

# College of Medicine

## HISTORY

The Second Philippine Commission passed Act 1415 on December 1, 1905 establishing the Philippine Medical School, the forerunner of our College of Medicine. At that time, the country was besieged by major health problems, including cholera and smallpox and the Commission saw the need for more physicians to attend to the increasing health needs of Filipinos. The school opened on June 10, 1907 with only a handful of students and with very limited equipment loaned from various government institutions. It occupied the old structure of the School for the Deaf and Blind on Malecon Drive (now Bonifacio Drive) while its own building along Herran Street (now Pedro Gil Street) was being constructed. Dr. Paul Freer was the first dean of the medical school. The school transferred to Herran (now Pedro Gil St.) in 1910.

On September 1, 1910, the Philippine General Hospital (PGH) opened and began serving the public. The hospital was established not only to treat patients but also to provide clinical instruction for students of the college. The faculty of the medical school served as consultants of the PGH, and the PGH Director was concurrent Dean of the medical school.

On December 8, 1910, after five years of independent existence, the school was renamed the University of the Philippines College of Medicine and Surgery, thus having the distinction of antedating its mother university by three years. The name was shortened to the University of the Philippines College of Medicine (UPCM) in 1923.

The medical curriculum followed the pattern of standard American curricula consisting of a 5-year course with the addition of units in tropical medicine. In 1913, an optional sixth year termed "hospital year" was given to those planning to join the government medical service. Internship was made a prerequisite for graduation in 1923, occupying all of the fifth year and replacing clinical clerkship and the optional "hospital year".

The first members of the faculty were Americans but Filipinos later occupied more faculty positions. Included in the initial faculty roster were Filipino graduates of the University of Sto. Tomas, who formed the elite among local practitioners or who had studied in the United States or Europe. In 1916, Dr. Fernando Calderon became the first Filipino dean and the first Filipino director of the PGH. Eventually most of the faculty positions were occupied by Filipino professors.

The Second World War was a most significant stage in the history of the College of Medicine. The College was the only unit of the University of the Philippines (UP) to remain open and functional during the war despite bombings and sniper fire. There was also no disruption of services in the PGH. Dr. Antonio G. Sison was the College Dean at the time (1937-1951) and many refer to his deanship as "the Renaissance Period of Medicine in the Philippines" because of his efforts to improve medical education. The UP Medical Alumni Society (UPMAS) was founded in 1945, with Dr. Juan Salcedo Jr. as its first president. The Society has since supported the College in its many endeavors though generous donations and contributions of its members.

After the war, the College realized a fertile period for academic research and medical specialization. Dr. Agerico B.M. Sison (1951-1960) assumed the deanship in 1951 and was largely responsible for the academic and physical rehabilitation of the post war College of Medicine and PGH. In 1969, the medical curriculum was shortened from five to four years. and the M.D. degree was awarded after clerkship. Internship became a postgraduate year but remained a prerequisite for taking the medical board examinations to obtain licensure.

The seventies saw the faculty and alumni of the College of Medicine involved in significant roles in almost every aspect of the medical profession in the Philippines, with many holding top positions in the government. In 1977, UP Manila became the Health Sciences Center, an autonomous unit of the UP System, with Dean Florentino Herrera, Jr. (1967-1979) of the College of Medicine as the first Chancellor. The Center brought together under one umbrella, the College of Medicine and all other medical and health institutions of the University, including the PGH.

In the late 70's, the curriculum underwent several reappraisals and subsequent revisions. A seven-year program that integrated the premedical course with medicine proper was the end result of these curricular changes. This program, called the Integrated Liberal Arts and Medicine (INTARMED) Program, provided exposure to humanities and synchronization of the basic and clinical disciplines. High school graduates could directly enter the College of Medicine under this program which consisted of 2 years of preparatory medicine courses, 4 years of medicine proper and 1 year of internship. Graduation was held after internship. It was during the time of Dean Gloria T. Aragon (1979-1983), first woman dean of the UPCM and concurrent PGH Director, that this curriculum was approved by the UP Board of Regents.

Dean Alberto Romualdez (1984-1987), who became Secretary of Health in 1997-2001, was responsible for reinvigorating the Postgraduate Institute of Medicine. He spearheaded the establishment of the School for Health Sciences (SHS) in Palo, Leyte and instituted the Regionalization Program of the UPCM. These programs allowed deserving students from the community to pursue medicine and return to serve as health practitioners in their home towns.

During the term of Dean Marita V.T. Reyes (1988-1991) the UPCM proved to be the bastion of academic freedom. Rallying for social responsibility and accountability, Dr. Reyes also further enhanced the Regionalization Program of the UPCM.

The 1990s witnessed great changes in the UPCM. Dean Alfredo T. Ramirez (1991-1994) initiated the Dean's International Circle (DIC) and the Resource Development Office (RDO) to stimulate fund raising activities for the College of Medicine. The annual Grand Scientific Symposium (GSS), which showcases the expertise of the faculty members and alumni in the form of lectures and demonstrations in a postgraduate course, was also started and has become a major yearly fund-raising event of the college.

Renovations in the College continued under Dean Amelia R. Fernandez (1994-1997). These included the construction of the Multidisciplinary Laboratory (MDL) in the second floor of the Paz. Mendoza Hall. The Bioethics Committee was established and tasked to incorporate bioethical issues in the medical curriculum.

Dean Ramon L. Arcadio (1997-2003) introduced curricular changes to make medical education more learner-centered and community-oriented. New academic departments and units were established such as the Departments of Neurosciences and Emergency Medical Services, and the Medical Informatics and Community-oriented Medical Education Units. The UPCM submitted itself for accreditation by the Philippine Accrediting Association of Schools, Colleges and Universities (PAASCU) in 2003. In 2011, the UPCM was awarded the highest accreditation level of Level IV. Dean Arcadio initiated the planning and preparations for the organ system integrated (OSI) curriculum. The dual MD-PhD program was also conceptualized and approved by the UP BOR in his term.

Implementation of the OSI curriculum began in Academic Year 2004-2005 with Learning Unit III (the third year of the 7 year INTARMED program) during the term of Dean Cecilia V. Tomas (2003-2006). A student mentoring program was also initiated with the start of the OSI curriculum implementation to provide a mutually beneficial venue for faculty and student interaction, guidance and nurturing. In 2002 the Regionalization Program (RP) was strengthened with the BOR approval of contract signing by RP students of their intention to serve in the country. This was implemented in 2005. To augment faculty training, an Integrated Faculty Development Program (IFDP) was developed and approved by the College Council on April 4, 2006, and implemented in 2008. The ACTA MEDICA PHILIPPINA was re-launched as a peer-reviewed journal in 2006 and was chosen by the PCHRD/DOST as the country's National Health Science Journal in March 16, 2009.

As the UPCM reached her first 100 years, her dedication to excellence and leadership in medical education, research and service to the underserved remained steadfast, firm and uncompromising. On the Centennial year, Task Force *Pagsasabuhay* was formed by Dean Cecilia V. Tomas as an oversight and advocacy group that would help UPCM ensure that the mission-vision to "serve the underserved" is carried out by the UPCM graduates. Part of Task Force *Pagsasabuhay*'s recommendations included a return service contract for all UPCM graduates with the proper logistical support including a placement office that will ensure proper placement, a safe working environment and adequate financial support.

Dean Alberto B. Roxas (2006-2012) took over the reins as Dean in June 2006. In recognition of the need to determine long-term and short term goals for the college, the 6<sup>th</sup> Management Action Plan (MAP VI) included for the first time a 25 year master plan, STAR (Self sufficiency, Talent, Technology and Tolerance, Academic Excellence, and Responsiveness) Vision 2032. This will serve as a guide for the long term strategic directions of the college. During his term, the Return Service Committee formulated the implementing rules for the return service obligation (RSO) which was approved by the College Council by an overwhelming majority on March 11, 2008. It was subsequently approved by the University Council on June 25, 2008 and the Board of Regents' 1234<sup>th</sup> Meeting on July 31, 2008 and reaffirmed on its 1236<sup>th</sup> Meeting on September 29, 2008. Additional provisions were approved by the BOR in its meeting on July 2013. All students admitted to the UPCM starting in Academic Year 2009-2010 signed a return service obligation agreement that would require them to serve in the country within five years after their graduation.

The UPCM has yet to realize its long term goals towards self sufficiency with the hope of providing financial and research assistance to its constituents. As long as its vision is clear, and with a concerted effort from all sectors, the UPCM is certain that it will be able to attain its goals and remain THE Center of Excellence in Medical Education. The administration of the current Dean, Dr. Agnes D. Mejia (2012 - ) shall ensure that the College will remain the Center of Excellence with the twin operational thrusts of her administration – enhancement of internal organizational efficiency and the pursuit of financial stability programs.

## VISION

A community of scholars:

- Highly competent in the field of medicine with a heightened social consciousness;
- Imbued with moral, ethical and spiritual vigor;
- Dedicated to a life of learning;
- Committed to the development of Philippine society;
- Inspired by love, compassion and respect for the dignity of human life; and
- Anchored on the principles of Truth, Freedom, Justice, Love of Country and the Democratic Way of Life.

## MISSION

Guided by moral, ethical and spiritual values, we commit ourselves to excellence and leadership in community-oriented medical education, research and service, using the primary health care approach, intended especially for the underserved.

### *SUMMARY MISSION STATEMENT*

“Towards Leadership and Excellence in Community-Oriented Medical Education Directed to the Underserved”.

## THE INTARMED PROGRAM

INTARMED (INTEgrated Liberal Arts and MEDicine), is the seven-year program of the University of the Philippines College of Medicine (UPCM) which shortens the whole medical education by two years. It consists of two years of pre-medical courses (Learning Unit I – II), four years of regular medical studies (Learning Unit III – VI), and one year of clinical internship (Learning Unit VII). Students who enter Level I are considered direct entrants while students who enter Level III are considered lateral entrants.

## THE ORGAN SYSTEM INTEGRATED MEDICAL CURRICULUM

An integrated curriculum is an organization of the vertical and horizontal contents of the traditional medical curriculum into coherent learning units that bring students beyond the level of mere acquisition of facts and concepts to a higher plane of scientific understanding and fluency. Students are given more opportunities to think creatively and to act appropriately when dealing with medical problems.

Operationally, organ system integration refers to identifying clinically relevant concepts or skills that cut across the basic and clinical sciences, and uses the organ systems as foci for learning. Horizontal integration involves the unification of disciplines traditionally learned within a year level that should lead to a more comprehensive understanding of a particular cognitive area. Vertical integration, on the other hand, requires an interweaving of clinical skills and basic science knowledge starting from the early years so that learning of basic science concepts is continuous and reinforced in the clinical years. Curriculum integration can help the students cope with changes in knowledge and deal with outdated knowledge.

## THE MD-PHD (MOLECULAR MEDICINE) PROGRAM

The dual MD-PhD (Molecular Medicine) program of the UPCM aims to train aspiring physician-scientists for careers dedicated to the pursuit of basic and applied biomedical research towards the advancement of health from individual to global levels. The prescribed program of study comprises eight years: one year of graduate level coursework and research, five

years of medical education (LU III – VII of the INTARMED program) and two years for completion and defense of a PhD dissertation. Applicants are expected to clearly demonstrate their aptitude and motivation for advanced study in molecular medicine and related areas.

## OTHER GRADUATE PROGRAMS

The UPCM also offers a number of graduate programs in the following fields: Basic Medical Sciences (M), Biochemistry (PhD, MS and Diploma), Clinical Epidemiology (MS and Diploma), Genetic Counselling (MS), Orthopedics (M), Pharmacology (MS), and Physiology (MS and Diploma). An MS and Diploma in Clinical Medicine are also offered with the following tracks: Child Health, Family and Community Medicine, Obstetrics-Gynecology, Medical Oncology and Surgery. Multidisciplinary courses in Ethics (Diploma) and Medical Anthropology (M and MS) are offered in collaboration with UP Diliman, A Master in Clinical Audiology is jointly offered with the College of Allied Medical Professions. An MS in Health Informatics is jointly offered with the College of Arts and Sciences.

## ADMISSION POLICIES

The UPCM Admissions Committee determines the criteria of selection, and recommends and selects qualified students from applicants to the UPCM. Selection is based on intellectual and personal preparedness of the applicant. The MD-PhD Committee interviews all students who express interest in applying for the dual MD-PhD program and submits its recommendations to the UPCM Admissions Committee. Applications for the other graduate degree programs offered by the UPCM follow the admission policies of the National Graduate Office for the Health Sciences (NGOHS).

### *General Admission Policies*

1. Only applicants of good moral character shall be admitted.
2. Only applicants who have never been convicted of a crime shall be admitted.
3. Only applicants with good academic records shall be considered for admission.
4. Only applicants with the personality and attitudes considered suitable for a career in medicine shall be accepted.
5. The maximum number of students that can be accommodate without compromising teaching learning effectiveness shall be admitted.
6. Filipino citizens shall be given priority on admission.
7. An admitted student who fails to enrol may be admitted in any succeeding year only after he/she re-applies and is selected on competitive basis with the rest of the applicants for that year.
8. Qualified applicants who are not admitted may re-apply in any succeeding year.
9. Students who have been dropped from the rolls of the UPCM or other medical schools shall be denied admission or re-admission.

10. Medical students from other medical schools are NOT eligible for admission to any Learning Unit.
11. Other relevant University rules on admission which are not contradictory to the preceding rules shall apply.
12. The Admissions Committee and the UPCM reserve the right to refuse admissions to any applicant on the basis of standards and criteria set forth by the Committee as mandated by the proper University officials.

### ***The Admission Process***

Applicants may apply either as Direct or Lateral entrants to the Doctor of Medicine Program of the UP College of Medicine. Only lateral entrants may signify their interest in the MD-PhD program.

### **ADMISSION TO LEARNING UNIT (LU) I**

Selection Process:

1. High school graduates who have met the requirements for admissions to the University of the Philippines System are eligible for admission to LU I. Applications are coursed through the University of the Philippines System General Admission Process. The LU I INTARMED students are selected from the top 50 male and top 50 female college freshmen qualifiers (ranked according to University Predicted Grade (UPG) who indicated in the U.P. College Admission Test (UPCAT) application form their interest in INTARMED.
2. Only 40 applicants (20 males and 20 females) will be finally admitted into the program following a selection process which includes interviews.
3. All applicants are **REQUIRED** to sign a **RETURN SERVICE AGREEMENT (RSA)**.

### **ADMISSION TO LEARNING UNIT (LU) III**

The Medicine Proper is a five-year study of basic and clinical sciences, humanities and internship.

1. Only applicants who will have obtained their Baccalaureate degree (Bachelor in Science or Arts) by the end of the preceding academic year or earlier are eligible. Applicants who will obtain their Baccalaureate degree in the summer prior to the school year applied for are **NOT** eligible for admission.
2. The applicant must have a valid National Medical Admission Test (NMAT) score not lower than 90th percentile taken within the last two years prior to the application. The NMAT is administered by the Center for Educational Measurement which can be contacted at the address below:

24th Flr., Cityland Pasong Tamo Tower,  
2210 Chino Roces Ave., Makati City  
Tel. No. 813-3686, 813-3694-95  
Email: cem-inc.org.ph/nmat

3. ALL APPLICANTS ARE **REQUIRED** TO SIGN A RETURN SERVICE CONTRACT.

3.1. FOR ALL REGIONALIZATION PROGRAM (RP) & INDIGENOUS PEOPLE (IP) APPLICANTS: **ACCEPTANCE TO SERVE AND ASSUMPTION OF LIABILITY (ASAL) AGREEMENT**

3.2. FOR ALL OTHER APPLICANTS: **RETURN SERVICE AGREEMENT (RSA)**

4. The highest ranking applicants based on the above requirements will be further evaluated in an interview by a faculty panel.

### **ADMISSION TO THE MD-PhD (MOLECULAR MEDICINE) PROGRAM**

The most basic requirement for admission to the program is an outstanding scholastic record with a bachelor's or master's degree in a field relevant to health and biomedicine, preferably molecular biology and biotechnology or biochemistry. Applicants initially apply for admission into the MD program and indicate on their application forms their intent to apply for admission into the MD-PhD program. The MD-PhD Program Committee conducts an orientation and interview for qualified applicants. Recommendations are then forwarded to the Admissions Committee.

### **ADMISSION REQUIREMENTS**

A complete application, which must be submitted in a long brown envelope with the applicant's printed name (surname first) written in pencil only, includes the following:

1. A properly accomplished application form of the U.P. College of Medicine. Application forms will be made available upon cash payment of an application fee which is **NON-REFUNDABLE**.

- 1.1. P1,000 for Filipino applicants
- 1.2. \$200 for foreign applicants

*Note: The Application Form is valid only for the Academic Year applied for.*

2. ORIGINAL/OFFICIAL Transcript of Records for at least the first three and one half (3-1/2) years of the Baccalaureate Program.
3. Four copies of 2x2 pictures signed by the applicant on the front of the picture.
4. Certified true copy of NSO Birth Certificate. (*A photocopy is acceptable provided the original is shown for verification*).
5. Original Certificate of Naturalization for naturalized Filipino citizens. **ONLY** original Certificates of Naturalization and other documents issued by the Commission on Immigration and Deportation shall be acceptable. Applicants with **PENDING** naturalization papers and documents are **NOT** eligible for admission.

6. Latest True copy of Income Tax Returns (ITR) of both parents. (*A photocopy is acceptable provided the original is shown for verification*)
7. Original *plus* a photocopy of the NMAT result.
8. DOST Clearance for students who have availed of DOST scholarships in college.

Applicants who have obtained their Baccalaureate degree during the first semester or earlier are encouraged to submit their complete applications before the deadline to facilitate the processing of their applications.

### IMMUNIZATION

An immunization certificate and catch-up immunization will be required for enrolment.

The vaccines recommended for yet susceptible students are: MMR, dT, Varicella, Hepatitis B, Hepatitis A. Optional vaccines are: Rabies, Typhoid and Meningococcal vaccines.

Screening and immunization can be done by the UP Manila Health Service at minimal cost.

### PHILHEALTH MEMBERSHIP

All students will be required to enrol as members of PhilHealth.

*Address all other inquiries to:*

ADMISSIONS COMMITTEE  
UP College of Medicine  
547 Pedro Gil St., Ermita, Manila  
Telefax: 536-1368  
E-mail: admissions.upcm@gmail.com  
Website: <http://www.upcm.ph>

## INTERNATIONAL STUDENTS LINKAGES

***Guidelines for Application for an Elective Rotation at the UP College of Medicine***

### Rationale and Background

Through the years, the UP College of Medicine has endeavored to fulfill its vision/mission statement to be a leader and to excel in Community-Oriented Medical Education. At the same time, the College is also called upon by the Commission on Higher Education (CHED) *"to encourage and promote a borderless education for Filipino students to attain knowledge, skills and desirable attitudes that will make them globally competitive in medical education."*

Changes in higher education have encouraged participation in the development of a spirit of solidarity, based on networking, twinning programs and other forms of linkages. This is in keeping with a new vision of a Global University or a University for the world welcoming International Scholars and Students.

International exchanges, cooperative programs with community training and a wide array of administrative services are being laid out for the development of a distinct commitment, attitude and global awareness which transcend the entire higher education institute. Former CHED Commissioner Ester Garcia has said *"internationalization is no longer a choice but a setting stage for ensuring quality in higher education in the Philippines."*

On this note, the UP College of Medicine will encourage the crossing of educational and cultural barriers towards the development of a globally competitive curriculum and high quality students.

### Objective

To establish and promote international linkages, cooperation and networking among our medical students towards the development of globally competitive and socially conscious medical graduates.

### Procedures

#### 1. Application

- 1.1 International students are encouraged to apply for elective, clinical, community or research rotations in one or 2 departments offering an elective for a specific period of time, usually 4 to 8 weeks per department.
- 1.2 Application will be done through a written application form (IS-1) obtained from the Office of the Associate Dean for Academic Development (ADAD) stating the following:
  - 1) applicant's short bio-data,
  - 2) learning objectives and methods for achieving the objectives,
  - 3) Clinical Department to rotate in,
  - 4) period covered by such rotation.

