report on a community outreach they organized; present on a research proposal for submission to the Ethical and Protocol Review Committee and the Ethics Committee for the Humanities; present on and defend a final thesis research report prepared for submission to a named genetic counselling journal; and attend all other expert-led presentations and discussions. All student-led activities are cumulatively assessed using the Skills Assessment Form. Attendance at expert-led presentations are also graded.

**Dissertation:** The Graduate Studies Committee in the Centre will advise and work with students in the identification of dissertation areas, formulation of dissertation titles, selection of dissertation supervisors with expertise/interest in the dissertation area, and timely submission of dissertations. It is the responsibility of students to keep a log of all supervisory meetings (see Appendix 3 for supervision log sheet). Students must attend a minimum of one data analysis and one report writing workshop in year two and write a brief report on their major learnings. They are also required to detail their research process in a portfolio (see Appendix 4 for the requirements of the portfolio). The final thesis report will be assessed using The Skills Assessment Form (Section D). The portfolio and workshop reports must earn a pass for students to fulfil the requirements of this course. Students obtain grades for thesis only after submission of all thesis requirements at the end of the second semester.

### I. Graduation Requirements

Students will be awarded an MSc in Genetic Counselling degree upon completion of all the programme requirements as follows:

- A minimum of 36 course work credits for core courses
- A minimum of 4 and a maximum of 9 course work credits for elective courses
- A minimum of 6 credits for seminar courses
- A minimum of 9 credits for practicum (a total of 1024 clinical hours)
- A minimum of 12 credits for dissertation (submission of a publishable paper)
- A total minimum of 67 credits and a maximum of 72 credits is required to graduate.
- Meet all other requirements outlined in the most current Handbook for Master's Degrees.

## 12. COURSE WORK GRADING SYSTEM

Below is the grading system used to assess the performance of students at UG

Grade	Numerical Marks	Interpretation	Grade Point
A	80 - 100	Excellent	4.00
B	70 - 79	Very Good	3.50
B+	60 - 69	Good	3.00
C	50 - 59	Pass	2.00
D	30 - 49	Fail	1.50
F	0 - 29	Fail	1.00
Z		Disqualification	
I		Incomplete with justification	
Y		Continuing	
X		Incomplete without justification	

### 13. FACULTY

Name	Rank	Qualification (Area of Expertise)	Institution	Status*	Course(s) taught	Email address
Solomon. F. Ofori-Acquah	Associate Professor	PhD (Molecular Genetics & Haematology)	UG	FT	GENC 601 GENC 602 GENC 603 GENC 613 GENC 619 GENC 626	sofori-acquah@ug.edu.gh
Frederick K. Addai	Associate Professor	PhD (Redox Biology Cytogenetics)	UG	FT	GENC 609	faddai@ug.edu
Annabella Osei-Tutu	Senior Lecturer	PhD (Counselling Psychology)	UG	FT	GENC 605 GENC 608 GENC 615 GENC 620	aopare-henaku@ug.edu.gh
Kojo Senah	Professor	PhD (Medical Anthropology, Ethics)	UG	FT	GENC 607	ksena@ug.edu.gh
Charles Antwi-Boisiako	Senior Lecturer	PhD (Vascular Physiology in SCD)	UG	FT	GENC 609	antwiboasiko@chs.edu.gh antwiboasiako@gmail.com
Lorna Renner	Associate Professor	MBChB (Oncology)	UG	FT	GENC 617	<a href="mailto:lornarenner@gmail.com">lornarenner@gmail.com</a> larenner@ug.edu.gh
Andrew A. Adjei	Professor	PhD (Cancer)	UG	FT	GENC 617	aaadjei@ug.edu.gh
K. W. Sagoe	Associate Professor	PhD (Molecular and Public Health Virology)	UG	FT	GENC 614	ksagoe@ug.edu.gh
Ebenezer Badoe	Associate Professor	PhD (Congenital Anomalies)	UG	FT	GENC 619 GENC 610	benbadoe@gmail.com evbadoe@ug.edu.gh