***All International Undergraduate Students must pass through the ADAD office for proper registration and certification.***

- 1.3 The application is then forwarded to the Department/s concerned with a copy furnished to the Office of the PGH Director for processing. During this time, modifications and arrangements with the applicant will be done by the Department Coordinator to come up with a final learning contract agreeable to both parties, including duration and date of rotation. This will be signed by the applicant and agreed upon by his/her 2 supervisors: one from the Department (Department coordinator or Department Chair) of the UP College of Medicine and the other from a person of equal rank from his/her home institution.
- 1.4 An official Dean's letter of acceptance will then be sent to the applicant with instructions to report to the ADAD office and the Office of the PGH Director upon arrival for a formal registration and orientation.
- 1.5 An evaluation or grade given to the student by the Department must be submitted to the ADAD office for official documentation and certification.

1.6 The following are the Documents to be completed by the applicant prior to official acceptance.

- a. Application Form with Conforme (IS-1)
- b. Biodata or Curriculum Vitae
- c. Learning Contract duly approved by the Department Coordinator
- d. Recommendation Letter from Home Institution (Dean's or Registrar's)
- e. Immunization Certification (include Hepatitis A and B vaccines, Varicella, MMR, Tetanus toxoid)
- f. Results of Chest xray taken with the last 6 months prior to rotation and HIV test results
- g. A copy of a Health and Accident Insurance Certificate (with coverage applicable in the Philippines)
- h. A Waiver of Liability
- i. Scanned passport

## 2. Upon Arrival

- 2.1 The Student will report to the ADAD Office for a Welcome Orientation and will be given **Form 5** for his/her official registration and enrollment.
- 2.2 He/She will undergo a physical examination with the Health Service of PGH.
- 2.3 He/She proceeds to the Office of Student Affairs-International Students Relations at the 3<sup>rd</sup> Floor Student Center Building for processing of his/her temporary or provisional study permit. He/She should bring along his/her travel papers, passport, visa permit and other pertinent documents. A maximum of one semester (5 months) can be allowed for issuance of a temporary or provisional study permit.
- 2.4 He/She proceeds to the Registrar's Office for the assessment and payment of fees which will go to the Educational Development Fund. A US\$ 300 (summer elective) or US\$ 450 (semester elective) fee is collectible. In addition a tuition fee equivalent to the duration of a clinical rotation will be assessed and added accordingly. Approximately US\$ 110 per month (US\$ 50 tuition fee + US\$ 60 hospital fee) will be included. (Tuition and Hospital fees are subject to change).
- 2.5 The student is then officially registered and enrolled upon completion of the above procedures.
- 2.6 He/She proceeds to the Director's Office to sign a **waiver**.
- 2.7 After all of the above, he/she reports to the PGH Director before going to the designated Department Coordinator to present his **Form 5** to show he/she has been duly registered and has been officially enrolled.

## 3. At the End of the Elective Rotation

- 3.1 The Department Chair through the Department Coordinator will submit to the Dean's Office the grade or evaluation of the student.
- 3.2 The Dean through the College Secretary officially endorses and submits the grade to the student's institution and provides the certification for the clinical rotation.
- 3.3 The International Student should inform the PGH Director of the completion of his/her rotation.

## Housing and Accommodation

The College of Medicine does not have a student dormitory at the moment. Negotiations are underway between UP Manila and interested parties for the construction of housing facilities for students and even employees. However, there are private inns, hostels, apartelles and condominium units available around the campus with rates ranging from US\$ 150 to US\$ 400 per month. A list will be available upon request.

## Provisions for Elective Rotation of International Students

1. All International Undergraduate Students rotating in all Departments must be registered and duly approved by the Dean's Office. No certification will be issued unless this is accomplished.
2. Tuition fee, registration fees and other miscellaneous fees should be assessed and paid by the students at the Registrar's Office.
3. The certificate of completion of Elective Rotation will be signed by the Dean, the College Secretary, the PGH Director, and the Department Chair.
4. International Undergraduate Students are subject to the rules of Conduct and Discipline provided by the University Code and the Student Handbook.

# ACADEMIC RULES AND POLICIES

## 1. CLASSIFICATION OF STUDENTS

Undergraduate and graduate students are designated as regular or irregular.

Regular undergraduate students follow organized programs of study and comply with requirements which lead to the MD degree. They carry the full semester or annual load called for by the medical curriculum.

Regular graduate students are prospective candidates for the masters or doctoral degree. They may either be part-time or full-time students.

Irregular students are medical students who return from a leave of absence or fail in one or more subjects provided the subjects in which the students failed do not total more than 30% of the annual load in hours in Learning Unit III or in more than 25% of the annual total hours in each of Learning Unit IV, V, and VI.

## 2. ADVANCED PLACEMENT EXAMINATION (APE)

Newly admitted freshmen who qualify for and pass the prescribed examination in basic courses in INTARMED Curriculum as agreed upon by the Deans of the Colleges of Medicine and Arts and Sciences within one year of their first enrolment in the University shall be given credit for these subjects in their academic program provided that this privilege may not be given for more than six units in any one discipline.

Only those who qualified for admission to the University may apply to take these examinations usually scheduled two weeks before registration every semester.

Application forms and other information regarding advanced placement examination may be obtained from the College Secretary of the respective colleges giving these examinations.

### 3. P.E. REQUIREMENTS

Basic Physical Education is a prerequisite for graduation. All students should comply with this requirement during their freshman and sophomore years. Eight units of Physical Education including P.E.I are required of all undergraduate students.

### 4. PROFICIENCY EXAMINATION IN PHYSICAL EDUCATION (PEPE)

Proficiency examinations required in physical education courses are given to enable students to acquire advanced units in physical education which are credited towards fulfillment of the physical education requirements for graduation. Proficiency examinations may be taken in the following areas:

Team sports (basketball, volleyball);  
Individual sports (archery, bowling, golf, weightlifting)  
Dual sports (badminton, table tennis, tennis) Combative sports (arnis, judo, karate, wrestling)  
Dance (Hawaiian, Tahitian, modern dance, social dance)  
Aquatics (scuba diving, swimming)

The examination can be taken prior to registration each semester. Students may take proficiency examinations in one or more of the courses listed under individual sports. However, only one course is allowed in the other areas.

### 5. TRANSFERS

No student from other medical schools shall be considered for transfer to the seven year undergraduate curriculum of the College after Learning Unit I in the preparatory years and after Learning Unit III of the medical proper course.

### 6. ACADEMIC YEAR

The Academic Year shall be divided into 2 semesters of at least 16 weeks each, exclusive of registration and final examinations. A summer session of six weeks which follows the second semester shall be offered for Learning Unit I & II. Integrated Clinical Clerkship (Learning Unit V & VI) is a continuous 40-week program. Internship (Learning Unit VII) is a 52-week program commencing May 1 of each year.

For graduate students, summer sessions shall be offered only as per departmental decision.

### 7. COURSE NUMBERING

The U.P. System shall determine the course numbering.

### 8. CREDIT UNIT OR HOURS PER SEMESTER

The unit credit is the semester hour. Each unit of credit is at least 16 semester-hours of lecture instruction, 32 semester hours for laboratory and 24 semester hours for ward work. The unit credit shall be used whenever applicable, otherwise the number of hours per semester of each course shall be specified.

Approved number of hours or weeks shall be converted to number of UNITS based on University rules.

Lecture, SGD, Panel Discussion	- 1 hour = 1/16 unit
Laboratory, Independent Study	- 1 hour = 1/32 unit
Clinical rotations, ward work	- 1 hour = 1/24 unit
Average proportion of Lecture, SGD, Panel discussion versus Laboratory, Independent study	- 3:1
To pro-rate proportion of credit hour	- 1 hour = 1/20 unit (0.05)

\* Credit Load Equivalent in "Units" of the Doctor of Medicine Program

<i>Learning Unit III</i> <i>Subject</i>	<i>Credit Units</i>			
	<i>Hours</i>	<i>1st Sem</i>	<i>2nd Sem</i>	<i>Total</i>
HS201	40	2.0		2.0
OS 201	120	6.0		6.0
OS 203	104	5.0		5.0
OS 204	72	3.5		3.5
OS 205	144	7.0		7.0
IDC 211	32	0.75	0.75	1.5
IDC 202	64	1.5	1.5	3.0
OS 202	136	3.5	3.5	7.0
HD 201	130		6.5	6.5
HD 202	120		6.0	6.0
IDC 211.1	90		4.5	4.5
OS 206	142		7.0	7.0
<b>TOTAL</b>	<b>1194</b>	<b>29.25</b>	<b>29.75</b>	<b>59.00</b>
<i>Learning Unit IV</i> <i>Subject</i>	<i>Credit Units</i>			
	<i>Hours</i>	<i>1st Sem</i>	<i>2nd Sem</i>	<i>Total</i>
HS 202	108	5.5		5.5
THER 201	80	4.0		4.0
OS 213	216	11.0		11.0
OS 215	180	9.0		9.0
IDC 212	16	1.0		1.0
IDC 203	64	1.5	1.5	3.0
OS 216	72	1.75	1.75	3.5
OS 211	180		9.0	9.0
OS 212	180		9.0	9.0
OS 214	180		9.0	9.0
ELECTIVE	32		1.5	1.5
<b>TOTAL</b>	<b>1308</b>	<b>33.75</b>	<b>31.75</b>	<b>65.5</b>

**Learning Unit V**

<b>Subject</b>	<b>No. of Hours</b>	<b>Units</b>
OS 207	4 wks	6
THER 201	2 wks	3
ANESTH 250	1 wk	1.5
FCH 250.1	2 wks	3
FCH 250.2	2 wks	3
INTEG 250	1 wk	1.5
MED 250	3 wks	4.5
MUSC 250	2 wks	3
NEURO 250	2 wks	3
OB-GYN 250	4 wks	6
OPHTHA 250	1 wk	1.5
ORL 250	1 wk	1.5
PEDIA 250	4 wks	6
RADIO 250	2 wks	3
SURG 250	3 wks	4.5
IDC 204	1 wk	1.5
IDC 213	24 hrs	1.5
IDC 221	1 wk	1.5
IDC 222	1 wk	1.5
ELECTIVES	2 wks	3
<b>TOTAL</b>	<b>39 wks+24 hrs</b>	<b>60</b>

**Learning Unit VI**

<b>Subject</b>	<b>No. of Hours</b>	<b>Units</b>
ANESTH 251	2 wks	3
EM 251	2 wks	3
FCH 251	4 wks	6
MED 251	6 wks	9
NEURO 251	2 wks	3
OB-GYN 251	4 wks	6
OPHTHA 251	2 wks	3
ORL 251	2 wks	3
ORTHO 251	2 wks	3
PEDIA 251	4 wks	6
REHAB 251	2 wks	3
SURG 251	4 wks	6
IDC 205	64 hrs	4
ELECTIVES	4 wks	6
<b>TOTAL</b>	<b>40 wks+6 hrs</b>	<b>64</b>

**Learning Unit VII-TRACK A  
(Regular Rotation)**

<b>Subject</b>	<b>No. of Hours</b>	<b>Units</b>
ANESTH 260	1 wk	1.5
FCH 260	8 wks	12
MED 260	8 wks	12
NEUROSC 260	3 wks	4.5
OB-GYN 260	8 wks	12
OPHTHA 260	2 wks	3
ORL 260	2 wks	3
ORTHO 260	2 wks	3
PEDIA 260	8 wks	12
REHAB 260	2 wks	3
SURG 260	8 wks	12
<b>TOTAL</b>	<b>52 wks</b>	<b>72</b>

Student may choose from any of the 3 Internship Tracks:

**TRACK A – Regular Internship**

<b>Course</b>	<b>Period of Rotation</b>
Anesth 260: Internship in Anesthesiology	1 wk
FCH 260.1: Internship Training Program in Family Medicine	2 wks
FCH 260.2: Internship Training Program in Community Medicine	6 wks
Med 260: Internship in Medicine	8 wks
Neurosc 260: Internship in Neurology and Psychiatry	3 wks
Ob Gyn 260: Internship in Obstetrics and Gynecology	8 wks
Ophtha 260: Intern. in Ophthalmology	2 wks
ORL 260: Internship in Otorhinolaryngology	2 wks
Ortho 260: Internship in Orthopedics	2 wks
Pedia 260: Internship in Pediatrics	8 wks
Rehab 260: Internship in Rehabilitation Medicine	2 wks
Surg 260: Internship in Surgery	8 wks
<b>TOTAL</b>	<b>52 weeks</b>

**TRACK B – Core Internship + Electives**

<b>Course</b>	<b>Period of Rotation</b>
FCH 260.1: Internship Training Program in Family Medicine	2 wks
FCH 260.2: Internship Training Program in Community Medicine	6 wks
Med 260: Internship in Medicine	8 wks
Ob Gyn 260: Internship in Obstetrics and Gynecology	8 wks
Pedia 260: Internship in Pediatrics	8 wks
Surg 260: Internship in Surgery	8 wks
<b>Additional elective subjects</b>	<b>12 wks</b>
<b>TOTAL</b>	<b>52 weeks</b>

**TRACK C – (Straight Internship)**

*This is a 52- week rotation in a specialty of choice with a mandatory 8 weeks rotation in the community.*

SI 270.1: Straight Internship in Family and Community Medicine
SI 270.2: Straight Internship in Medicine
SI 270.3: Straight Internship in Otorhinolaryngology
SI 270.4: Straight Internship in Pediatrics
SI 270.5: Straight Internship in Radiology
SI 270.6: Straight Intern. in Rehabilitation Medicine
SI 270.7: Straight Internship in Surgery

## Guidelines for Admission to Tracks A, B, and C Learning Unit VII

- I. PGIs (Postgraduate Interns) are allowed to avail only of Track A (Regular Rotating) Internship Program of UP-PGH.

### **Track B (Core Internship + Electives) Internship Program**

- Only students from UP College of Medicine shall apply for Track B Internship program of UP-PGH.
- Only students who belong to the top 30% of the class with no grade lower than 2.75 in any subject will be eligible to apply.
- Track B applicants will be pre-screened according to computed General Weighted Average Grade (GWAG) and Comprehensive Examination (Compre) Scores from LU3 to LU5, after which interview score will be added for final ranking.
- A maximum of twenty (20) students will be accepted to the program.
- Students who will not qualify will automatically be included in the Track A (Regular Rotating) Internship.
- Aside from rotation of 8 weeks each in five major departments (DFCM, Medicine, Obstetrics and Gynecology, Pediatrics and Surgery), accepted intern will have to choose elective subjects of 12 weeks to complete the required 52 weeks internship. LU6 electives may be chosen provided that this has not been enrolled during clerkship.

### **Track C (Straight Internship)**

1. Only students from UPCM shall apply for Track C internship program of UP-PGH.
  2. A maximum of twenty (20) students will be accepted to the program.
  3. Only students who belong to the top 20% of the class with no grade lower than (2.25) in any subject will be eligible to apply.
  4. Track C applicants will be pre-screened according to computed General Weighted Average Grade (GWAG) and Comprehensive Examination (Compre) Scores from LU3 to LU5.
  5. The names of applicants who meet the pre-screening criteria for Track C will be sent to the concerned departments for final acceptance to the program.
  6. A maximum of twenty (20) students will be accepted to the program.
  7. Students who will not qualify will automatically be included in the Track A (Regular Rotating) Internship.
  8. All Track C medical interns are required to complete 8 weeks rotation in the Department of Family and Community Medicine.
- II. Once accepted to the program, shifting to other tracks will not be allowed.

*[ LU VII Committee meeting February 23, 2012]*

## 9. ACADEMIC LOAD

### Learning Unit I & II

Students in Learning Unit I and II are allowed a maximum academic load of 18 non-laboratory units or 22 units including laboratory per semester. However, graduating students may be permitted to carry heavier load in his last year. During the summer session, the normal load is 6 units. In justifiable cases, the Dean may allow a maximum of 9 units load during summer.

*[Article 34I, Chapter 49, University Code (1974)]*

### Learning Unit III - VII

Students shall be allowed the prescribed organized programs of study.

Irregular students shall not be allowed more than the regular load per semester.

### Graduate students

Graduate students employed on a full-time basis shall be allowed an academic load of not more than 10 units in any semester, whether informal courses or in theses, unless they have prior approval of the Dean upon the recommendation of the Department concerned, for a heavier load.

Candidates for graduation with honors shall have taken during each semester not less than 15 units of credit, or the normal load prescribed in the curriculum.

## 10. PREREQUISITES

Each learning unit is a prerequisite to the succeeding learning unit except for interdisciplinary courses upon the recommendation of the learning unit committee.

### LEARNING UNIT III For direct entrants:

All Learning Unit I and II subjects including NSTP and P.E. courses.

For lateral entrants: any baccalaureate degree.

LEARNING UNIT IV Must have passed all required subjects for Learning Unit III.

LEARNING UNIT V Must have passed all required subjects for Learning Unit IV.

LEARNING UNIT VI Must have passed all required subjects for Learning Unit V (Clerkship).

LEARNING UNIT VII Must have passed all required subjects for Learning Unit VI (Internship).

### **Waiver of pre-requisites**

Courses approved by the University Council as prerequisites to others shall not be waived, except in meritorious cases.

The Dean through the College Secretary and upon evaluation of the concerned Learning Unit Academic Committee shall decide the merits of the case.

No permission shall be granted unless the following are complied with:

1. Students who have previously enrolled and fully attended a course that is pre-requisite to another without having passed or earned credit for that pre-requisite courses, shall be allowed to enroll and attend in the course applied for.
2. Students shall formally apply for waiver of prerequisite. The application shall be accompanied by a certification from the Professor-in-charge of the pre-requisite course that the student had fully attended said course.
3. The application shall also be accompanied by a certification from the Dean of Students, UP Manila that the student's failure to pass or earn credit in the prerequisite course was not due to disciplinary action imposed upon the student.
4. Students who are granted permission under these rules shall be required to enroll in the prerequisite course simultaneously with the course to which the former is a prerequisite, or immediately in the next semester.

### 11. CHANGING OF CLASSES

All transfers to other classes in Learning Unit I, II, and VI shall be made only for valid reasons. No change of matriculation involving the taking of a new subject shall be allowed after 6% of regular class meetings have been held. UP Form 26 is filled out for a change of matriculation.

### 12. DROPPING OF COURSES

Students may, with the consent of the Department concerned and the Dean, drop a subject by filling out the prescribed UP Form 26 before three-fourths of the hours prescribed for the semester term have elapsed and not later.

In Learning Unit I and II, students shall not be allowed to drop more than 9 academic units per semester.

In Learning Unit III and IV, students shall not be allowed to drop more than 50% of the academic load per semester.

The request to drop a subject shall include the parent's or legal guardian's notation in writing.

The following steps shall be followed:

- A. Students shall consult with the Department concerned through the Professor-in-Charge and the concerned Learning Unit Academic Committee which shall make the necessary recommendation to the Dean.
- B. The Dean shall make the final decision on the request. Students who drop a course without the approval of the Dean shall have their registration privileges curtailed or entirely withdrawn. If a subject is dropped after the middle of the term, the Department concerned shall

indicate the date and class standing of the student at the time of dropping as either "passing" or "failing" solely for administrative guidance.

### 13. SUBSTITUTION OF COURSES

#### Learning Unit I and II

- A. Every substitution of subjects must be based on at least one of the following:
  1. When students are pursuing a curriculum that has been superseded by a new one and the substitution tends to bring the old curriculum in line with the new.
  2. When the required subject is not offered during the semester them students need it.
- B. Every petition for substitution:
  1. Must involve subjects within the same department, if possible; if not, the two subjects concerned must be allied to each other.
  2. Must be between subjects in which the subjects substituted carries the number of units equal to or greater than the units of the required subject.

All petitions for substitution must be submitted to the Office of the Dean concerned before 12% of the regular class meetings have been held.

No substitution shall be allowed for any subject prescribed in the curriculum in which the students have failed or received a grade of "5," except when, in the opinion of the department offering the prescribed subject, the proposed substitution covers substantially the same subject matter as the required subject.

### 14. CROSS-REGISTRATION - within the University

Students shall not be registered in any other college or school of the University without the written permission of the Dean of the College or School in which they are primarily enrolled. **UP Form 5-B** shall be accomplished for cross-registration within the University.

The total number of units of credit for which a student shall register in 2 or more Colleges or Schools in the University shall not exceed the maximum load allowable by the rules on academic load.

For graduate students, the College shall give no credit for any course taken by any of its students in any other University, college or school unless the taking of such course was expressly authorized by the Vice President for Academic Affairs, UP System upon the recommendation of the College concerned. The authorization shall be in writing to be recorded by the University Registrar or by representative and shall specifically describe the subjects authorized. *[Article 336, as amended by BOR on its 790<sup>th</sup> (Dec. 1969) and 861<sup>st</sup> (May 29, 1975) Meetings]*

## 15. ATTENDANCE

- A. Students shall be in actual attendance in the College within the first week of the opening of classes, except in special cases to be decided by the Dean upon recommendation of the Academic Department Chairman and/or corresponding Learning Unit Academic Committee.
- B. Any student, who for unavoidable cause/s is obliged to absent himself/herself from class, shall obtain an excuse slip from the College Secretary, to be presented to the Professor-in-Charge of the course concerned not later than the second session of the class after the date of the student's return.
- C. Excuses shall be for times missed only. All works covered by the class during the student's absence shall be made up to the satisfaction of the Professor-in-charge and within a reasonable time from the date of absence.
- D. When the number of hours lost by absence of students reaches 20% of the recitation, lecture, laboratory, or any other scheduled work in one subject for that semester, he/she shall either be dropped from the class or be required by the faculty/department concerned to make up his/her deficiencies by a longer attendance requirement.  
[Article 346, University Code (1974)]

All courses shall implement the University/College policies on attendance. The 20% rule will be applied to each module within a course. Specific policies on attendance may be set by each learning unit.

For Clerks, please refer to the Clerk's Manual.  
For Interns, please refer to the Interns' Manual.

- E. If the majority of the absences are excused, the students shall not be given a grade of "5" upon being thus dropped. Otherwise, he shall be given a grade of "5". Time lost by late enrolment shall be considered as time lost by absence.  
[Article 346, University Code (1974)]
- F. If a student is absent from the final examination and his/her class standing is passing, he/she shall be given a grade of "Incomplete". If his/her absence is justifiable, a special examination may be authorized by the Dean. If his/her class standing is failing, the student shall be given a "4" or "5" as the case may be.

## 16. LEAVE OF ABSENCE

- A. Formal leave of absence shall be sought by a written petition to the Dean through channels. The petition shall include the parent's or legal guardian's notation in writing, as well as statement regarding the reason/s for and the duration for the leave of absence. The student shall consult, in the following order:
  - a. the University guidance counsellor;
  - b. the College Faculty guidance counselor;
  - c. the Learning Unit Academic Committee Chair concerned;

The Learning Unit Academic Committee Chair shall make the recommendation to the Dean.

The Dean shall make the final decision on the request for leave of absence (LOA).

- B. In no way shall the leave of absence exceed one year. It may, however, be renewed for, at the most, one more year upon the discretion of the Dean. The aggregate leave of absence shall not exceed two years. Students who need to go on LOA beyond the allowable limit of two years shall apply for an honorable dismissal without prejudice to readmission. Students who fail to apply for an honorable dismissal beyond one year shall have their registration privileges permanently withdrawn. [Based on BOR action at its 1067<sup>th</sup> Meeting, July 7, 1993.]
- C. If a student withdraws after 3/4 of the semester has already elapsed, he/she shall be given a grade of "5" if his/her class standing at the time of withdrawal is below "3."
- D. No leave of absence shall be granted later than two weeks before the last day of classes during the semester. If the inability of the student to continue with his/her classes is due to illness or similar justifiable causes, his/her absence during the period shall be considered excused. In such cases, the student shall be required to apply for an excuse and shall present the excuse slip to the faculty members concerned.
- E. Enrolment following a leave of absence should follow existing rules on enrolment. Enrolment for whole year courses should be during the first semester only.
  1. For a student who has completed a course (module or clinical rotation)
    - a. If academic standing is "Passing" or "Satisfactory", student need not re-enroll the course. Final grade may be given after comprehensive examination has been taken.
    - b. If academic standing is "Fail" or "Unsatisfactory", student will re-enroll the said course.
  2. For a student who had not completed nor taken a course or clinical rotation, he/she will re-enroll the course.
  3. The student shall pay the tuition fees for the courses he/she will re-enroll.

### Example:

Learning Unit VI student applies for an LOA in the first semester and he has satisfactorily rotated in Medicine (4 weeks), Obstetrics and Gynecology (4 weeks) and Elective (4 weeks). Total of 12 weeks or 18 units.

Total # units for LU VI = 64 units (40 wks + 64 hrs)  
Bracket B- Php 1,000 x 64 units (whole year) = Php 64,000

Tuition fee upon return from LOA  
1<sup>st</sup> semester = 32,000 less 18,000 = Php 14,000  
2<sup>nd</sup> semester = Php 32,000

[Approved in the DAC meeting, August 18, 2011]

- F. Students who withdraw from the College without an approved formal written leave of absence shall have their registration privilege curtailed or entirely withdrawn.  
[Article 403, University Code (1974)]

## 17. GRADING SYSTEM

### A. Computation of grades for Intarmed student

#### 1. If the course credit is in units, the computation is:

$$\text{Grade} \times \text{Unit} = \text{Course grade}$$

$$\text{Sum of course grades} / \text{Sum of units} = \text{GWA}$$

#### 2. If the course credit is in hours, the computation is:

$$\text{Grade} \times \text{Actual hours} = \text{Course Grade}$$

$$\text{Sum of course grades} / \text{Sum of Actual Hours} = \text{GWA}$$

#### 3. If the course was initially in units, as in the first 2 years of Intarmed program, it is converted to hours using university rules.

- 1 lecture unit = 16 hours
- 1 laboratory unit = 32 hours

### B. Students are graded as follows:

1.0	Excellent
1.25	
1.5	Very Good
1.75	
2.0	Good
2.25	
2.5	Satisfactory
2.75	
3.0	Passing
4.0	Conditional Failure
5.0	Failing
INC	Incomplete

### C. In subjects without numerical grades, the following shall apply:

- for midterm grades - Satisfactory or Unsatisfactory, and
- for final grades - Passed, Failed, or Incomplete.

### D. As provided for by the University Code, no grade can be changed by any authority other than the academic department concerned.

### E. A grade of "4" means conditional failure. It shall be removed either by passing a re-examination or by successful repetition of the course. Upon enrollment in a subject, the students forfeit the right to remove or complete a grade of "4" or Incomplete. [*Revised University Code 1974*]

If the students pass the re-examination, a grade of "3" is given; if he/she fails, he/she is given a grade of "5". Only one re-examination shall be allowed which shall be taken within one academic year from the date the grade of "4" was received. If students do not take the removal examination within the prescribed time, he/she shall earn credit for the course by repeating and passing it.

### F. The grade of "Incomplete" (INC.) is given:

1. If students whose class standing throughout the semester is passing but the students fail to appear for the final examination due to illness or other valid reasons. If in the opinion of the Dean, upon recommendation of the department, the absence from the examination is justifiable, the students may be given an examination. In case the class standing is not passing and the students fail to take the final examination for no valid reason, a grade of "5" is given. However, if in the opinion of the Dean, upon recommendation of the Learning Unit Academic Committee and the department concerned, the absence from the examination is justifiable, the students may be given the final examination.
2. For work that is of passing quality but some parts of which are, for valid reasons, unfinished. The deficiency indicated by the grade "INC" shall be removed within one academic year by passing an examination or meeting all the requirements for the course, after which, the students shall be given a final grade based on his/her over-all performance.
3. The one-year academic period allowed for the removal of "4" or "INC" is interpreted as extending to the regular semestral period immediately following the one-year period. If students pass an examination for the removal of a "4", he/she shall be given a grade of "3"; if he/she fails, the final grade shall be "5". If students pass an examination or complete the requirements for the removal of an "INC", a final grade of "3" or better shall be given; if they fail, the final grade shall be "5."
4. Re-examination shall be permitted only for the purpose of removing a grade of "4". A student who has received a passing grade in a given course is not allowed re-examination for the purpose of improving his/her grade.

### G. General Evaluation Scheme for Clinical Preceptorials

The general evaluation scheme for each course will be determined by Faculty Course Coordinators. The scheme may include the following parameters:

- Written examinations
- Small group discussions
- Preceptorials
- Attendance

It is understood that the evaluation scheme should reflect the appropriate terminal competencies (knowledge, skills and attitudes) of each learning unit.

### H. Comprehensive Examination

Learning Unit III to VII Academic Committee will prepare and conduct comprehensive examinations at the end of the academic year.

- The score in the comprehensive examination will be 5-10% of the final grade in each and every course in the learning unit as shown below.

LUIII	5%
LUIV	5%
LUV	10%
LUVI	10%
LUVII	10%

- All students are required to take the comprehensive examinations in LUIII to LUVII.
- Students who do not take the comprehensive examination will be given a remedial comprehensive examination before enrollment for the next academic year. Until the student has taken said examination, he will receive a grade of “Incomplete” in all his enrolled courses where his class standing is “Passing”. He will receive a grade of “4” or “5” in the courses where his standing is “conditional failure” or “failure” respectively.
  - For students who had a **valid reason** for not taking the comprehensive examination: His grade in the remedial comprehensive examination will be incorporated to his pre-final grade in the different courses and his grade of “Incomplete” will be changed to his final grade. He will be promoted to the next LU if he passes all his courses.
  - For students who had **no valid reason** for not taking the comprehensive examination, his score in the remedial comprehensive examination will be incorporated to his pre-final grade only if his score is above the MPL for the examination. Otherwise, if his score is below the MPL, his grades of “Incomplete” remain, and he has to take the comprehensive examination at the end of the next academic year and the student concerned will be delayed for a year. [*College Circular, June 22, 2011*]

## 18. SCHEDULE OF REMOVAL OF GRADES OF “INCOMPLETE” OR “4”

- Examination for the removal of grades of “INC” or “4” shall be taken without fee:

During the regular examination period, if the subject is included in the schedule of examinations, and during the removal examination period, viz., the period covering ten days preceding the registration in each semester, during which case the examination shall be taken at the time it is scheduled.

- In no case shall the period for the removal of grades of “INC” or “4” extend beyond one academic year from the date the grade was received. The one year academic period allowed for the removal is interpreted as extending to the regular semestral period immediately following the one-year period.

## 19. RULES ON SCHOLASTIC STANDING

### A. Academic Scholarship

#### 1. University Scholars

Any undergraduate or graduate student who obtains at the end of the semester a weighted average of 1.45 or better, or 1.25 or better, respectively, is given this honorific scholarship. [*Article 381, University Code (1974)*]

#### 2. College Scholars

Any undergraduate or graduate student who, not being classed as University scholar, obtains at the end of the semester a weighted average of 1.75 or better, or 1.5 or better, respectively, is given this honorific scholarship. [*Article 382, University Code (1974)*]

### B. Scholastic Delinquency

#### 1. Learning Unit I and II

##### 1.1. Warning

Students who obtain final grades at the end of the semester below “3” in 25% to 49% of the total number of academic units for which they are registered shall receive a warning from the Dean to improve their work.

##### 1.2. Probation

Students who, at the end of the semester, obtain final grades below “3” in 50% to 75% of the total number of academic units in which they are registered shall be placed on probation for the succeeding semester and their load shall be limited to the extent to be determined by the Dean upon the recommendation of the Year Level Academic Committee.

Probation shall be removed by passing with grades of “3” or better in more than 50% of the units in which the students have final grades in the succeeding semesters.

##### 1.3. Dismissal

- Students who, at the end of the semester obtain final grades below “3” in more than 75% but less than 100% of the total number of academic units in which they are registered shall be dropped from the rolls of the College.
- Students on probation who again fail in 50% or more of the total number of units in which they were registered shall be dropped from the rolls of the College.
- Students who obtain a final grade of “5” after repeating a course wherein they obtained a grade of “4” or obtain a final grade of “5” for the second time in any course shall be dropped from the rolls of the College.

#### 2. Learning Unit III to VII

##### 2.1. Probation

Students in Learning Unit III who receive a final grade of “5” in 30% or less of their total annual load (in hours or credit units) or students in Learning Unit IV, V, and VI who obtained a final grade of “5” in 25% or less of their annual load (in hours or credit units) shall be allowed to continue under the following conditions:

- a. They shall repeat every subject in which they obtained a “5”.
- b. They shall be allowed to take advanced courses upon the recommendation of the corresponding Learning Unit Academic Committee provided all the pre-requisites for the advanced course/s have been satisfied.
- c. They shall satisfy all the requirements in which they failed within one academic year of their failure.
- d. A course shall not be repeated more than once in order to remove a “4” on the second enrolment. Only a removal examination shall be allowed to improve a grade of “4”. [*Article 389, University Code (1974)*]

## 2.2. Dismissal

- a. Students who receive a final grade of “5” in more than 30% of the total annual load in hours (or units) in Learning Unit III or in more than 25% of the total annual load in hours in Learning Unit IV, V, VI or VII shall be dropped from the rolls of the College.
- b. Students who obtain a final grade of “5” after repeating a course wherein they obtained a grade of “4” or obtain a final grade of “5” for the second time in any course shall be dropped from the rolls of the College.
- c. Students shall be required to withdraw from the College at any time whenever, in the opinion of the Learning Unit Academic Committee concerned, in accordance with set rules and regulations, and approved by the Dean, they are incompetent in their work or unfit to continue with their course. [*Approved by the Curriculum Committee Meeting on August 22, 2011*]

## C. Recording of Achievements

Annual recognition ceremonies are conducted to award students with academic and extracurricular achievements, such as leaders of local and international student organizations and awardees in local and international research conferences.

## D. Recording of Scholastic Delinquency

All academic delinquencies shall be permanently entered in the student’s records.

## 20. MAXIMUM RESIDENCE RULE

### *Learning Unit I and II*

Students shall finish the course requirements of Learning Unit I and Learning Unit II within a period of actual residence equivalent to 1 1/2 times the normal length (3 academic years) prescribed for the course; otherwise, they shall not be allowed to register further in the College.

### *Learning Unit III to VII*

Students shall finish the course requirements of Learning Unit III to Learning Unit VII within a period of actual residence equivalent to 1 1/2 times the normal length (7 1/2 academic years) prescribed for the course; otherwise, they shall not be allowed to register further in the College.

## **Graduate**

This rule shall not apply to graduate students governed by existing rules regarding a maximum period. Furthermore, account shall be taken of the provision of Article 243 of the Revised University Code which states that members of the faculty, officers and employees of the University have a privilege of enrolling in the University for not more than 6 units a semester at reduced rates of fees.

## 21. LEARNING UNIT ACADEMIC COMMITTEES

### **A. Learning Unit I and II Academic Committee**

One academic committee for Learning Unit I and II shall be formed jointly by the Dean of the College of Arts and Sciences and the Dean of the College of Medicine. The Committee shall be composed of faculty members from both Colleges and student representatives from Learning Unit I and Learning Unit II. The final number and composition shall be determined by both Deans.

### **B. Learning Unit III to VI Academic Committees**

There shall be a Learning Unit Academic Committee for each year (Learning Unit III-VI). The Academic Committees of Learning Unit III to VI shall be appointed by the Dean. Each committee shall be composed of the Professors-in-Charge of all courses in the year level. At least one student representative for each Academic Committee shall be nominated by the respective Class Presidents.

### **C. Learning Unit VII Academic Committee**

The Learning Unit VII Academic Committee is a special body that coordinates the performance of both UPCM Learning Unit VII students and postgraduate medical interns from other medical schools.

The Committee shall be formed jointly by the Dean of the College of Medicine and the Director of the Philippine General Hospital. It shall be composed of all Professors-in-Charge of all courses offered in Learning Unit VII. The following shall be ex-officio members of the committee: U.P. College of Medicine Associate Dean for Academic Development, PGH Assistant Director for Health Operations, U.P. College of Medicine College Secretary, PGH Coordinator for Training.

Each Committee shall elect a chair, co-chair and secretary.

The primary function of the Learning Unit Academic Committee shall be to monitor the performance of the medical students in the year level concerned. Where performance is unsatisfactory, the committee shall discuss the possible cause or causes and recommend remedial measures.

The Learning Unit Academic Committees shall work closely with the Curriculum Committee and the Associate Dean for Academic Development to ensure that the INTARMED Curriculum is successfully translated in the design and implementation of the various instructional programs. This means that the Committees shall look into the quality of

instruction in terms of course evaluation. The following items shall be therefore be assessed: course objectives, content, teaching methods, evaluation of students. However, the prerogative of choosing methods of instructions, evaluation and methods of grading shall belong to the individual academic department. The Committees shall also coordinate the scheduling of classes as well as examinations with the Office of the College Secretary.

Each Learning Unit Committee will serve as the Promotions Board and will submit to the Student Records Office the list of students who will be promoted to the next Learning Unit level. A list of students with grade deficiencies should also be included (i.e. INC, 4.0 or 5.0). These should be submitted two (2) weeks before the General Registration of the following semesters or earlier. This will allow the Student Records Office to identify students who will be promoted.

The Learning Unit Academic Committees shall meet at the start of the semester, at midterm and at the end of each semester, or more often if necessary.

## 22. GRADUATION REQUIREMENTS

### ***B.S. (Basic Medical Sciences) degree***

This degree shall be granted to all students who have satisfied the requirements of the first 4 years of the seven year undergraduate medical curriculum. Students join the graduation ceremony the following year.

### ***Doctor of Medicine***

In addition to the requirements for graduation of the University, the College of Medicine requires that one must have satisfied all the requirements for admission to the College and completed as a regularly matriculated medical student at least the last 5 years of medicine proper course of the seven-year undergraduate medical curriculum.

All students who completed the requirements for graduation are entitled to receive the degree of Doctor of Medicine.

### **Interns' completion requirements**

1. A Medical Intern has only 2 weeks after end of internship to complete their requirements in order to be included in the list of candidates for graduation to be submitted to the Office of the University Registrar for UP President/BOR approval.
2. Interns are allowed to make-up for their deficiencies before April 30 as long as the following conditions are present:
  - a. The intern's make-up does not interfere/ prejudice their present rotation.
  - b. The make-up is pre-arranged with the course coordinator of the department the interns have deficiency in.
3. Interns should accomplished interns make-up request form.  
*[Approved in the College Council meeting, August 31, 2010]*  
*[UPCM Memorandum, December 13, 2010]*

## 23. GRADUATION WITH HONORS

All grades obtained by the student in all subjects prescribed in the curriculum shall be included in the computation of the average for graduation with honors.

### **B.S. (Basic Medical Sciences) degree**

This degree is conferred to INTARMED students who have completed their Lu1 to LU4 courses. Graduation with honors is based on the computed averages following the usual computation.

### **Doctor of Medicine**

For direct entrants, computation of grades shall be for those obtained from Learning Units I-VI; for lateral entrants, computation shall be based on grades obtained from Learning Units III-VI. In the computation of the ranking, only the grades in Learning Units III-VI shall be considered for both direct and lateral entrants.

Students who complete their BS or MD with the following averages computed on the units or hours earned during the required years shall be graduated with honors:

Cum Laude	1.460 to 1.750
Magna Cum Laude	1.210 to 1.459
Summa Cum Laude	1.000 to 1.209

Candidates for graduation with honors must have taken during each semester not less than 15 units of credit or the normal load prescribed in the curriculum.

### **LU VII – Most Outstanding Medical Interns Awards Criteria for choosing the Most Outstanding Medical Intern**

#### 1. Track A and Track B

- a. Ten (10) Most Outstanding Medical Interns from both Track A and Track B internship program shall be chosen for their exemplary performance during the internship program.
- b. Final Score is 80% GWAG, 20% compre and 5 bonus points for research done or presented or published during internship year.
- c. Minimum computed grade should be equivalent to 1.75.
- d. Belongs to top 15 of at least 3 departments.
- e. Should not have received a “Guilty” verdict in disciplinary case filed against him/her in his/her internship year, if applicable.