Samuel Oppong	Senior Lecturer	MBChB (Obstetrics and Gynaecology, Foetal Medicine)	UG	FT	GENC 619	wak72@yahoo.com
Joana Salifu Yendork	Lecturer	PhD (Child Development and Aging)	UG	FT	GENC 619	jyendork@ug.edu.gh
Yvonne Dei-Adomakoh	Senior Lecturer	MBChB (Oncology, SCD)	UG	FT	GENC 613 GENC 610 GENC 620	deiadam@yahoo.com yadei-adomakoh.ug.edu.gh
Samuel Antwi-Baffour	Senior Lecturer	PhD (Haematology)	UG	FT	GENC 617	s.antwi-baffour@chs.edu.gh
Angela Ofori-Atta	Associate Professor	PhD (Counselling Psychology)	UG	FT	GENC 606 GENC 615	angela.oforiatta@gmail.com
Samuel K. Kwofie	Senior Lecturer	PhD (Bioinformatics)	UG	FT	GENC 608 GENC 620	skkwofie@ug.edu.gh
Judith A. Osa-Larbi	Research Fellow	PhD (Health Psychology)	UG	FT	GENC 611 GENC 612 GENC 628	jolarbi@wagmc.org gjlsprings@yahoo.com
Margaret Amankwah-Poku	Senior Lecturer	PhD (Clinical/Health Psychology,)	UG	FT	GENC 616	mamankwah-poku@ug.edu.gh
Joseph Osafo	Associate Professor	PhD (Clinical Suicidology/ Mental Health)	UG	FT	GENC 618	josafo@ug.edu.gh
Dwomoa Adu	Senior Lecturer	MBChB (Kidney disease)	UG	FT	GENC 626	dwoms15@gmail.com
Sampene-Donkor	Associate Professor	PhD (Bacterial Genomics & Evolution)	UG	FT	GENC 626	esampene-donkor@chs.ug.edu.gh
William Kudzi	Senior Lecturer	PhD (Pharmacogenetics,	UG	FT	GENC 610 GENC 620 GENC 626	wkudzi@yahoo.com

		Molecular genetics)				
David Adjei	Senior Lecturer	PhD (Biostatistics)	UG	FT	GENC 608 GENC 610 GENC 620	dna@chs.edu.gh
Charles Brown	Senior Lecturer	PhD (Nutrigenomics)	UG	FT	GENC 626	cabrown@chs.edu.gh
Ellis Owusu-Dabo	Professor	MBChB (Molecular Epidemiology)	KNUST	PT	GENC 608	owusudabo@yahoo.com
Akwasi Ayanful	Senior Lecturer	PhD (Molecular Biology, Genetics, Cancer Epidemiology)	UCC	PT	GENC 613	aanyanf@gmail.com
Frank Ghartey	Senior Lecturer	PhD (Molecular Biology, Genetics, Cancer Epidemiology)	UCC	PT	GENC 614	frank.ghartey@ucc.edu.gh
Martin T. Morna	Senior Lecturer	MBChB (General Surgery)	UCC	PT	GENC 609	mmorna@ucc.edu.gh
David Burke	Professor	PhD (Human Genetics)	Uni. of Michigan	VF	GENC 601 GENC 602	dtburke@umich.edu
Amanda Kraus	Professor	MBBCh, PhD (Medical genetics)	WIT, South Africa	VF	GENC 602	Amanda.Krause@wits.ac.za
Stephen Menzel	Professor	PhD (Molecular Genetics)	KCL, London	VF	GENC 603	stephan.menzel@kcl.ac.uk
Claire Shovlin	Professor	MBChB (Molecular Medicine)	ICL, London	PT	GENC 603	c.shovlin@imperial.ac.uk
Tina Wessells	Senior Lecturer	PhD (Genetic Counselling)	UCT, South Africa	VF	GENC 605 GENC 624 GENC 626 GENC 610	tina.wessells@uct.ac.za

Charmaine Royal	Associate Professor	PhD (Genome Ethics)	Duke Univ, USA	VF	GENC 607 GENC 626	Charmaine.royal@duke.edu
Ambroise Wonkam	Professor	PhD (Medical Genetics, SCD)	UCT, South Africa	VF	GENC 613	ambroise.wonkam@uct.ac.za
Janey Youngblom	Senior Lecturer	PhD (Genetic Counselling)	Uni. of California	VF	GENC 604	jyoungblom1@csustan.edu
Shelley Macauley	Senior Lecturer	PhD (Genetic Counselling)	WIT, South Africa	VF	GENC 604 GENC 624 GENC 610	shelley.macauley@nhls.ac.za
Kofi Anie, MBE	Senior Lecturer	PhD (Clinical Psychology)	ICL, London	VF	GENC 604 GENC 605 GENC 606 GENC 611 GENC 616 GENC 622	Kofi.anie@nhls.net
Marsha Treadwell	Senior Lecturer	PhD (Clinical Psychology)	Uni. of California	VF	GENC 606 GENC 618 GENC 622	marsha.treadwell@ucsf.edu