#### 2. Track C

- a. Each track may recommend a Most Outstanding Straight Intern Award.
- b. Applicable criteria should be same as for Track A and B.
- c. 80% GWAG (to include grade in FCH 260), 20% compre and 5 bonus points for research done or presented or published in internship year.
- d. Minimum computed grade equivalent to 1.75.

- e. Should not have received a “Guilty” verdict in disciplinary case filed against him/her in his/her internship year, if applicable.

*[Approved in the DAC meeting, Oct. 29, 2009]*

*[Approved in the Training Coordination Committee meeting, UP-PGH, Nov. 19, 2009]*

#### 24. HONORABLE DISMISSAL

Students in good standing who desire to sever the University system shall present a written petition to this effect, signed by their parents or guardians, to the Dean, College of Medicine through the Office of the College Secretary. If the petition is granted, the students shall be given honorable dismissal. Without such petition and favorable action, no record of honorable dismissal shall be made.

Honorable dismissal is voluntary withdrawal from the University with the consent of the Dean. All indebtedness to the University must be settled before a statement of honorable dismissal can be issued. The statement of honorable dismissal indicates that the students withdrew in good standing as far as character and conduct are concerned. If the students have been dropped from the rolls on account of scholastic delinquency, a statement to that effect may be added to the honorable dismissal.

Students who leave the University for reason of suspension, dropping, or expulsion due to disciplinary action shall not be entitled to honorable dismissal. Should they be permitted to receive their transcripts of record or the certification of their academic status in the University, it shall contain a statement of the disciplinary action rendered against them.

#### 25. COMMENCEMENT EXERCISES

The College of Medicine graduation in May is the official graduation exercises. *[Based on BOR ruling at its 1266<sup>th</sup> meeting, Jan. 27, 2011]*

Attendance at general commencement exercises of UP Manila shall be required. Graduating students who cannot participate in the general commencement exercises shall inform the Dean, in writing, at least ten days before the commencement.

Graduating students who are absent during the general commencement exercises shall obtain their diplomas or certificates and transcript of records from the Office of the Registrar, UP Manila, provided that they comply with the above provisions (written notification of non-attendance with approval of the Dean) and upon presentation of payment of graduation fee and student’s clearance.

### THE MD-PhD (MOLECULAR MEDICINE) PROGRAM

#### Synopsis/Summary

The MD-PhD (Molecular Medicine) Program aims to train aspiring physician-scientists for careers dedicated to the advancement of health through biomedical research. The prescribed period of study is eight years, during which the MD-PhD student is expected to satisfy all the course requirements of the UPCM Organ System Integration (OSI) curriculum (i.e., the MD component of the Program) and also earn at least 44 credit units of graduate courses, including 16 credit units of core courses, 12 units of major courses, 4 units of cognates/electives and 12 credit units towards the PhD dissertation. Upon completing 32 credit units of the said graduate courses, including the 16 credit units of core courses, and subject to the required minimum general weighted average grade (GWAG) as determined by the National Graduate Office for the Health Sciences (NGOHS), the student qualifies to take the comprehensive examination, which must be passed in order to proceed with the proposal, approval and conduct of dissertation research. The student must subsequently pass an oral examination that constitutes the dissertation defense, before submitting the final dissertation manuscript in accordance with NGOHS regulations. The graduate courses are typically completed during the first year of enrollment in the Program. Dissertation work may formally commence after completing the required basic science courses of the MD Program, such that the clinical courses may be completed after the dissertation requirements are fulfilled.

#### Rationale

The conduct of biomedical research increasingly demands PhD-level training. Yet, pursuing a PhD separately from an MD entails many more years of training via two distinct programs completed in succession, and achieving coherent synergy between the two programs is challenging given their traditional differences in perspective. The MD-PhD (Molecular Medicine) Program thus aims to train aspiring physician-scientists for careers dedicated to the pursuit of basic and applied biomedical research with a strong translational character, towards the advancement of health from individual to global levels. Emphasis is placed on preparation to assume key leadership roles within the academic community as principal investigators and mentors to physician-scientists in training, so as to promote a self-sustaining process whereby new knowledge is continuously generated, applied and transmitted to meet emerging and anticipated health needs.

## Administration

The MD-PhD Program is administered by the office of the UPCM Associate Dean for Academic Development (ADAD) in collaboration with the MD-PhD Program Committee, which comprises core faculty members based in UPCM, the UP College of Public Health (CPH) and the UP Manila National Institutes of Health (NIH), particularly in the UPCM Departments of Biochemistry and Molecular Biology and of Pharmacology and Toxicology, the CPH Departments of Medical Microbiology and of Parasitology, and the NIH Institute of Human Genetics.

## Admission

The most basic admission requirement is an outstanding scholastic record with a baccalaureate or higher (e.g., master's, doctoral or other graduate) degree in a field relevant to health and biomedicine, preferably molecular biology and biotechnology or biochemistry. Applicants initially apply for admission into the Doctor of Medicine (MD) Program, with the option of explicitly indicating on their application forms their intent to apply for admission into the MD-PhD Program. From among the MD-PhD Program applicants who successfully qualify for admission into the MD Program, the MD-PhD Program Committee selects prospective candidates for admission to be interviewed for further screening on the basis of their submitted application documents, after which the final list of accepted MD-PhD Program applicants is determined in view of their aptitude and motivation for advanced study in molecular medicine and related areas in the health sciences.

Prospective applicants are encouraged to explore the possibility of admission into the MD-PhD Program as early as their interest warrants, even prior to filing an application for the MD Program, by contacting the faculty coordinator of the MD-PhD Program Committee through the office of the UPCM ADAD. However, such preliminary communication should be understood as serving the purpose of clarification for the applicants rather than providing any guarantee of admission into the Program.

The core courses & their respective credit units are as follows:

<u>Course Title</u>	<u>Units</u>
<b>Biostat 201:</b> Fundamentals of Biostatistics	3
<b>Epi 201:</b> Principles of Epidemiology	3
<b>Biochem 205:</b> Special Laboratory Techniques	3
<b>Biochem 221:</b> Nucleotides and Nucleic Acids	3
<b>Biochem 222:</b> Proteins, Lipids and Carbohydrates	3
<b>Biochem 297:</b> Seminar in Biochemistry	1

Biochemistry 205 (Special Laboratory Techniques) is typically taken over a period of two consecutive semesters, for one credit unit in the first semester and two more credit units in the second semester, whereas all the other core courses each run for one semester.

The list of approved additional graduate courses, which is expected to diversify as relevant new graduate courses are developed and offered, includes the following:

<u>Course Title</u>	<u>Units</u>
<b>Biochem 224:</b> Physical Biochemistry	3
<b>Biochem 240:</b> Advances in Biochemistry	3
<b>Biochem 310:</b> Biochemical Genetics	3
<b>Microbio 310:</b> Public Health Immunology	3
<b>Microbio 311:</b> Public Health Bacteriology	3
<b>Microbio 397.1:</b> Seminar in Public Health Microbiology I	1
<b>Para 307:</b> Immunologic, Biochemical and Molecular Parasitology	3
<b>Para 397.1:</b> Seminar in Parasitology I	1

Biochemistry 240 (Advances in Biochemistry) is typically taken over a period of two consecutive semesters, for one credit unit in the first semester and two more credit units in the second semester, whereas all the other additional graduate courses each run for one semester.

Successful completion of 32 units of graduate courses including all core courses is a prerequisite to take the comprehensive examination, which in turn must be passed as a prerequisite for the formal proposal of the dissertation research.

## PhD Dissertation

All MD-PhD students are strongly encouraged to actively engage in biomedical research at the earliest possible time in order to explore various possibilities for prospective PhD dissertation projects, either to accomplish work that could be further developed as dissertation research or to at least inform subsequent decisions on the selection of dissertation topics. However, proposed dissertation research must be formally presented and approved, by way of preparing a written dissertation proposal that is successfully defended in an oral presentation. Such approval is necessary for authorization to conduct dissertation research and to qualify for funding in support thereof. Dissertation research activities may be conducted at host institutions abroad in cases where the requisite infrastructure and expertise have yet to be established in the local setting, provided that the necessary arrangements (e.g., for inter-institutional agreements and funding support) are finalized in a timely manner.

## Scheduling of Courses and Dissertation Activities

All the graduate courses are typically completed during the first year of enrollment in the MD-PhD Program, with the OSI-curriculum course IDC 211 (Research Methods 1) completed during the first semester of the said year. IDC 211, which is a course under Learning Unit 3 (LU3) of the OSI curriculum, entails the preparation and defense of a research project proposal, which is to be implemented and successfully completed in fulfillment of course requirements for IDC 211.1 (Research Methods 1 Project Implementation, also part of LU3). Apart from IDC 211, all other LU3 courses (including IDC 211.1) are thus completed during the second year of

enrollment in the MD-PhD Program, thereby providing an extended period for the conduct of research activities between IDC 211 and IDC 211.1. (IDC 211 is counted among the OSI courses rather than the graduate courses and hence is excluded from the computation of graduate-course credit units, although it entails two lecture-class hours per week and is therefore comparable to a course worth two credit units as regards time requirements.)

Accordingly, the following graduate course credit units (with those for core courses marked by asterisks) are expected to be earned during the first semester of the first year:

<u>Course Title</u>	<u>Units</u>
<b>Biostat 201*</b> : Fundamentals of Biostatistics	3
<b>Epi 201*</b> : Principles of Epidemiology	3
<b>Biochem 205*</b> : Special Laboratory Techniques	1
<b>Biochem 221*</b> : Nucleotides and Nucleic Acids	3
<b>Biochem 222*</b> : Proteins, Lipids and Carbohydrates	3
<b>Biochem 224</b> : Physical Biochemistry	3
<b>Biochem 240</b> : Advances in Biochemistry	1

In addition, the following graduate-course credit units (with those for core courses marked by asterisks) are expected to be earned during the second semester of the first year:

<u>Course Title</u>	<u>Units</u>
<b>Biochem 205*</b> : Special Laboratory Techniques	2
<b>Biochem 297*</b> : Seminar in Biochemistry	1
<b>Biochem 310</b> : Biochemical Genetics	3
<b>Microbio 310</b> : Public Health Immunology	3
<b>Microbio 311</b> : Public Health Bacteriology	3
<b>Microbio 397.1</b> : Seminar in Public Health Microbiology I	1
<b>Para 307</b> : Immunologic, Biochemical and Molecular Parasitology	3
<b>Para 397.1</b> : Seminar in Parasitology I	1

All the required basic science courses of the OSI curriculum (i.e., courses under LU3 through LU4 up to and including Therapeutics 202 [Pharmaco-therapeutics] of early LU5) are expected to be successfully completed prior to the proposal of dissertation research. From among the elective courses under LU4, each MD-PhD student is strongly encouraged to select those that are deemed highly relevant to his or her prospective dissertation research, noting that the following LU4 electives should be considered for their general applicability:

1. **Medinfo 220**: Introduction to Medical Informatics
2. **Patho 220**: Introduction to Laboratory Medicine
3. **Pharma 221**: Pharmacology of Disease Processes
4. **Physio 296**: Directed Readings in Physiology

Every MD-PhD student should strive to initiate and complete his or her dissertation phase of training at the earliest possible time. The eight-year study period prescribed for the MD-PhD Program provides for a two-year window devoted exclusively to dissertation research (i.e., without concurrent enrollment in any course of the OSI curriculum), and this can be maximally utilized by judicious preparation ahead of time (e.g., preparation of research proposals and other arrangements even while still

enrolled in graduate and/or OSI courses). Upon completing the dissertation research, the student must subsequently pass an oral examination that constitutes the dissertation defense before submitting the final dissertation manuscript in accordance with NGOHS regulations in order to fulfill the dissertation requirements for the MD-PhD Program.

OSI-curriculum courses beyond OS 217 Systemic Diseases & Therapeutics 202 (Pharmacotherapeutics) in LU5 may be completed before or after the dissertation phase within time limits permitted by University regulations. From among the said courses, each MD-PhD student is strongly encouraged to choose those elective courses that are deemed highly relevant to his or her prospective dissertation research (or post-dissertation research interests if the dissertation phase is already complete), noting that the following electives should be considered for their possible relevance:

1. **Med 293.1**: Laboratory in Microbiology: Short Course (LU5)
2. **Pharma 254**: Ethnopharmacology (LU5)
3. **Physio 298**: Special Problems in Physiology (LU5)
4. **Biochem 291**: Research Elective in Biochemistry (LU6)
5. **Med 291**: Research Elective in Medicine (LU6)
6. **Para 291**: Research Elective in Parasitology (LU6)
7. **Patho 291**: Research Elective in Pathology (LU6)
8. **Pharma 291**: Research Elective in Pharmacology (LU6)
9. **Physio 291**: Research Elective in Physiology (LU6)
10. **Med 291**: Research Elective in Medicine (LU7 Track B)
11. **Med 293.3**: Laboratory in Microbiology (LU7 Track B)

*MD –PhD students may have the opportunity to conduct laboratory work in the basic sciences laboratories, the NIH laboratories or in institutions with a MOA with the UP College of Medicine.*

### Graduation Requirements

1. Completion of 2590 hours medicine proper subjects and 131 weeks of clinical rotation.
2. Completion of at least 32 units of PhD coursework with an overall weighted average of 1.75 or better and weighted average of 1.75 or better in required courses in the field of specialization and no grade of 5.00.
3. Pass a comprehensive examination aimed at testing the student's ability to integrate and apply knowledge. This shall also be a prerequisite prior to dissertation work.
4. Completion and passing of oral and written original dissertation that constitutes substantial contribution to knowledge in medicine and submission of 6 bound copies of dissertation. This constitutes 12 PHD units.
5. Residency of at least 2 years immediately prior to the awarding of the degree.

### Funding Support/Opportunities

The Philippine Council for Health Research and Development (PCHRD) of the Department of Science and Technology (DOST) awards full scholarships to support accepted MD-PhD students throughout the prescribed eight years of study, subject to the terms and conditions regarding academic performance

and return service as set forth in the DOST scholarship contract. Furthermore, individual MD-PhD students are strongly encouraged to explore and identify possibilities for additional research funding support, which may enable the conduct of research activities at host institutions abroad, on a case-by-case basis in coordination with prospective dissertation advisers.

All departments with a graduate program have a graduate program and admission committee who shall review the credentials of all applicants to their program. Unless otherwise indicated, these requirements apply for both local and foreign candidates.

## GRADUATE PROGRAMS

In line with its vision and mission of leadership and excellence in medical education, the College of Medicine has been offering a number of graduate programs in the fields of Biochemistry (PhD, and MS), Physiology (MS and Diploma), Pharmacology (MS), Clinical Epidemiology (MS and Diploma), Basic Medical Science (M), and Orthopedics (M). It also has Clinical Medicine (MS and Diploma) with the following tracks: Surgery, Child Health, Family and Community Medicine, Obstetrics-Gynecology and Medical Oncology.

Multidisciplinary programs are now also offered such as the MD-PhD (Molecular Medicine) with tracks in Biochemistry, Pharmacology and Physiology, Molecular Biology and those tracks in collaboration with the College of Public Health which

are Medical Microbiology and Immunology and Medical Parasitology; the Two-Track Residency/Fellowship Program in collaboration with the Philippine General Hospital and the Master in Clinical Audiology in collaboration with the College of Allied Medical Professions, Diploma in Bioethics and MS Bioethics in collaboration with the College of Social Science in Diliman and M Sc in Health Information with the Medical Informatics and Bioinformatics (in collaboration with the College of Arts and Sciences) track.

The College of Medicine, true to its vision of developing multipotential medical graduates, developed programs, which can enhance their roles as specialty clinicians, researchers, educators, managers, social mobilizers and advocates.

Degree Program	Training/ Specialty Board qualification	Others
1. Master of Science/ Diploma in Clinical Medicine	Accredited residency training or resident-in- training in PGH	<ul style="list-style-type: none"> <li>All core courses for MSc CM such as CE 204, CE 211, CE 212, HP 201, HP 221 and HP 261 taken by a student in another graduate program are automatically credited.</li> </ul>
Child Health	Pediatrics	<ul style="list-style-type: none"> <li>Computer literacy (Word processing)</li> <li>Financial capability to finish program</li> <li>Written endorsement from sending institution if applicable</li> </ul>
Family and Community Medicine	Family Medicine (not required for students from countries which has no Family Medicine Program yet) Fellow/diplomate in Family Medicine (Local)	<ul style="list-style-type: none"> <li>Currently trainor or with interest to be trainor in family medicine</li> <li>Current/prospective trainor in family and community medicine (Foreign)</li> <li>Written endorsement of the Chair, Department of Family Medicine and/or the President of National Family Medicine Organization (Foreign)</li> </ul>
Medical Oncology	Internal Medicine or equivalent (for foreign applicants) Medical Oncology Training in PGH Fellow / Diplomate of Philippine College of Physicians	<ul style="list-style-type: none"> <li>Pass written exam and oral interview</li> <li>Pass validating exam for those with postgraduate training in Medical Oncology outside PGH. This shall waive the courses in Medical Therapeutics in Medical Oncology (MO 230 and MO 231) and the Clinical Practices in Medical Oncology (MO 280, MO 281, MO 282, and MO 283)</li> <li>Must pass the written Licensure Board Exam of the Philippine College of Physicians prior to the final acceptance to the graduate program; or be a diplomate or fellow of good standing in the Philippine College of Physicians; or, for foreign applicants, the equivalent in their respective countries;</li> </ul>

Obstetrics Gynecology	Obstetrics Gynecology	<ul style="list-style-type: none"> <li>• Pass entrance exam</li> <li>• Weighted average of 2.0 or better in OB GYN</li> </ul>
Surgery	Surgery graduate; at least on last year of Surgical training or subspecialty training in Surgery (if non-PGH)	
2. Master of Orthopedics	Orthopedics training, minimum of 3 years	
3. Master of Clinical Audiology	BS (health science graduates with background in anatomy, physiology and basic clinical skills will be given priority for the initial offering)	<ul style="list-style-type: none"> <li>• Passed entrance interview</li> </ul>
4. Master/ Diploma of Clinical Epidemiology	A Bachelor degree or the equivalent degree or title from a recognized institution of higher learning	<ul style="list-style-type: none"> <li>• A high quality and integrity of intellect</li> </ul>
5. Master in Basic Medical Science (on hold)	MD degree obtained within the last 10 years Bachelor degree	<ul style="list-style-type: none"> <li>• Entrance Interview</li> <li>• Passed 5 units each of: Vertebrate Anatomy, Organic Chemistry and Physics (Bachelor degree holder)</li> </ul>
6. Master of Science/ Diploma in Biochemistry	MD, BS or its equivalent UPCM Medical students for MD-MSDDM (for Diploma course) Those who are currently enrolled in the LU3 of the UPCM	<ul style="list-style-type: none"> <li>• Courses in chemistry, biology, physics and mathematics are preferred for BS graduates.</li> </ul>
7. Master of Science in Pharmacology	BS or its equivalent; MD, DDM, DVM	<ul style="list-style-type: none"> <li>• Medical graduates from other medical schools shall be required to validate or enroll in the combined Pharma 201 and Pharma 202. Non-medical graduates shall be required to enroll in these courses.</li> <li>• Background in biology, chemistry, mathematics or physics for BS graduates are preferred.</li> </ul>
8. Master of Science/ Diploma in Physiology	BS or its equivalent,	<ul style="list-style-type: none"> <li>• Background in biology, chemistry, mathematics or physics are preferred.</li> </ul>
9. Master of Science in Health Informatics	Must be a Health Practitioner (MD, RN, DDM, RMT, etc.)	<ul style="list-style-type: none"> <li>• Basic training in Biochemistry or Molecular Biology. Otherwise, prospective students may opt to take the undergraduate equivalent (Chem 32 or Chem 40/ Biochem 14)</li> <li>• Passing mark and validating exam in Computer Programming and Data Structures.</li> <li>• Basic training in Epidemiology or Biostatistics or equivalent</li> </ul>
10. Diploma in Bioethics	—	<ul style="list-style-type: none"> <li>• Good scholastic record from university/ institution of higher learning. For non-UP graduate, GWA must be 2.00 or better (or its equivalent).</li> </ul>
11. Master in and Master of Science in Medical Anthropology	Must be Bachelor Degree( BA, BS) or a professional degree (e.g. MD)	<ul style="list-style-type: none"> <li>• Applicants will be evaluated based on their transcripts of records, work experience and interviews.</li> </ul>
12. Master of Science in Genetic Counseling	At least a graduate of baccalaureate degree program	

## MASTER OF SCIENCE IN CLINICAL MEDICINE

The Master of Science in Clinical Medicine started with the Surgery track back in 1990 with various pathways according to the various subspecialties.

Then in 1999, an additional three tracks were introduced and these are: Child Health, Family and Community Medicine and Obstetrics-Gynecology.

In 2002, the Medical Oncology Track was then offered.

The Master of Science in Clinical Medicine was originally conceptualized to be offered to clinicians in various specialties who are also faculty in their respective fields. This was a faculty development scheme to enhance their teaching skills.

### Track 1: Child Health

#### *Department of Pediatrics*

It is intended to run for 24 months, including thesis work. Candidates who have satisfactorily complied with the academic requirements of 28 units shall qualify for the Diploma. Diploma students who satisfactorily complete the thesis requirement (6 units) within the prescribed period of study shall be awarded the Master of Science degree.

#### Objectives

At the end of the course, the graduate student is expected to have:

1. Gained a broader knowledge base on the national health situation.
2. Exhibited skills in the following areas:
  - 2.1. Teaching
  - 2.2. Research (related to policy-making in child health)
  - 2.3. Administration
  - 2.4. Development of health programs
  - 2.5. Community leadership

Curricular Program Requirements	Units
Major	9
Core	16
Electives/Cognates	3
Thesis	6
<b>TOTAL</b>	<b>34</b>

The major courses and their corresponding electives are unique to each clinical department. Below are the major courses for each track.

### MAJOR

Course Title	Units
CH 240: Inherited Disorders and Community Genetics	1
CH 241: Newborn Care in Developing Countries	2
CH 242: Principles of Growth and Development	2
CH 243: Pediatric Nutrition	2
CH 244: Management of Pediatric Infectious Diseases in Developing Countries	1
CH 297: Seminars in Child Health	1

The core courses of the Master of Science in Clinical Medicine shall be taken by all tracks. These core courses are:

### CORE

Course Title	Units
CE 205: Clinical Statistics	5
CE 211: Fundamentals of Clinical Epidemiology	2
CE 212: Basic Clinical Research Methodology	2
HP 201: Psycho-philosophical Foundation of Learning and Teaching in the Health Sciences	2
HP 221: Instructional Design in Health Sciences Courses	3
HP 261: Organization & Management of Health Program	2

Electives are any of the following courses or those offered in the other programs of the College of Medicine. Cognates may be taken from other disciplines of the University.

### ELECTIVES

Course Title	Units
CH 250: Preventive Pediatrics and Anticipatory Care	1
CH 251: Environmental Pediatrics	1
CH 252: Care of the Adolescent	1
CH 253: Child Advocacy	1
CH 254: Pediatric Pharmacotherapeutics	1
CH 255: Mental Health of Children	1

**CH 300: Thesis** **6 units**

### Track 2: Family and Community Medicine

#### *Department of Family and Community Medicine*

Candidates who have satisfactorily complied with the academic requirements of 30 units, passed the comprehensive examination and has successfully completed the thesis requirement (6 units) within the prescribed period of study shall be awarded the Master of Science degree.

Those who opt not to pursue the Master of Science degree may be awarded a Diploma in Clinical Medicine – Family and Community Medicine upon completion of all academic requirements and subsequently passing the comprehensive examination.

## Objectives

At the end of the program, the graduate is expected to:

1. apply principles of Family Medicine in teaching, training and administration;
2. conduct and apply research output to medical science geared towards their areas of interest;
3. formulate educational programs in the special areas such as: Counseling, Hospice and Palliative Care, Quality Assurance, Family Wellness and Evidence-Based Practice in Family Medicine;
4. integrate biopsychosocial with clinical aspects of education and practice as a teacher, researcher, specialist or as an administrator or a manager; and
5. carry out responsibilities in organizing Family Medicine programs, research and service.

Curricular Program Requirements	Units
Major	8
Core	16
Electives/Cognates	6
Thesis	6
<b>TOTAL</b>	<b>36</b>

### MAJOR

Course Title	Units
FCM 260: Principles and Practice of Family Medicine	2
FCM 261: Family Wellness	2
FCM 262: Communication and Counselling Skills in Family Medicine	1
FCM 263: Hospice & Palliative Care	1
FCM 264: Evidence-Based Practice in Family Medicine	1
FCM 265: Quality Assurance in Family Medicine	1

Students may choose electives other than those offered by the department, as listed below, with prior approval of the department and adviser.

### ELECTIVES

Course Title	Units
FCM 271: Clinical Teaching in Family Medicine <i>Prerequisite: HP 221</i>	2
FCM 297: Seminars in Family Medicine	3
FCM 298: Special Studies in Integrative Medicine	2

**FCM 300: Thesis** **6 units**

### Track 3: Medical Oncology

#### Department of Medicine

The Master of Science in Clinical Medicine – Medical Oncology (MSMO) and the Master in Clinical Medicine – Medical Oncology (MMO) will create a learning environment intended to develop medical internists into medical oncology specialists as well as health managers with broader knowledge and extensive skills.

The graduates of these programs, aside from being clinicians, may have already become leaders, administrators, researchers, or educators while taking the program. But they will be effective, among other roles, as nodal movers in community-based Cancer Care Network, a network of NGO agencies, led by the Department of Health, to implement the Philippine Cancer Control nationwide. Likewise, the degree will facilitate their career movement in the current institution they are involved in.

## Objectives

It is expected that graduates of this program will be able to demonstrate in-depth knowledge, adequate skills, proper attitudes and values in:

1. diagnosis, medical treatment, prevention and control of neoplastic diseases;
2. research in cancer medicine, prevention and cancer control program;
3. community and tertiary level teaching of cancer medicine;
4. implementation of quality management and organization development/planning to achieve total quality care of cancer patients in the tertiary and community settings.

Curricular Program Requirements	MSMO (Units)	MMO (Units)
Major	13	13
Core	16	16
Electives/Cognates	2	5
Thesis	6	--
Comprehensive Exam	--	Pass
<b>TOTAL</b>	<b>37</b>	<b>34</b>

### MAJOR

Course Title	Units
MO 201: Molecular Biology and Pharmacology of Solid Tumors	2
MO 202: Bioethics and Value Formation in Cancer Care 2	2
MO 230: Medical Therapeutics of Solid Tumors I	2
MO 231: Medical Therapeutics of Solid Tumors 2	1
MO 250: Quality Management in Cancer Care	2
MO 280: Clinical Practice in Medical Oncology I	1
MO 281: Clinical Practice in Medical Oncology II	1
MO 282: Clinical Practice in Medical Oncology III	1
MO 283: Clinical Practice in Medical Oncology IV	1

### CORE

Course Title	Units
HP 201: Psycho-philosophical Foundation of Learning-Teaching in the Health Science	2
HP 221: Instructional Design in Health Science Courses	3
HP 261: Organization & Management of Health Programs	2
CE 211: Fundamentals of Clinical Epidemiology	2
CE 212: Basic Clinical Research Methodology	2
CE 205: Clinical Statistics	5

**ELECTIVES**

<i>Course Title</i>	<i>Units</i>
MO 203: Economics in Cancer and Control	2

**COGNATES**

<i>Course Title</i>	<i>Units</i>
HP 232: Test Construction and Analysis	2
CE 213: Critical Appraisal of the Medical Literature	1
CE 299: Social Science Research Methods in Health	2

**Thesis: MO 300** **6 units (For MSMO)**

**Track 4: Obstetrics – Gynecology****Department of Obstetrics-Gynecology**

The Master of Science in Clinical Medicine is designed to provide a Master's level training program in Obstetrics and Gynecology, specifically for graduates of clinical training to be faculty members knowledgeable and skilled in teaching, research and administration. The Diploma in Clinical Medicine is an alternative program that has similar requirements without a thesis requirement.

**Objectives**

Specifically, at the end of the course, the trainee will be able to:

- apply appropriate teaching techniques and methods in the various levels of training in Obstetrics and Gynecology, such as:
  - undergraduate and graduate programs
  - clinical programs
  - other post-graduate programs
- perform and supervise researches in the specialty that can be used in the improvement of clinical practice and biological science.
- evaluate and plan improvement in the organization and management of program in the specialty.
- contribute to the improvement of the clinical practice of the specialty through teaching.

<b>Curricular Program Requirements</b>	<b>Units</b>
Major	11
Core	16
Electives/Cognates	4
Thesis	6
<b>TOTAL</b>	<b>37</b>

**MAJOR**

<i>Course Title</i>	<i>Units</i>
OB GYN 220: Perspectives & Trends in Obstetrics and Gynecology	2
OB-GYN 299: Research in Obstetrics & Gynecology	3
OB Gyn 297.1: Seminars in Obstetrics	3
OB Gyn 297.2: Seminars in Gynecology	3

**ELECTIVES****4 units**

Electives may be taken from other graduate courses of the College of Medicine. Cognates may be taken from other disciplines outside the College of Medicine.

**Ob-Gyn 300: Thesis****6 units****Track 5: Surgery****Department of Surgery**

Candidates who have satisfactorily complied with the academic requirements of 28 units shall qualify to take the comprehensive examination. After passing the comprehensive examination, the graduate student can then work on his/her thesis. Upon successful defense and completion of the thesis requirement (6 units) within the prescribed period of study, the graduate shall be awarded the Master of Science in Clinical Medicine (\*).

\* *General Surgery, Neurologic Surgery, Urological Surgery, Thoracic and Cardiovascular Surgery, Colon and Rectal Surgery, Pediatric Surgery, Plastic and Reconstructive Surgery*

<b>Curricular Program Requirements</b>	<b>Units</b>
Major	26
Electives/Cognates	3
Thesis	6
<b>TOTAL</b>	<b>35</b>

**MAJOR**

<i>Course Title</i>	<i>Units</i>
Surg 298.1: Special Topics in Surgery I	1
Surg 298.2: Special Topics in Surgery II	2
Surg 298: Graduate Seminar I	1
Surg 299. 1: Graduate Seminar II	2
Surg 299.3: Research Seminar I	1
Surg 299.4: Research Seminar II	2
Surg 270.1: Special Topics in General Surgery I	1
Surg 270.2: Special Topics in General Surgery II	2
Surg 271.1: Special Topics in Colon and Rectal Surgery I	1
Surg 271.2: Special Topics in Colon and Rectal Surgery II	2
Surg 272.1: Special Topics in Thoracic & Cardiovascular Surgery I	1
Surg 272.2: Special Topics in Thoracic & Cardiovascular Surgery II	2
Surg 273.1: Special Topics in Urologic Surgery I	1
Surg 273.2: Special Topics in Urologic Surgery II	2
Surg 274.1: Special Topics in Plastic and Reconstructive Surgery I	1
Surg 274.2: Special Topics in Plastic and Reconstructive Surgery II	2
Surg 275.1: Special Topics in Neurologic Surgery I	1
Surg 275.2: Special Topics in Neurologic Surgery II	2
Surg 276.1: Special Topics in Pediatric Surgery I	1
Surg 276.2: Special Topics in Pediatric Surgery II	2

**ELECTIVES/COGNATES****3 units**

Electives may be taken from related graduate courses of the university to complete the unit requirements for the program.

**Surg 300: THESIS****6 units**

## MASTER OF SCIENCE IN EPIDEMIOLOGY (CLINICAL EPIDEMIOLOGY)

### *Department of Clinical Epidemiology*

The U.P. College of Medicine and the College of Public Health are jointly offering the Master of Science in Epidemiology with two tracks namely, Clinical Epidemiology and Public Health Epidemiology. The Clinical Epidemiology track is a two-year program which enables health professionals to successfully implement a health program or to deliver better health care to their patients through the application of the principles of epidemiology, biostatistics, clinical economics, health social science, health technology assessment and health policy making. The program is also designed to equip clinicians with skills to carry out and evaluate valid and reliable research on common health problems which they encounter.

Candidates who have satisfactorily complied with the academic requirements of 28 units of course work and has successfully presented orally and in writing their thesis qualifies for the degree of Master of Science in Clinical Epidemiology. Those who opt not to pursue the Master of Science in Clinical Epidemiology degree may be awarded a Diploma in Clinical Epidemiology upon completion of all academic requirements with a general weighted average of 2.00 or better and no grade of 5.00 in any of the courses.

### **Objectives**

At the end of the program, the graduate should be able to generate and evaluate new information and technology relevant to his field of work. Specifically, the graduate should be able to:

1. demonstrate skills in the application of epidemiologic concepts and principles to the solution of clinical and public health problems;
2. identify, plan, undertake, analyze and interpret clinical or public health research projects;
3. deliver technical services to clinicians or public health workers on how to:
  - 3.1 properly identify factors in disease causation,
  - 3.2 evaluate the reliability and validity of instruments,
  - 3.3 determine the efficacy and effectiveness of interventions,
  - 3.4 plan strategies for disease control/prevention,
  - 3.5 devise methods for evaluating health technology/programs, and
  - 3.6 provide guidelines for research activities whose results could be the bases for health policy formation.
4. develop a critical attitude in evaluating scientific literature and information in the management of health problems;
5. appreciate the roles of economics and health social science in making health interventions more efficient and culturally acceptable.

<b>Curricular Program Requirements</b>	<b>Units</b>
Major	19
Core	5
Electives/Cognates	4
Thesis	6
<b>TOTAL</b>	<b>34</b>

### **MAJOR**

<b>Course Title</b>	<b>Units</b>
CE 201: Concepts of Clinical Economics & Health Social Sciences	2
CE 211: Fundamentals of Clinical Epidemiology	2
CE 212: Basic Clinical Research Methodology	2
CE 213: Critical Appraisal of Medical Literature	1
CE 214: Research Organization and Management	2
CE 215: Synthesis of Research	2
CE 217: Research Design in Clinical Epidemiology	2
CE 218: Ethics in Clinical Epidemiology	1
CE 221: Principles and Techniques of Health Policy Formulation	2
CE 298: Independent Study	3

### **CORE**

<b>Course Title</b>	<b>Units</b>
BIOSTAT 201: Fundamentals of Biostatistics 1	3
BIOSTAT 202: Fundamentals of Biostatistics 2	2

### **ELECTIVES**

<b>Course Title</b>	<b>Units</b>
CE 207: Advanced Clinical Statistics	2
CE 222: Clinical Economics	2
CE 223: Informatics for Clinical Decision Making	2
CE 224: Scientific Paper Writing and Presentation	2
CE 297: Seminars in Health Social Science	2
CE 299: Social Science Research Methods in Health	2
Pharma 250: Introduction to Pharmacoepidemiology	2

**CE 300: Thesis** **6 units**

## MASTER IN ORTHOPEDICS

### *Department of Orthopedics*

The degree of Master in Orthopedics is conferred after successfully passing a comprehensive examination and completion of a special project/research on an orthopaedic topic. A maximum residency of 5 years is in effect. The M. Orth. is a 2-year program with emphasis on higher basic sciences and on special and controversial topics in Orthopedics. The graduate besides being a clinician should also have the potential of being a researcher or a teacher. Thus, the program also provides an introduction to the science of research and to the foundation of teaching and learning. The graduate is expected to be a proficient orthopaedic clinician with a solid basic science background.

## Objectives

At the end of the course, the student is expected to be able to:

1. explain the basic science basis for the orthopaedic conditions and their management.
2. proficiently detect, explain and analyze orthopaedic condition.
3. formulate evidence-based management program for orthopaedic conditions.
4. utilize the principle of the science of research in carrying out research in Orthopedics.

Curricular Program Requirements	Units
Major	16
Core	14
<b>TOTAL</b>	<b>30</b>

### MAJOR

Course Title	Units
Ortho 205: Orthopedic Diagnosis	1
Ortho 206: Orthopedic Surgical Techniques	1
Ortho 207: Special Topics in Pediatric Orthopedics	2
Ortho 208: Special Topics in Adult Orthopedics	2
Ortho 209: Special Topics in Orthopedic Trauma	2
Ortho 210: Special Topics in Spine Surgery	2
Ortho 211: Special Topics in Hand Surgery	2
Ortho 298: Special Problem in Orthopedics	4
<i>Prerequisite: Completion of all core and major subjects</i>	

### CORE

Course Title	Units
CE 211: Fundamentals of Clinical Epidemiology	2
CE 212: Basic Clinical Research Methodology	2
HP 201: Psycho-philosophical Foundation of Learning & Teaching in the Health Sciences	2
Ortho 201: Surgical Musculoskeletal Anatomy	1
Ortho 202: Musculoskeletal Physiology and Metabolism	1
Ortho 203: Bone Histology and Pathology	1
Ortho 204: Intro. to Bioengineering and Other Related Sciences in Orthopedics	3
Ortho 204.1: Intro. to Bioengineering Laboratory	1
Ortho 212: Critical Appraisal of Orthopedic Literature	1

## MASTER OF BASIC MEDICAL SCIENCE

The Master of Basic Medical Sciences program is a multidisciplinary graduate offering designed for teaching proficiency in the science basic to medicine. Nationwide, physicians and professionals of the Allied Medical Sciences teach the basic sciences in medical schools and in private paramedical schools. These faculty with various ranks are not really trained for an academic career. Hence, a graduate program that can enrich their present capabilities is deemed relevant. The offering of the Master of Basic Medical Sciences will meet the demands of the local and regional health human resource development in 30 other medical schools and more than 30 allied medical schools in the Philippines. The teachers and their students would definitely benefit for this program for it will give them an opportunity in improving the standards of teaching and learning schemes. This program is a benchmark offering here in the Philippines.

Curricular Program Requirements	Units
Major	10
Core	19
Electives	7
<b>TOTAL</b>	<b>36</b>

### MAJOR

Course Title	Units
Biochem 201.3: Intro. to Biochemical Laboratory techniques	2
Anat 221: Advanced Microscopic and Submicroscopic anatomy	3
HP 201: Psycho-philosophical Foundation of Learning and Teaching in Health Sciences	2
HP 221: Instructional Designs in Health Sciences Courses	3

### CORE

Course Title	Units
Biochem 201.2: General Biochemistry for Graduate Students	4
Physio 202: Physiology for Graduate Students	6
Pharma 201: Pharmacodynamics	2
Pharma 202: Pharmacokinetics	2
Anat 220: Adv. Study of Macroscopic Human Biologic Structure	5

### ELECTIVES

Course Title	Units
HP 229: Special Problems in Health Profession Education	4
HP 232: Test Construction Analysis in Health Sciences	2
HP 241: Practicum: Teaching Skills in Health Profession Education	2
Physio 203: Neurosciences for Graduate Students	2
Physio 204: Correlative Physiology	2
<i>Prerequisite: Physio 202</i>	
Physio 205: General Techniques in Physiology	2

Physio 206: Special Techniques in Physiology	2
Select from	
206.1 Cardiovascular	
206.2 Endocrine	
206.3 Gastrointestinal	
206.4 Neurophysiology	
206.5 Renal	
206.6 Pulmonary	
Pharma 210: Readings in Advanced Pharmacology	1
Pharma 220: Pharmacologic Techniques	3
Pharma 235: Biologic fate of drugs	3
Pharma 248: Toxicology	3
Anat 222: Correlative Neuroanatomy	2
Anat 223: Research Methods in Anatomy	2
Anat 297: Seminars in Biologic Structure	1

**COGNATES**

<i>Course Title</i>	<i>Units</i>
PHN 201: Principles and Public Health Aspect of Nutrition	2
PHN 202: Clinical Nutrition	2
<i>Prerequisite: PHN 201</i>	
PHN 205: Biochemistry of Nutrition	2
<i>Prerequisite: At least 2 units of Biochem or consent of instructor</i>	

**MASTER OF SCIENCE IN BIOCHEMISTRY****Department of Biochemistry and Molecular Biology****Objectives**

To provide students with an in-depth knowledge of biochemistry and to cultivate the proper attitude and adequate skills for tertiary level teaching advanced research, and specialty service.