\*FT=Full-Time; PT=Part-time; VF=Visiting Faculty

## 14. JOINT POSTGRADUATE PROGRAMMES

WAGMC has strong internal academic partnerships with several departments in UG offering postgraduate degree programmes broadly related to genetics. They include; departments in the School of Biomedical and Allied Health Sciences (SBAHS); basic medical sciences departments in the UG Medical School; the Department of Psychology and the Department of Biochemistry, Cell and Molecular Biology. Students can register for selected degree programmes offered by affiliate departments, and apply for WAGMC Fellowships to pursue research training in genetics.

### 14.1 School of Biomedical and Allied Health Sciences

The SBAHS is one of the new schools formed under the collegiate system of governance adopted by the UG. The school seeks to improve human health through the pursuit of knowledge and innovative scientific research. The school is committed to quality training of health professionals, outstanding research, excellent mentorship, effective professional service delivery and international collaboration and partnerships. The interdisciplinary faculty, is drawn from biomedical sciences and allied health professions. WAGMC is affiliated with the SBAHS departments of Dietetics and Medical Laboratory Sciences.

- Students with interest in nutrigenomics and other diet-related genetics can register in the MSc/PhD Dietetics programme
- Students with interest in medical/molecular genetics diagnosis can register in the MSc Laboratory Sciences degree

#### 14.2 University of Ghana Medical School

The School was established in 1964 to train first class doctors through quality teaching and learning, skills acquisition, research training and knowledge dissemination. Products of the school continue to stand tall, meeting international standards everywhere in the world. The school employs innovation and information technology to improve teaching and learning. Determined to encourage a culture of excellence the school continues to engage alumni, local and international students and faculty, and internal and external stakeholders. In an effort to align itself with the university's vision of attaining a world-class status, the Medical School continues its drive to intensify research activities among faculty, staff and students. Faculty from the various departments listed below teach and mentor students of WAGMC. Students can register in the MPhil programmes in the underlisted departments to pursue a biomedical genetics research in WAGMC.

- Anatomy
- Haematology
- Medical Biochemistry
- Pathology
- Medical Microbiology
- Physiology

#### 14.3 Psychology Department, School of Social Sciences

Established in 1967 the department has trained hundreds of students at both undergraduate and postgraduate levels. Psychology is concerned with the scientific study of human behaviour. Several fields including Medicine, Social Work and Public Health employ the expertise of psychologists in the delivery of care to the population. The Psychology department has one of the largest student population within the College of Humanities. It currently offers four Masters programmes including Clinical and Counselling Psychology. The department also contributes to the training and development of students and staff of several departments and centres within the university. Students with interest in studying behavioural genetics can register in the following programmes.

- MPhil in Counselling Psychology
- MPhil in Clinical Psychology
- PhD in Psychology

#### 14.4 Department of Biochemistry Cell and Molecular Biology

Established in 1962 originally as the Department of Biochemistry, this department has undergone several transformations in its course content and offerings, and is currently named the department of biochemistry, cell and molecular biology. Whilst biochemistry involves the

study of the chemical processes of the cell, cell biology deals with the structure and function of the cell and molecular biology focuses on the molecular basis of life processes. These three disciplines provide an understanding of the molecular mechanisms of biological processes. They are laboratory and research-based sciences that apply the concepts of Biology and Chemistry to the vastly different biological systems. Biochemistry in particular is central to all areas of the Life Sciences because it provides an essential foundation for research in the emerging Bioscience and Biotechnology-based disciplines. Students interested in pursuing research in genetics of infectious disease, cancer, diabetes, kidney diseases, haemoglobin disorders, and other non-communicable diseases can register for the following programmes offered by the department.

- MPhil in Biochemistry
- MPhil in Molecular Biology
- PhD in Biochemistry

## 15. EXTERNAL ACADEMIC PARTNERS

WAGMC faculty have extensive collaborations with faculty and researchers in other universities. Such collaborations offer opportunities for students to conduct part of their research, or to undertake clinical practicum overseas, in the institutions listed.