<b>Curricular Program Requirements</b>	<b>Units</b>
Major	10
Core	8
Cognates/Electives	6
Thesis	6
<b>TOTAL</b>	<b>30</b>

**Admission Requirements**

This program is open to holders of a Bachelor of Science Degree or its equivalent and preferably, those who have taken courses in chemistry, biology, physics and mathematics.

This program is also open to holders of the degree of Doctor of Medicine and medical students enrolled in the University of the Philippines who would like to work concurrently for the M.D. and M.S. in Biochemistry.

**Minimum Grade Requirement**

The candidate must obtain a weighted average grade of 2.00 or better.

The student's academic standing shall be evaluated by the Graduate Program Committee at the end of each academic year or upon completion of 13 units of course requirement. In the event that the weighted average of 2.00 in required formal courses is not obtained, the candidate must secure permission from the Committee to enroll in additional courses so as to improve the weighted average. The latter courses must also be approved by the Graduate Program Committee.

**Course Work**

The master degree will be awarded upon the completion of at least 30 units of formal courses: 6 units of cognate courses and 18 units of Biochemistry courses which may be taken from the department or outside provided it is within the UP System and carries a description implying a biochemical treatment of the subject. A minimum of 13 units should be taken in the department. In addition, 6 units of thesis work must be obtained.

**MAJOR**

<i>Course Title</i>	<i>Units</i>
Biochem 204: Chemical Concepts in Biological Systems	1
Biochem 205: Special Techniques	1-3
Biochem 206: Methods of Vitamin Analysis	1
Biochem 210: Biochemical Basis of Genetics	1
Biochem 221: Nucleotides and Nucleic Acids	3
Biochem 222: Proteins, Lipids and Carbohydrates	3
Biochem 224: Physical Biochemistry	3
Biochem 226: Biochemical Catalysis	3
Biochem 228: Metabolism and its Regulation	3
Biochem 230: Nutritional Biochemistry	2
Biochem 235: Biochemical Basis of some Clinical Problems	3
Biochem 240: Advances in Biochemistry	1-4

**CORE**

<i>Course Title</i>	<i>Units</i>
Biochem 201.2: General Biochemistry (Lecture)	4
Biochem 201.3: General Biochemistry (Laboratory)	2
Biochem 297: Seminars in Biochemical Literature	2

**Biochem 300: Master's Thesis** **6 units**

**Cognate Subjects**

To fulfill the requirements for formal courses, a student may enroll in graduate courses in any of the basic sciences departments in the College of Medicine and/or other Colleges in the University of the Philippines upon approval of the Graduate Committee of the Department of Biochemistry and Molecular Biology.

## CERTIFICATE PROGRAM IN BIOCHEMISTRY

### Objectives

To provide training for qualified people who are interested in a teaching career in Biochemistry.

### Requirements

This program is open to holders of the Degree of Doctor of Medicine, Doctor of Dental Medicine or its equivalent.

### Course Work

The Certificate in Biochemistry will be awarded upon completion of 14 units of formal courses (6 units of which are from core courses) and 1 unit of teaching practicum in Biochemistry.

### CORE

<i>Course Title</i>	<i>Units</i>
Biochem 201.2: General Biochemistry Lecture	4
Biochem 297: Seminars in Biochemical Literature	2

## DOCTORAL PROGRAM IN BIOCHEMISTRY

### Objectives

The Ph.D. in Biochemistry program is intended to encourage the development of Biochemistry in the Philippines through the production of highly trained biochemists whose research works contribute to the development of new knowledge.

### Admission Requirements

An applicant for admission must have an M.S. degree in Biochemistry or Chemistry or its equivalent from an accredited institution.

Bachelor of Science graduates who show exceptional performance in the first two semesters while in the masteral program may be considered for a straight Ph.D. program after evaluation by the departmental Graduate Committee.

### Course Requirement

The student with an M.S. degree in Biochemistry or Chemistry or its equivalent must complete at least 25 units of graduate courses in the Ph.D. program. He can choose to take 9 units from other graduate courses in related areas that are offered outside the department.

B.S. graduates must complete at least 45 units of graduate courses. Twelve units of cognate may be taken.

### CORE

<i>Course Title</i>	<i>Units</i>
Biochem 201.2: General Biochemistry Lecture	4
Biochem 201.3: General Biochemistry Laboratory	2
Biochem 205: Special Laboratory Techniques	1
Biochem 221: Nucleotides and Nucleic Acids	3
Biochem 222: Proteins, Carbohydrates and Lipids	3
Biochem 224: Physical Biochemistry	3
Biochem 297: Seminars in Biochemical Literature	2

Any of the above courses or their equivalent taken for an M.S. degree may be credited towards fulfilment of the Ph.D. core course requirements.

Credit will be given to courses taken in universities with whom the Department of Biochemistry and Molecular Biology has a prior arrangement with official approval.

### Transfer of Credits

No more than 9 graduate units earned for doctoral courses in another university shall be credited to course work for a doctoral program, provided however, that where there are institutional arrangements between the University and the external academic institutions, this rule shall not apply.

Other Requirements for Graduation include:

1. One computer course or demonstrated computer proficiency
2. One unit accredited course from NTTC or a certificate of attendance in a weeklong seminar-workshop on biochemical education sponsored by the Philippine Society of Biochemistry and Molecular Biology.

### Comprehensive Examination

To qualify for taking the comprehensive examination, the student must obtain a weighted average grade of 1.75 or better.

The Program Committee shall review annually the student's performance to determine if he shall be allowed to continue in the doctoral program.

The Program Committee shall decide when to administer the comprehensive examination, for which the student may apply after completing his course work. The comprehensive examination which shall be written shall aim to test the student's ability to integrate and apply knowledge that he has acquired in his program of studies. A student who fails the qualifying examination is allowed to take a re-examination on the areas failed. Failure at a second try shall bar the student permanently from the Graduate Program.

### Rating of Comprehensive Examination

A student's performance in the comprehensive examination shall be rated either "Passed" or "Failed".

### Advancement to Candidacy

After passing the comprehensive examination the student shall be considered as having been advanced to candidacy for the degree. The student shall then choose a dissertation adviser, and two readers who shall be members. This committee shall guide the student in the preparation of the dissertation which should be a worthwhile contribution to scholarship.

Before the dissertation research can be formally started, the student must first prepare a written dissertation proposal with the advice of his/her Dissertation Committee and submit it to the Graduate Program Committee for approval. The dissertation proposal may be approved, modified or rejected by the Graduate Program Committee. Once approved, the student may carry out his research under the guidance of the Dissertation Committee.

### Oral Examination

After the doctoral committee shall have approved the dissertation, an examination panel of not less than five members shall be appointed by the head of the academic unit to conduct an oral examination on the dissertation.

Failure at a second oral examination shall disqualify the candidate from the program.

## MASTER OF SCIENCE IN PHARMACOLOGY

### Department of Pharmacology

The Master's degree will be awarded upon completion of at least 24 units of formal courses: 6 units of cognate courses and 18 units of Pharmacology courses from the Department or outside, provided it is within the U.P. System. In addition, 6 units of thesis work must be obtained.

### Objective

To provide students with in-depth knowledge of pharmacology and to cultivate the proper attitudes toward the Science of Pharmacology and the adequate skills for tertiary level teaching, and research.

### Admission Requirements

This program is open to holders of any college science degree preferably with a background in biology, chemistry, mathematics and physics.

This program is also open to holders of the degree of Doctor of Medicine, Dentistry, Veterinary Medicine and related science.

### Entry Requirements

Pharmacology 201 and Pharmacology 202 are entry requirements to the program. MD graduates of the University of the Philippines are exempted from taking Pharmacology 201

and Pharmacology 202 while MD graduates of other schools shall be required to enroll in these courses unless they are able to validate the same. Non-MD graduates shall be required to enroll in these courses.

<i>Course Title</i>	<i>Units</i>
Pharma 210: Readings in Advanced Pharmacology	1
Pharma 220: Pharmacologic Techniques	3
Pharma 234: Advanced Molecular Pharmacology	3

### Graduate Courses

<i>Course Title</i>	<i>Units</i>
Pharma 235: Biologic Fate of Drugs	3
Pharma 236: Advanced Comparative Pharmacology & Pharmacogenetics	2
Pharma 241: Advanced Behavioral Pharmacology	2
Pharma 242: Adv. Muscle Pharmacology	2
Pharma 243: Teratology and Developmental Pharmacology	3
Pharma 244: Clinical Pharmacology	2
Pharma 245: Advances in Autonomic Pharmacology	2
Pharma 246: Endocrine Pharmacology	3
Pharma 247: Cancer Chemotherapy	3
Pharma 248: Toxicology	2
Pharma 250: Introduction to Pharmacoeconomics	3
Pharma 251: Intermediate Pharmacoeconomics	4
Pharma 252: Adv. Pharmacoeconomics	3
Pharma 299: Research Methods in Pharmacology	

To fulfill requirements for formal courses, a student may enroll in graduate courses offered by the Department of Chemistry of the College of Arts and Sciences, the College of Pharmacy and/or 5 basic science department of the College of Medicine

**Pharma 300: Master's Thesis** **6 units**

## MASTER OF SCIENCE IN PHYSIOLOGY

### Department of Physiology

### Objective

To provide training for those interested in an academic and/or research career in Physiology.

### CORE

<i>Course Title</i>	<i>Units</i>
Physio 202: Physiology for Graduate Students	6
Physio 203: Neuroscience for Graduate Students	3
Physio 204: Correlative Physiology	2
<i>Prerequisite: Physio 202</i>	
Physio 205: General Techniques in Physiology	2
Physio 211: Advanced Physiology	3
Physio 298: Special Problems in Physiology	3
Biostat 202: Fundamentals in Biostatistics II	2

**ELECTIVES**

<i>Course Title</i>	<i>Units</i>
Physio 206: Special Techniques in Physiology	
Select from	2
206.1 Cardiovascular	
206.2 Endocrine	
206.3 Gastrointestinal	
206.4 Neurophysiology	
206.5 Renal	
206.7 Pulmonary	
Physio 207: Developmental Physiology	2
Physio 208: Comparative Physiology	2
<i>Prereq.: Physiology 202, 203 or consent of instructor</i>	
Physio 296: Directed Readings in Physiology	2
Physio 297.1 & 297.2: Seminars in Physiology	2
<i>Prereq.: Physiology 202, 203 or consent of instructor</i>	
Physio 298.1: Special Problems in Cardiovascular Physiology Lab.	2
Physio 298.2: Special Problems in Endocrine Physiology Lab.	2
Physio 298.3: Special Problems in Gastrointestinal Physiology Lab.	2
Physio 298.4: Special Problems in Neurophysiology	2
Physio 298.5: Special Problems in Renal Physiology	2
Physio 298.6: Special Problems in Pulmonary Physiology	2
<b>Physio 300: Thesis</b>	<b>6 units</b>

**DIPLOMA IN PHYSIOLOGY**

This program is intended to provide training for those interested in an academic and/or research career in physiology but who are unable to pursue the master's program.

The Diploma of Physiology will be awarded upon completion of at least fourteen units of formal courses. Courses from the M.S. Physiology program will be selected depending on the qualification and needs of students.

These courses may be credited to the M.S. Physiology program should the candidate decide to continue on with the Master's program.

**MASTER IN AND MASTER OF SCIENCE  
IN MEDICAL ANTHROPOLOGY**

Medical Anthropology offers theoretical models and research tools that help us to understand health and illness.

**Objectives**

1. Stimulate new initiatives in medical and health training and education;
2. Encourage innovative research into health issues; and
3. Encourage more humane, culturally-sensitive and patient-oriented health care

**Admission Requirements**

1. Applicants should have at least a bachelor's degree (Bachelor of Arts, Bachelor of Science) or a professional degree (e.g. MD).
2. Applicants will be evaluated based on their transcripts of records, work experience and interviews.

**Curricular Program Requirements**

<b>Curricular Program Requirements</b>	<b>Units</b>
Major	18
Electives	6
Thesis	3
<b>TOTAL</b>	<b>24-27</b>

**MAJOR**

<i>Course Title</i>	<i>Units</i>
Med Anthro 201: Perspectives in Medical Anthropology	3
Med Anthro 210: Medical Ecology	3
Med Anthro 221: Political Economics & Social Epidemiology	3
Med Anthro 251: A Cultural History of Health Care Systems	3
Med Anthro 297: Research Methods in Medical Anthropology	3
Med Anthro 299: Independent Studies	3

**ELECTIVES**

<i>Course Title</i>	<i>Units</i>
Med Anthro 281: Ethnopharmacology	3
Med Anthro 282: Ethnopsychiatry	3
Med Anthro 283: Nutritional Anthropology	3
Med Anthro 298: Special Topics	3

**Med Anthro 300\*: Thesis**

**3 units (MS only)**

## MASTER OF SCIENCE IN GENETIC COUNSELING

The Master of Science in Genetic Counseling is a two-year degree program that prepares students to become competent genetic counselors. Genetic counselors are health care providers with specialized training in psychosocial counseling of patients and members of their families with risks for genetic disorders. They provide genetic counseling which involves data gathering of family history information and assessment. Genetic counselors work closely with the clinical/medical geneticist who provides the clinical diagnosis and management of a patient. They also work with a team of other health care providers (i.e., social workers, nurses, nutritionists, and other specialized medical professionals) to provide the best care to patients and their families. The degree program will serve a vital role in the access, delivery, and expansion of medical genetics, not only in the Philippines but also in the Southeast Asia region.

### Program Goals

As the students complete the two-year degree program, they will be competent in assisting clinical medical geneticists in diagnosing and managing patients with various genetic conditions. The students will be able to address the implications of the diagnosis, both medically and psychosocially, to the patient and members of their families.

Graduates will be able to:

1. apply the basics of human genetics and the principles of clinical medical genetics and genetic counseling to patients;
2. provide supportive genetic counseling to families, serve as patient advocates, and refer patients and families to community and/or local government support services;
3. contribute to existing knowledge on genetic counseling through research;
4. serve as educators and resource for other health care professionals and for the general public; and
5. plan, develop, and evaluate genetic services programs.

### Admission Requirements

The following are the minimum requirements of the National Graduate Office for the Health Sciences (NGOHS):

1. Good scholastic records from any recognized institution of higher learning.
2. Entrance Interview
3. Duly accomplished Application Form together with:
  - 3.1. Original copy of the official transcript of records;
  - 3.2. Recommendation from two former professors, supervisors or employers (forms included in the application packet);
  - 3.3. Receipt of processing fee paid at the UP Manila Cashier's Office;

- 3.4. Certified true copy of college diploma with the seal of the university and the signature of the registrar in ink;
- 3.5. Four passport-size photos;
- 3.6. Curriculum Vitae.

Essay on 8.5 x 11 size paper stating the interest in genetic counseling and the view on self-directed learning as a method of instruction and description of research interest

Each program may have additional requirements. Interview, written and oral examinations or endorsement from Chair of sending institutions may be required. A Committee on Graduate Program from each department shall screen applicants and make the recommendations for admission.

Applicants should be graduates of recognized institutions of higher education with at least a baccalaureate degree. Prerequisites include completion of undergraduate courses in biology, chemistry, psychology or related courses. Students with a Bachelors of Science degree in Nursing and other health related degree courses are preferred.

### Graduation Requirements

A candidate for the degree of Master of Science in Genetic Counseling must comply with the rules of graduation of the University.

1. Completion of academic requirements with a general weighted average not lower than 2.0;
2. Passing written comprehensive examination in the department;
3. Completion of the thesis research project. This must be an original research work that constitutes a substantial contribution to knowledge or skill in genetic counseling, through oral and written form;
4. Submission of a log book documenting 40 genetic counseling cases per student. The 40 patient clinical cases include 10 pedigree reports and 30 case reports (5 prenatal, 10 general pediatric, 10 metabolic and 5 adult cases).

<b>Curricular Program Requirements</b>	<b>Units</b>
Major	13
Core	16
Electives	4
Thesis	6
<b>TOTAL</b>	<b>39</b>

### MAJOR

<b>Course Title</b>	<b>Units</b>
Genetic Counseling 202: Psychosocial Aspects of Genetic Counseling	3
Genetics 202: Public Health Genetics	3
Genetic Counseling 203: Applied Genetic Counseling	3
Genetic Counseling 207: Seminars in Genetics and Genetic Counseling	1
Genetic Counseling 204: Professional Issues in Genetic Counseling	3

**CORE**

<i>Course Title</i>	<i>Units</i>
Genetics 201: Prin. of Human Genetics	3
Genetic Counseling 201: Principles of Genetic Counseling	3
Biostat 201: Fundamentals of Biostatistics I	3
Epi 201: Principles of Epidemiology	3
Biostat 206: Research Methods I	2
HP 261: Organization and Management of Health Programs	2

**ELECTIVES**

<i>Course Title</i>	<i>Units</i>
Genetic Counseling 205: Genetic Counseling in Hospital Setting	2
Genetic Counseling 206: Genetic Counseling in Community Setting	2
CE 297: Seminars in Health Social Science	2
MI 238: Applications of Internet Technologies in Healthcare	2

**Genetic Counseling 300: Master's Thesis**      **6 units**

**COURSES OFFERED****ANAT 220: Advanced Study of Macroscopic Human Biologic Structure.**

Thorough analysis of human anatomy, including embryological considerations.

*Credit: 5 units, 5 hours (2 didactic, 3 lab)*

*Prerequisite: Comparative Anatomy or its equivalent*

**ANAT 221: Advanced Microscopic and Submicroscopic Anatomy.**

In-depth study of microscopic and ultramicroscopic structures of the human body. It includes a discussion of light and electron microscopy.

*Credit: 3 units (3 hours)(1 didactic, 2 lab)*

**ANAT 222: Correlative Neuroanatomy.**

Analysis of functional consequences of neuroanatomic lesions.

*Credit: 2 units*

*Prerequisite: Anatomy 220*

**ANAT 223: Research Methods in Anatomy.**

Research methodologies and techniques in the study of biologic structures.

*Credit: 2 units*

*Prerequisite: Anatomy 221*

**ANAT 297: Seminars in Biologic Structures.**

Current issues in Anatomy.

*Credit: 1 unit*

*Prerequisites: Anatomy 220, 221*

**BIOCHEM 201.2: General Biochemistry for Graduate Students.**

The chemistry, function and metabolism of important cellular constituents, their origin, transport and excretion in the body: an introduction to regulatory mechanisms.

*Credit: 4 units (64 hrs, 4 hrs lec weekly)*

**BIOCHEM 201.3: Introduction to Biochemical Laboratory Techniques.**

Laboratory activities including preparation of protocol, actual experimentation and interpretation and presentation of data.

*Credit: 2 units (96 hrs lab work)*

**BIOCHEM 204: Chemical Concepts in Biological Systems.**

A survey of quantitative, physical and organic chemical principles as applied to biochemical problems.

*Credit: 1 unit (48 hrs, 3 hrs workshop weekly)*

**BIOCHEM 205: Special Laboratory Techniques.**

Techniques employed in enzymology, structural elucidation of biomolecules and in the study of certain biochemical aspects of signal transduction, genetics, experimental nutrition and clinical medicine.

*Credit: 1 unit (48 hrs of lab work, discussion and demonstration; may be taken three times with a total of three units).*

*Prerequisite: Biochem 201.3 or its equivalent*

**BIOCHEM 206: Methods of Vitamin Analysis.**

Laboratory analysis of vitamins, their derivatives or other metabolites commonly used in the evaluation of vitamin nutrition.

*Credit: 1 unit (48 hrs of lab work)*

*Prerequisite: Biochem 230 or its equivalent*

**BIOCHEM 207: Biochemical Analysis in Medical Diagnosis.**

Chemical and enzymological procedures commonly used in the analysis of biological fluids for the diagnosis of clinical disorders.

*Credit: 1 unit (48 hrs of lab work)*

**BIOCHEM 210: The Biochemical Basis of Genetics.**

The molecular biology of the gene, the replication, expression and control of genetic material.

*Credit: 1 unit (16 hrs lecture)*

**BIOCHEM 221: Nucleotides and Nucleic Acids.**

Electronic concepts in biochemistry, structure and biochemical functions of simple nucleotides and nucleic acids.

*Credit: 3 units (48 hrs lecture)*

**BIOCHEM 222: Proteins, Lipids and Carbohydrates.**

The relation of structures to biochemical functions of amino acids, protein, lipids and carbohydrates.

*Credit: 3 units (48 hrs lecture)*

**BIOCHEM 224: Physical Biochemistry.**

Application of the principles of physical chemistry in the study of biochemical and biological systems.

*Credit: 3 units (48 hrs lecture and problem solving sessions)*

**BIOCHEM 226: Biochemical Catalysis.**

Molecular foundation of biochemical catalysis.

*Credit: 3 units (48 hrs lecture)*

**BIOCHEM 228: Metabolism and its Regulation.**

Metabolic pathways, their control mechanisms and interrelationships.

*Credit: 3 units (48 hrs lecture)*

**BIOCHEM 230: Nutritional Biochemistry.**

Biochemical basis of nutrition including metabolic alterations in deficiencies of macro and micro nutrients.

*Credit: 2 units (32 hrs lecture)*

*Prerequisite: Biochem 201.2 or its equivalent*

**BIOCHEM 235: Biochemical Basis of Some Clinical Problems.**

The biochemical basis of some clinical diseases including inborn errors of metabolism.

*Credit: 3 units*

**BIOCHEM 240: Advances in Biochemistry.**

Development in biochemical fields of interest.

*Credit: 1 unit (maybe taken up to 4 times allowing a max. of 4 units, 16 hrs lecture)*

**BIOCHEM 280: Teaching Practicum in Biochemistry.**

Actual experience in the application of teaching- learning principles in the teaching of biochemistry.

*Credit: 1 unit*

**BIOCHEM 297: Seminars in Biochemical Literature.**

I. Critical evaluation of scientific literature.

II. Presentation of a public seminar or research proposal.

*Credit: 1 unit each*

**BIOCHEM 300: Master's Thesis.**

*Credit: 6 units*

**BIOCHEM 310: Biochemical Genetics.**

Current trends in biochemical genetics.

*Credit: 3 units*

**BIOCHEM 315: Lipids.**

Advances in structure, function and metabolism of lipids.

*Credit: 2 units*

**BIOCHEM 320: Carbohydrates.**

Recent advances in structure, function and metabolism of complex saccharides.

*Credit: 2 units*

**BIOCHEM 325: Proteins.**

Advances in structure, function and metabolism of peptides and proteins.

*Credit: 2 units*

**BIOCHEM 330: Advances in Nutritional Biochemistry.**

Topics of current interest in nutrition with particular emphasis on biochemical aspects.

*Credit: 2 units*

**BIOCHEM 335: Inorganic Biochemistry.**

Coordination of complexes in the living cell and inorganic biochemical mechanism.

*Credit: 3 units*

**BIOCHEM 340: Bio-Organic Chemistry.**

Organic interactions and reaction mechanisms in the living cell.

*Credit: 3 units*

**BIOCHEM 345: Physical Biochemistry of Macromolecules.**

Application of the concepts of physical biochemistry in analyzing the behavior of biological macromolecules.

*Credit: 3 units*

**BIOCHEM 350: Industrial Biochemistry**

Enzymes in industry, biochemical engineering and biotechnology.

*Credit: 3 units*

**BIOCHEM 399: Research Seminar.**

*Credit: 1 unit*

**BIOCHEM 400: PhD Dissertation.**

*Credit: 15 units*

**BIostat 201: Fundamentals of Biostatistics I.**

Collection, presentation and elementary analysis of data.

*Credit: 3 units (72 hours) (24 hrs of lecture, 48 hrs of lab)*

**BIostat 202: Fundamentals of Biostatistics II.**

Further treatment of frequency distributions and sampling variations; least squares, correlations, linear and curvi-linear regression.

*Credit: 2 units (16 hrs of lecture, 32 hrs of lab)*

*Prerequisite: Bio 201 or consent of instructor*

**CAUD 201: Theoretical Basis of Audiology.**

*Credit: 2 units*

**CAUD 203: Auditory and Language Pathology.**

*Credit: 2 units*

**CAUD 205: History Taking and Professional Behavior in Clinical Audiology.**

*Credit: 1 unit*

**CAUD 211: Assessment Strategies I.**

Basic audiometric techniques, providing both cognitive and psychomotor components in pure tone audiometry (PTA), speech reception/discrimination test (ST), acoustic impedance testing, and pediatric audiometry. Includes supervised hands-on clinical application.

*Credit: 4 units, 112 hrs (16 hrs lec, 96 hrs lab)*

**CAUD 212: Assessment Strategies II.**

Theoretical concepts of objective hearing assessment strategies such as auditory evoked potentials and otoacoustic emissions.

An overview of vestibular assessment techniques, central auditory dysfunction and site of lesion testing. Includes supervised clinical application.

*Credit: 4 units, 104 hours (24 hours lec, 80 hours lab)*

**CAUD 230: Hearing Amplification.**

Principles of hearing aid fitting and their application.

*Credit: 2 units, 40 hrs (24 hrs lec, 16 hrs lab)*

**CAUD 234: Aural Rehabilitation in Adults.**

Theoretical foundation and approaches to aural rehabilitation of adults with hearing impairment.

*Credit: 1 unit, 24 hrs (8 hrs lec, 16 hrs lab)*

**CAUD 236: Hearing Conservation.**

Issues related to noise and hearing conservation.

*Credit: 1 unit, 16 hrs (lec)*

**CAUD 251: Program Development in Audiology.**

Development and evaluation of audiologic problems.

*Credit: 2 units (40 hrs) (24 hrs lec, 16 hrs lab)*

**CAUD 280: Clinical Practicum.**

Application and integration of all clinical courses.

*Credit: 4 units, 128 hrs (lab)*

**CAUD 296: Special Project.**

Application of theoretical knowledge and skills in student's area of interest in teaching, research or program development.

*Credit: 4 units, 128 hrs (lab)*

**CAUD 299: Introduction to Research Audiology.**

Review of research design and methods applied in Audiology.

*Credit: 2 units*

**CE 201: Concepts of Clinical Economics and Health Social Sciences.**

*Credit: 2 units, 32 hrs (lec)*

**CE 205: Clinical Statistics.**

Basic statistical methods as applied in Clinical Medicine.

*Credit: 5 units, (48 hrs lec, 64 hrs lab)*

**CE 207: Advanced Clinical Statistics.**

Advanced statistical methods for clinical epidemiology.

*Credit: 2 units (48 hrs) (16 hrs lec, 32 hrs lab)*

*Prerequisites: BIOSTAT 201 & 202 or CE 205*

**CE 211: Fundamentals of Clinical Epidemiology.**

Introduction to scientifically appropriate ways of identifying and solving problems in human biology, clinical medicine and health care.

*Credit: 2 units (48 hrs) (16 hrs of lec, 32 hrs of lab)*

**CE 212: Basic Clinical Research Methodology.**

General strategies of health research including design.

*Credit: 2 units (48 hrs) (16 hrs lec, 32 hrs lab)*

*Prerequisite: CE 211*

**CE 213: Critical Appraisal of Medical Literature.**

Application of rules of evidence to clinical data.

*Credit: 1 unit, 16 hrs (lec)*

*Prerequisite: CE 211*

**CE 215: Synthesis of Research.**

Qualitative and/or quantitative synthesis of clinical evidence including meta-analysis.

*Credit: 2 units (48 hrs) (16 hrs lec, 32 hrs lab)*

*Prerequisites: CE 211, CE 212, Biostat 201 & 202 or CE 205*

**CE 217: Research Design in Clinical Epidemiology.**

Detailed concepts in design, measurement and evaluation of clinical epidemiology studies

*Credit: 2 units (48 hrs) (16 hrs lec, 32 hrs lab)*

**CE 218: Ethics in Clinical Epidemiology.**

Principles of research ethics used in clinical epidemiology.

*Credit: 1 unit, 16 hrs (lec)*

**CE 221: Principles and Techniques of Health Policy Formulation.**

Theoretical framework in health policy formulation, basic techniques of decision tree analysis and health technology assessment.

*Credit: 2 units, 32 hrs (lec)*

**CE 222: Clinical Economics.**

Principles and methods of economic evaluation such as cost-effectiveness, cost-utility, cost benefit analysis.

*Credit: 2 units, 32 hrs (lec)*

*Prerequisites: Biostat 201 & 202 or CE 205*

**CE 223: Informatics for Clinical Decision Making.**

Application of basic concepts and principles of medical informatics to clinical decision making.

*Credit: 2 units, 48 hrs (16 hrs lec, 32 hrs lab)*

*Prerequisite: CE 213*

**CE 224: Scientific Paper Writing and Presentation.**

Techniques of scientific paper writing and presentation.

*Credit: 2 units, 48 hrs (16 hrs lec, 32 hrs lab)*

**CE 297: Seminars in Health Social Science.**

Transdisciplinary perspective of current social issues related to health.

*Credit: 2 units, 32 hrs (lec)*

**CE 298: Independent Study.**

*Credit: 3 units*

**CE 299: Social Science Research Methods in Health.**

Basic qualitative and quantitative social science research methods and techniques as applied to health.

*Credit: 2 units, 32 hrs (lec)*

**CE 300: Thesis.**

*Credit: 6 units*

**CH 240: Inherited Disorders and Community Genetics.**

In-depth study of principles of heredity as they relate to common genetic conditions of patients and the effects of heredity in communities.

*Credit: 1 unit*

**CH 241: Newborn Care in Developing Countries.**

Current trends in the study and management of perinatal health issues in developing countries.

*Credit: 2 units*

**CH 242: Principles of Growth and Development.**

An in-depth understanding of the principles, process and dynamics of growth and development.

*Credit: 2 units*

**CH 243: Pediatric Nutrition.**

Advance study of concepts of pediatric nutrition in health and disease.

*Credit: 2 units*

**CH 244: Management of Pediatric Infectious Diseases in Developing Countries.**

Critical analysis and management of infectious diseases in childhood.

*Credit: 1 unit*

**CH 250: Preventive Pediatrics and Anticipatory Care.**

Intensive study of integrated and accessible services by clinicians who are accountable for addressing the needs of the majority with emphasis on preventive and anticipatory care.

*Credit: 1 unit*

**CH 251: Environmental Pediatrics.**

A comprehensive survey and analysis of environmental health issues pertaining to the child.

*Credit: 1 unit*

**CH 252: Care of the Adolescent.**

Critical analysis of adolescent health problems, issues and management in the Philippines and other developing countries.

*Credit: 1 unit*

**CH 253: Child Advocacy.**

A multidisciplinary approach in advocacy of children needing special protection.

*Credit: 1 unit*

**CH 254: Pediatric Pharmacotherapeutics.**

Varied approaches to pediatric therapeutics, investigations in the field of pediatric clinical pharmacology that will elucidate variations in dose requirements at different stages of growth and development.

*Credit: 1 unit*

**CH 255: Mental Health of Children.**

Mental health issues those are basic to the holistic understanding of childhood illnesses and their effects on the child and the family.

*Credit: 1 unit*

**CH 297: Seminars in Child Health.**

Contemporary issues in child health and their impact on the Philippine health situation.

*Credit: 1 unit*

**CH 300: Thesis.**

*Credit: 6 units*

**EPI 201: Principles of Epidemiology.**

Concepts and techniques for measuring relationships between variables.

*Credit: 3 units, 72 hrs (24 hrs lec, 48 hrs lab)*

*2 units, 48 hrs (16 hrs lec, 32 hrs of lab)*

**EPI 204: Study Designs in Epidemiology.**

Design, conduct and analysis of epidemiologic studies.

*Credits: 2 units, 48 hrs (16 hrs of lec, 32 hrs of lab)*

*Prerequisite: Epi 201*

*Co-requisite: Epi 202*

**FCM 260: Principles and Practice of Family Medicine.**

Philosophy, principles, and perspectives in the practice of Family and community medicine.

*Credit: 2 units*

**FCM 261: Family Wellness.**

Preventive and family health care throughout the family life cycle.

*Credit: 2 units*

**FCM 262: Communication and Counseling Skills in Family Medicine.**

In-depth studies on doctor-patient relationships utilizing the principles of communication and counseling.

*Credit: 1 unit*

**FCM 263: Hospice and Palliative Care.**

Overview of comprehensive approaches to hospice and palliative care.

*Credit: 1 unit*

**FCM 264: Evidence - Based Practice in Family Medicine.**

Critical appraisal of family and community medicine concepts and principles.

*Credit: 1 unit*

**FCM 265: Quality Assurance in Family Medicine.**

Formulation and design of practical and sustainable quality assurance project.

*Credit: 1 unit*

**FCM 271: Clinical Teaching in Family Medicine.**

Innovative strategies in teaching family and community medicine.

*Credit: 2 units*

*Prerequisite: HP 221*

**FCM 297: Seminars in Family Medicine.**

In-depth studies of various issues and controversies in family and community medicine.

*Credit: 3 units*

**FCM 298: Special Studies in Integrative Medicine.**

Philosophy, principles, and practice of, and even issues surrounding, traditional forms of healing and complementary/adjunctive medicine.

*Credit: 2 units*

**FCM 300: Thesis.**

*Credit: 6 units*

**Genetic Counseling 201: Principles of Genetic Counseling.**

Fundamental theories and principles of effective patient/ client interviewing in genetic counseling practice.

*Credit: 3 units*

**Genetic Counseling 202: Psychosocial Aspects of Genetic Counseling.**

Psychosocial and counseling theories, approaches, and resources necessary for the provision of genetic counseling.

*Credit: 3 units*

**Genetic Counseling 203: Applied Genetic Counseling.**

Hands-on training in various genetics clinic (i.e., general, metabolic, newborn screening, prenatal, cancer) serving a variety of referral indications and attendance to regional genetics clinic and newborn screening centers.

*Credit: 3 units*

**Genetic Counseling 204: Professional Issues in Genetic Counseling.**

Professional standards, ethics, legal principles, health systems and policy issues relevant to genetic counselors.

*Credit: 3 units*

**Genetic Counseling 205: Genetic Counseling in Hospital Setting.**

Clinical rotation in a genetics clinic of choice serving a variety of referral indications.

*Credit: 3 units*

**Genetic Counseling 206: Genetic Counseling in Community Setting.**

Clinical rotation in a community setting of choice.

*Credit: 3 units*

**Genetic Counseling 207: Seminars in Genetics and Genetic Counseling.**

Topics in medical genetics in a forum setting.

*Credit: 3 units*

**Genetic Counseling 300: Master's Thesis.**

Thesis research project in the field of genetic counseling.

*Credit: 3 units*

**Genetics 201: Principles of Human Genetics.**

Introduction to the organization of the human genome and principles of inheritance in humans.

*Credit: 3 units*

**Genetics 202: Public Health Genetics.**

Overview of genetics and public health, historical perspectives, its integration into the public health practice, current challenges and opportunities.

*Credit: 3 units*

**HP 201: Psycho-philosophical Foundations of Learning – Teaching in Health Sciences.**

Principles of philosophy and psychology pertinent to educational situations in the health professions, that forms the basis for the teaching learning of health professional.

*Credit: 2 units*

**HP 221: Instructional Design in Health Sciences Courses.**

Development of a design of a unit of instruction within participant's area of teaching with particular consideration of the different available methods of instruction and their appropriateness to specific instructional situations in health field.

*Credit: 3 units*

**HP 229: Special Problems in Health Profession Education.**

*Credit: 4 units*

**HP 232: Test Construction and Analysis in Health Sciences.**

Principles and methods with skill development in the construction and scoring of paper and pencil, oral and psychomotor tests, including comprehensive exams, and the analysis of data from such tests; decision making based on such assessment.

*Credit: 2 units*

**HP 241: Practicum of Teaching Skills in Health Professions Educations**

Critical evaluation and development of the component skills of teaching in various instructional situations encountered in health professions education.

*Credit: 2 units*

*Prerequisites: HP 201, 221*

**HP 261: Organization and Managements of Health Programs.**

General principles of organization and management of health programs and health agencies, relationships of participant's institution to other agencies in the National Health Plan, operation of participant's institution, his and other's roles within it, and utilization of these principles in educational change.

*Credit: 2 units*

**Med Anthro 201: Perspectives in Medical Anthropology.**

An introduction to theoretical perspective in medical anthropology, mainly phenomenology, social interactionism, political economy and cultural ecology.

*Credit: 3 units*

**Med Anthro 210: Medical Ecology.**

An exploration of the interactions involving genetics, human demography, ecology and culture, and how these interactions shape health and illness.

*Credit: 3 units*

*Prerequisite: Medical Anthropology 201 or Consent of Instructor*

**Med Anthro 221: Political Economy and Social Epidemiology.**

A study of the relationships between economic, politics and health, including State policies and laws, private sector initiatives and civil society. The course will also look into how social capital is created and mobilized for health care.

*Credit: 3 units*

*Prerequisite: Medical Anthropology 201 or Consent of Instructor*

**Med Anthro 251: A Cultural History of Health Care Systems.**

*Credit: 3 units*

**Med Anthro 281: Ethnopharmacology.**

*Credit: 3 units*

**Med Anthro 282: Ethnopsychiatry.**

*Credit: 3 units*

**Med Anthro 283: Nutritional Anthropology.**

*Credit: 3 units*

**Med Anthro 297: Research Methods in Medical Anthropology.**

The use of a range of theoretical frameworks and methods for the study of health and illness. The course will include qualitative and quantitative research methods.

*Credit: 3 units*

*Prerequisite: Medical Anthropology 201 or Consent of Instructor*

**Med Anthro 298: Special Topics.**

*Credit: 3 units*

**Med Anthro 299: Research Methods in Medical Anthropology**

The application of medical anthropology towards analyzing health issues. The course will require readings and critical essays on the readings.

*Credit: 3 units*

*Prerequisite: Completion of all required coursework and approval of the Program Committee.*

**Med Anthro 300 (for MS Only): Thesis.**

*Credit: 3 units*

**MO 201: Molecular Biology and Pharmacology of Solid Tumors.**

Molecular biology and genetics, focusing on bio-molecules in normal and cancer cells and their interaction to chemotherapeutic agents for solid tumors, and on their roles per se in genetic therapy and diagnosis of cancer.

*Credit: 2 units, 32 hrs (lec)*

**MO 202: Bioethics and Value Formation in Cancer Care 2.**

Bioethics, in all phases of the management of the cancer patient and his/her family, from disclosure of the diagnosis and prognosis to therapeutic decisions to the hospice care and terminal phase (death and dying issues) in cancer care setting.

*Credit: 2 units, 32 hrs (lec)*

*Prerequisite: MO 230*

**MO 203: Economics in Cancer and Control.**

Clinical health economics as applied to cancer care and control.

*Credit: 2 units, 32 hrs (lec)*

*Prerequisites: MO 201 and MO 230*

**MO 230: Medical Therapeutics in Medical Oncology I.**

Pharmacokinetic/pharmacodynamic and pharmaco-epidemiologic studies in the treatment of primary organ specific solid tumors.

*Credit: 2 units, 32 hrs (lec)*

*Prerequisite: To be taken with MO 280*

**MO 231: Medical Therapeutics in Medical Oncology 2.**

Pharmacokinetic/pharmacodynamic and pharmaco-epidemiologic studies in the treatment of metastatic cancers, bone marrow dysfunction, infection, pain, adverse effects of treatment and alternative/ new methods of cancer treatment.

*Credit: 1 unit, 16 hrs (lec)*

*Prerequisite: MO 230*

**MO 250: Quality Management in Cancer Care.**

Quality control/design/planning, process and information management to facilitate resource allocation and decision making in the care of cancer patient.

*Credit: 2 units, 32 hrs (lec)*

*Prerequisite: MO 230*

**MO 280: Clinical Practice in Medical Oncology I.**

Systematic approach to the diagnosis, treatment, prevention and control of neoplastic diseases designed to allow a student to integrate the aforementioned Medical Therapeutics in Medical Oncology course in supervised clinical practice of cancer medicine.

*Credit: 2 units, 32 hrs (lab)*

*Prerequisite: To be taken with MO 230*

**MO 281: Clinical Practice in Medical Oncology II.**

Continuation of MO 281. MO 280 and 281 emphasize the student as the secondary- attending physician, guided by standard treatment guidelines in usual and or ideal situation.