### National

University of Cape Coast (UCC)

Kwame Nkrumah University of Science and Technology (KNUST)

Ghana College of Physicians and Surgeons

Ghana College of Nursing and Midwifery

Ghana Psychology Council (GPC)

### International

University of Witwatersrand, South Africa

University of Cape Town, South Africa

Obafemi Awolowo University, Nigeria

University of Lagos, Nigeria

Bayero University, Nigeria

University of California Stanislaus, USA

University of California San Francisco, USA

Duke University, USA

University of Michigan, USA

Imperial College London, UK

Kings College London, UK

## 16. WAGMC COURSE DIRECTORS

Course Director	Course Title	Code	Email
Prof. Solomon Ofori-Acquah	Human genetics I	GENC 601	<a href="mailto:sofori-acquah@ug.edu.gh">sofori-acquah@ug.edu.gh</a>
	Human genetics II	GENC 602	
	Clinical genetic testing	GENC 603	
	New born screening	GENC 619	
Dr. Judith Osae-Larbi	Introduction to clinical health psychology	GENC 611	<a href="mailto:jolarbi@wagmc.org">jolarbi@wagmc.org</a> <a href="mailto:gjlsprings@yahoo.com">gjlsprings@yahoo.com</a>
	Seminar I	GENC 610	
	Seminar II	GENC 640	
	Long essay SEM 1 and SEM 2	GENC 630	
Dr. Annabella Osei-Tutu	Counselling skills and communication	GENC 605	<a href="mailto:aopare-henaku@ug.edu.gh">aopare-henaku@ug.edu.gh</a>
Angela Ofori-Atta	Psychiatric and behavioural genetics	GENC 615	<a href="mailto:angela.oforiatta@gmail.com">angela.oforiatta@gmail.com</a>
Dr. Lily Paemka	Cancer genetics	GENC 617	<a href="mailto:leepaemka@gmail.com">leepaemka@gmail.com</a>
Dr. Shelley Macaulay	Principles of genetic counselling	GENC 604	<a href="mailto:shelley.macaulay@nhls.ac.za">shelley.macaulay@nhls.ac.za</a>

Dr. Charles Antwi-Boasiako	Fundamentals of anatomy and physiology	GENC 609	<a href="mailto:antwiboasiako@gmail.com">antwiboasiako@gmail.com</a>
Dr. Yvonne Dei-Adomakoh	Genetics of blood disorders	GENC 613	<a href="mailto:deiadam@yahoo.com">deiadam@yahoo.com</a>
Dr. Tina Wessels	Genetic counselling education	GENC 622	<a href="mailto:tina.wessels@uct.ac.za">tina.wessels@uct.ac.za</a>
Dr. Kofi Anie	Disability and rehabilitation  Special topics in genetic counselling	GENC 614  GENC 624	<a href="mailto:Kofi.anie@nhs.net">Kofi.anie@nhs.net</a>
Prof. Samuel K. Kwofie	Bioinformatics and research methods	GENC 608	<a href="mailto:skkwofie@ug.edu.gh">skkwofie@ug.edu.gh</a>
Dr. Marsha Treadwell	Psychology of predictive testing	GENC 618	<a href="mailto:marsha.treadwell@ucsf.edu">marsha.treadwell@ucsf.edu</a>

## 17. HEADS OF AFFILIATE ACADEMIC UNITS

### School of Biomedical and Allied Health Sciences

Department	Head	Email
Dietetics	Dr. Matilda Asante	masante@ug.edu.gh or matildaasante@chs.edu.gh
Medical Laboratory Sciences	Dr. Samuel Antwi-Baffour	s.antwi-baffour@chs.edu.gh

### University of Ghana Medical School

Department	Head	Email
Anatomy	Dr. John Ahenkora	JAhenkorah@ug.edu.gh
Haematology	Dr. Yvonne Dei-Adomako	deiadom@yahoo.com
Pathology	Dr. Afua Abrahams	aodabrahams@ug.edu.gh
Medical Biochemistry	Dr. Bartholomew Dzudzor	bartdzudzor7@gmail.com
Medical Microbiology	Prof. Eric Sampane-Donkor	ESampane-Donkor@ug.edu.gh
Physiology	Rev. Dr. Charles Antwi-Boasiako	antwiboasiko@chs.edu.gh antwiboasiako@gmail.com

### School of Social Sciences

Department	Head	Email
Psychology	Prof. Joseph Osafo	josafo@ug.edu.gh

### School of Basic and Applied Sciences

Department	Head	Email
Biochemistry, Cell and Molecular Biology	Osborne Quaye	oquaye@ug.edu.gh