*Credit: 1 unit, 32 hrs (lab)*

*Prerequisite: MO 280, to be taken with MO 231*

**MO 282: Clinical Practice in Medical Oncology III.**

Systematic approach to the diagnosis, treatment, prevention and control of neoplastic diseases designed to allow a student to integrate the aforementioned Medical Therapeutics in Medical Oncology course in actual clinical practice of cancer medicine.

*Credit: 1 unit, 32 hrs (lab)*

*Prerequisite: MO 281*

**MO 283: Clinical Practice in Medical Oncology IV.**

Continuation of MO 282. MO 282 and 283 emphasize the student as the primary-attending physician, guided by standard treatment guidelines and the contingency approach to patient care in unusual and or real situation.

*Credit: 1 unit, 32 hrs (lab)*

*Prerequisite: MO 282*

**MO 300: Thesis.**

*Credit: 6 units*

**OB-GYN 220: Perspectives and Trends in Obstetrics and Gynecology.**

Discussion and analysis of the history and development of the field and practice of obstetrics and gynecology, including current issues such as bioethics and new technology.

*Credit: 2 units*

**OB-GYN 297.1: Seminars in Obstetrics.**

Presentation and discussion of topics and problems covering diagnostic, operative, prognostic, and preventive aspects in Obstetrics.

*Credit units: 3 units*

**OB-GYN 297.2: Seminars in Gynecology.**

Presentation and discussion of topics and problems covering diagnostic, operative, prognostic, and preventive aspects in Gynecology.

*Credit: 3 units*

**OB-GYN 299: Research in Obstetrics and Gynecology.**

Presentation and discussion of various topics in Obstetrics and Gynecology considering rules of evidence to clinical data, eventually leading to the development of a research project.

*Credit: 3 units*

**OB-GYN 300: Thesis.**

*Credit: 6 units*

**ORTHO 201: Surgical Musculoskeletal Anatomy.**

Study of musculoskeletal anatomy with emphasis on surgical exposure/pitfalls and other aspects needed to understand.

*Credit: 1 unit*

**ORTHO 202: Musculoskeletal Physiology and Metabolism.**

Study of physiologic and metabolic processes which affect the normally functioning musculoskeletal system and the physiologic/metabolic responses during pathologic orthopedic condition.

*Credit: 1 unit, (16 hrs classroom activities)*

**ORTHO 203: Bone Histology and Pathology.**

Study of bone histology and pathology with emphasis on the responses of the bone and soft tissue to different mechanical, oncologic, metabolic and other biologic factors/agent.

*Credit: 1 unit, (16 hrs classroom activities)*

**ORTHO 204: Introductions to Bioengineering and Other Related Science in Orthopedics.**

*Credit: 3 units, (48 hrs classroom activities)*

**ORTHO 204.1: Introduction to Bioengineering Laboratory.**

Laboratory work on bioengineering with special emphasis on material testing and gait analysis.

*Credit: 1 unit, 32 hrs (lab)*

**ORTHO 205: Orthopedic Diagnoses.**

Study of clinical and laboratory diagnostic tools/measures, their basic science basis and analysis/interpretation of results as they are applied to orthopedic conditions.

*Credit: 1 unit, (16 hrs classroom activities)*

**ORTHO 206: Orthopedic Surgical Techniques.**

Laboratory/workshop on special orthopedic surgical techniques.

*Credit: 1 unit, 32 hrs (lab)*

**ORTHO 207: Pediatric Orthopedics.**

Special topics/controversial issues in Pediatric Orthopedics, to include pertinent path physiology and etiology; relevant basic sciences concepts; diagnostic and therapeutic options; outcome results and unresolved issues.

*Credit: 2 units, (32 hrs classroom activities)*

**ORTHO 208: Adult Orthopedics.**

Special topics/controversial issues in Adult Orthopedics, to include pertinent path physiology and etiology; relevant basic sciences concepts; diagnostic and therapeutic options; outcome results and unresolved issues.

*Credit: 2 units, (32 hrs classroom activities)*

**ORTHO 209: Orthopedic Traumas.**

Special topics/controversial issues Orthopedic Trauma, to include pertinent path physiology and etiology; relevant basic sciences concepts; diagnostic and therapeutic options; outcome results and unresolved issues.

*Credit: 2 units, (32 hrs classroom activities)*

**ORTHO 210: Spine Surgery.**

Special topics/controversial issues in Spine Surgery, to include pertinent path physiology and etiology; relevant basic sciences concepts; diagnostic and therapeutic options; outcome results and unresolved issues.

*Credit: 2 units, (32 hrs classroom activities)*

**ORTHO 211: Hand Surgery.**

Special topics/controversial issues in Hand Surgery, to include pertinent path physiology and etiology; relevant basic sciences concepts; diagnostic and therapeutic options; outcome results and unresolved issues.

*Credit: 2 units, (32 hrs classroom activities)*

**ORTHO 212: Critical Appraisal of Orthopedic Literature.**

Application of rules of evidence to clinical data found in orthopedic literature.

*Credit: 1 unit, (16 hrs classroom activities)*

**ORTHO 298: Special Problems in Orthopedics.**

*Credit: 4 units*

*Prerequisite: completion of all major and core courses*

**PHARMA 201: Pharmacodynamics.**

Basic principles of pharmacology, particularly pharmacodynamics, including interaction of drugs in physiological/pathological states, and the classification of drugs. The ethics of the study and the use of drugs.

*Credit: 2 units*

**PHARMA 202: Pharmacokinetics.**

The correlation of pharmacokinetics to action, dosification and adverse effects of drugs in physiologic and pathologic states. Basic principles of pharmacokinetics. Psychomotor skills essential to a basic audiologic assessment.

*Credit: 2 units*

**PHARMA 210: Readings in Advanced Pharmacology.**

Discussion and evaluation of articles appearing in publications of pharmacologic interest.

*Credit: 1 unit*

**PHARMA 220: Pharmacologic Techniques.**

Physiological, biochemical and chemical methods of analysis and evaluation of drug effects.

*Credit: 3 units*

**PHARMA 234: Advanced Molecular Pharmacology.**

Interaction of pharmacologic agents with biological systems at the molecule level.

*Credit: 3 units, 48 hrs (lec)*

**PHARMA 235: Biologic Fates of Drugs.**

Concepts and mechanisms of adsorption, distribution, biotransformation and excretion of drugs.

*Credit: 3 units*

**PHARMA 236: Advanced Comparative Pharmacology and Pharmacogenetics.**

Biological variation in response to drugs.

*Credit: 2 units, 32 hrs (lec)*

**PHARMA 241: Advanced Behavioral Pharmacology.**

Drugs which affect behavior. Laboratory exercises in spontaneous motor activity, aversive conditioning and operant conditioning techniques. Biological assay of drugs affecting behavior.

*Credit: 2 units, 48 hrs (16 hrs lec, 32 hrs lab)*

**PHARMA 242: Advanced Muscle Pharmacology.**

Mechanism of the drug action on different types of muscles at physiologic and biochemical levels. Special techniques in the experimental evaluation of drug effects on muscle preparation.

*Credit: 2 units (48 hrs) (16 hrs lec, 32 hrs lab)*

**PHARMA 243: Teratology and Developmental Pharmacology.**

Effects of drugs on development of the fetus and newborn; effects of maturation on the capability of the young to respond to drugs.

*Credit: 2 units, 32 hrs (lec)*

**PHARMA 244: Clinical Pharmacology.**

Drug effects in man, their measurement and evaluation; correlation with pharmacologic observation in lower animals.

*Credit: 3 units, 48 hrs (lec)*

**PHARMA 245: Advances in Autonomic Pharmacology.**

Latest advances in pharmacology of neurohormones of the peripheral and central autonomies.

*Credit: 2 units, 32 hrs (lec)*

**PHARMA 246: Endocrine Pharmacology.**

Biochemical and metabolic effects of hormones and related substances and their underlying mechanisms.

*Credit: 2 units, 32 hrs (lec)*

**PHARMA 247: Cancer Chemotherapy.**

*Credit: 3 units, 48 hrs (lec)*

**PHARMA 248: Toxicology.**

Experimental approaches to toxic effects of drugs and noxious agents.

*Credit: 3 units, 32 hrs (lec)*

**PHARMA 250: Introduction to Pharmacoepidemiology.**

Application of principles of epidemiology to clinical pharmacology.

*Credit: 2 units, 32 hrs (lec)*

**PHARMA 251: Intermediate Pharmacoepidemiology.**

Application of the principles of Pharmacoepidemiology and its allied disciplines namely: Social Science and Health Economics.

*Credit: 3 units, 48 hrs (lec)*

**PHARMA 252: Advanced Pharmacoepidemiology.**

Research methods and practicum in Pharmacoepidemiology.

*Credit: 4 units (96 hrs) (32 hrs lec, 64 hrs practicum)*

**PHARMA 299: Research Methods in Pharmacology.**

*Credit: 3 units, 48 hrs (lec)*

**PHARMA 300: Master's Thesis.**

*Credit: 6 units*

**PHN 201: Principles and Public Health Aspects of Nutrition.**

Study of essential nutrients and the practical application of nutritional science in public health.

*Credit: 2 units, 32 hrs (lec)*

**PHN 202: Clinical Nutrition.**

Clinical manifestations of nutritional deficiencies, and the dietary considerations in the treatment of diseases.

*Credit: 2 units, 32 hrs (lec)*

*Prerequisite: PHN 201 or consent of the instructor*

**PHN 205: Biochemistry of Nutrition.**

Intermediary metabolism of the various nutrients.

*Credit: 2 units, 32 hrs (lec)*

*Prerequisites: At least 2 units of Biochem. or consent of instructor*

**PHYSIO 202: Physiology for Graduate Students.**

Fundamental concepts of physiology in the cardiovascular, pulmonary, renal, gastrointestinal and endocrine systems.

*Credit: 6 units*

**PHYSIO 203: Neuroscience for Graduate Students.**

Essential principles of Neurophysiology correlated with Neuroanatomy.

*Credit: 3 units, (32 hrs lec & demo.)*

**PHYSIO 204: Correlative Physiology.**

Integrated analysis of human physiological mechanisms.

*Credit: 2 units, (32 hrs didactic & demo.)*

*Prerequisite: Physio 202*

**PHYSIO 205: General Techniques in Physiology.**

Theory and practice of the basic laboratory methods and techniques needed for teaching undergraduate physiology.

*Credit: 2 units*

**PHYSIO 206: Special Techniques in Physiology.**

Theory and practice of special laboratory methods and techniques necessary for higher-level research in Physiology.

*Credit: 2 units*

**PHYSIO 206.1: Special Techniques in Cardiovascular Physiology**

Advanced experimental preparations and research techniques for cardiovascular system.

*Credit: 2 units*

**PHYSIO 206.2: Special Techniques in Endocrine Physiology.**

Advanced experimental preparations and research techniques for endocrine system.

*Credit: 2 units*

**PHYSIO 206.3: Special Techniques in Gastrointestinal Physiology.**

Advanced experimental preparations and research techniques for gastrointestinal system.

*Credit: 2 units*

**PHYSIO 206.4: Special Techniques in Neurophysiology.**

Advanced experimental preparations and research techniques for nervous system.

*Credit: 2 units*

**PHYSIO 206.5: Special Techniques in Renal Physiology.**

Advanced experimental preparations and research techniques for renal and body fluids system.

*Credit: 2 units*

**PHYSIO 206.7: Special Techniques in Pulmonary Physiology.**

*Credit: 2 units*

**PHYSIO 207: Developmental Physiology.**

Reading and discussion on different aspects of developmental physiology including fetal and neonatal physiology, physiology of puberty, pregnancy, climacterium and aging.

*Credit: 2 units, 32 hrs (lec)*

**PHYSIO 208: Comparative Physiology.**

The physiology of lower animals compared to man.

*Credit: 2 units, 32 hrs (lec)*

*Prerequisites: Physiology 202, 203 or consent of instructor*

**PHYSIO 211: Advanced Physiology.**

Theoretical and experimental analysis of physiological concepts.

*Credit units: 3 units*

*Prerequisites: Physiology 202, 203 or consent of instructor*

**PHYSIO 296: Directed Readings in Physiology.**

Reading and discussion of recent articles.

*Credit: 2 units (lec)*

**PHYSIO 297.1 and 297.2: Seminars in Physiology.**

Readings and discussions of classic and recent articles and publications.

*Credit: 2 units, 1 unit/ sem*

*Prerequisites: Physiology 202, 203 or consent of instructor*

**PHYSIO 298: Special Problems in Physiology.**

A specific research project undertaken with focus on a particular system to include experimental procedure, statistical analysis and discussion of results.

*Credit: 3 units*

**PHYSIO 298.1: Special Problems in Cardiovascular Physiology.**

Specific problems in the cardiovascular system.

*Credit: 2 units, (96 hrs lab, one/ sem)*

**PHYSIO 298.2: Special Problems in Endocrine Physiology.**

Specific problems in the endocrine system.

*Credit: 2 units, (96 hours lab, one /sem)*

**PHYSIO 298.3: Special Problems in Gastrointestinal Physiology.**

Specific problems in the gastrointestinal system.

*Credit: 2 units (96 hrs lab, one /sem)*

**PHYSIO 298.4: Special Problems in Neurophysiology.**

Specific problems in the nervous system.

*Credit: 2 units (96 hrs lab, one /sem)*

**PHYSIO 298.5: Special Problems in Renal Physiology.**

Specific problems in the renal and body fluids physiology.

*Credit: 2 units (96 hrs lab, one /sem)*

**PHYSIO 298.6: Special Problems in Pulmonary Physiology.**

Specific problems in the pulmonary system.

*Credit: 2 units (96 hrs lab, one /sem)*

**Physio 300: Thesis.**

*Credit: 6 units*

**Psych 207: Basic Course in Psychological Statistics.**

*Credit: 3 units*

**Psych 208: Introduction to Psychological Research Methods.**

*Credit: 3 units*

**RS 203: Education for Rehabilitation Science, Classroom Teaching.**

Study of learning theories and principles, instructional activities and methods of student evaluation relevant to the health professions in the classroom setting. Opportunity to observe, prepare for practice classroom teaching.

*Credit: 2 units (lec & lab)*

**RS 204: Education for Rehabilitation Science, Clinical Teaching.**

Study of various instructional activities and methods of student evaluation appropriate to the clinical setting therapists.

*Credit: 2 units*

**SOCIO 215: Medical Sociology.**

*Credit: 3 units*

**SP 232: Aural Rehabilitation in Children.**

Theoretical foundation, historical background and different approaches to aural rehabilitation in children.

*Credit: 3 units*

**SURG 270.1: Special Topics in General Surgery I.**

Presentation and discussion of a topic covering basic science, in general surgery.

*Credit: 1 unit*

**SURG 270.2: Special Topics in General Surgery II.**

Presentation and discussion of a topic covering diagnostic, operative, radiotherapeutic, oncologic and pediatric aspects in general surgery.

*Credit: 2 units*

**SURG 271.1: Special Topics in Colon and Rectal Surgery I.**

*Credit: 1 unit*

**SURG 271.2: Special Topics in Colon and Rectal Surgery II.**

*Credit: 2 units*

**SURG 272.1: Special Topics in Thoracic & Cardiovascular Surgery I.**

*Credit: 1 unit*

**SURG 272.2: Special Topics in Thoracic & Cardiovascular Surgery II.**

*Credit: 2 units*

**SURG 273.1: Special Topics in Urologic Surgery I.**

*Credit: 1 unit*

**SURG 273.2: Special Topics in Urologic Surgery II.**

*Credit: 2 units*

**SURG 274.1: Special Topics in Plastic and Reconstructive Surgery I.**

*Credit: 1 unit*

**SURG 274.2: Special Topics in Plastic and Reconstructive Surgery II**

*Credit: 2 units*

**SURG 275.1: Special Topics in Neurologic Surgery I.**

*Credit: 1 unit*

**SURG 275.2: Special Topics in Neurologic Surgery II.**

*Credit: 2 units*

**SURG 276.1: Special Topics in Pediatric Surgery I.**

*Credit: 1 unit*

**SURG 276.2: Special Topics in Pediatric Surgery II.**

*Credit: 2 units*

**SURG 298: Graduate Seminar I.**

Presentation and discussion of basic topics of general interest, related and pertaining to surgery, as well as current issues, contemporary concepts, controversies and advances in surgery.

*Credit: 1 unit*

**SURG 298.1: Special Topics in Surgery 1.**

*Credit: 1 unit*

**SURG 298.2: Special Topics in Surgery II.**

*Credit: 2 units*

**SURG 299. 1: Graduate Seminar II.**

Presentation and discussion of clinical topics of general interest, related and pertaining to surgery, as well as current issues, contemporary concepts, controversies and advances in surgery.

*Credit: 2 units*

**SURG 299.3: Research Seminar I.**

Presentation and discussion of relevant aspects of student's ongoing research.

*Credit: 1 unit*

**SURG 299.4: Research Seminar II.**

Presentation and discussion of problems of student's ongoing research.

*Credit: 2 units*

**SURG 300: THESIS.**

*Credit: 6 units*

Note: Some of the courses need cross registration with other units of the University:

All HE courses will cross register with NTTC

All EPI, BIO AND PHN courses will cross register with College of Public Health.

All RS and SP courses will cross register with CAMP.

All BNF courses will cross register with UP Manila College of Arts and Sciences.

All HI courses will cross register with UP Manila College of Medicine.

All Bioethics courses will cross register with UP Diliman College of Social Science andPhilosophy.

## UNDERGRADUATE PROGRAM

### THE INTARMED PROGRAM

**INTARMED** (INTEgrated Liberal Arts and MEDicine), is the seven-year program of the University of the Philippines College of Medicine (UPCM) which shortens the whole medical education by two years. It consists of two years of pre-medical courses (Learning Unit I – II), four years of regular medical studies (Learning Unit III – VI), and one year of clinical internship (Learning Unit VII). Students who enter Level I are considered direct entrants while students who enter Level III are considered lateral entrants.

The INTARMED Curriculum was approved by the Board of Regents of the University of the Philippines (UP) during its 951st Meeting held on April 26, 1982. Certain revisions including the details of implementation of the clinical years were finalized and approved by the UP Manila University Council on May 26, 1987. On April 17, 1986 the UP System adopted a General Education (GE) Program which resulted in the incorporation of the requirements into the first two years of the curriculum as approved on November 20, 1987 by the UP Manila University Council.

In 2002, the University approved a system-wide Revitalized GE Program. The GE courses provide a foundation in liberal education that will further enrich the first two years of the Intarmed Curriculum.

On April 21, 2003 the UP Manila University Council approved the full implementation of the integrated medical curriculum starting from Year Level III in AY 2004-2005, thus completely replacing the existing curriculum by AY 2008-2009.

#### Goal

The aim of this program is to develop, in the shorter span of seven years, physicians who have the scientific competence to practice Medicine and the social conscience to motivate them to continuously seek ways and means of improving medical service to all levels of Philippine society.

#### Identifiable Component Goals

1. Develop physicians whose knowledge and skills of medical science are equally matched by those of interpersonal relationships and social responsibilities;
2. Assist students to develop, early in their education, interests and perceptions of the medical profession;
3. Encourage students to acquire, through a liberal education, the following:
  - the ability to think critically and make logical and moral decisions;
  - the attitude of compassion and concern for others;
4. Produce physicians who are able to develop in many directions in medicine but who will possess the basic knowledge, skills and attitudes necessary for being a primary physician, capable of participating in comprehensive continuing care and working as a member of the health team.
5. Assist students to assume personal responsibility for their own education.

- an appreciation of their role in their community in the context of social and economic conditions;
- the ability to recognize their limitations to accept their achievements and failures with equanimity, growing and learning from each experience; and
- the ability to caution themselves against impulsiveness and at the same time act in times of crisis even with insufficiencies.

#### These goals are to be achieved by:

1. Continuously teaching the humanities throughout the seven years, with the faculty as model, to nurture the students' ethical, human, and social development;
2. Providing the students during the first two years in the Program with the academic competence necessary for the medical courses;
3. Using the methods of coordination, synchronization and integration in the teaching of courses within the same year level and at different year levels;
4. Developing as early as in the first year the clinical skills of students to enable them to render primary health services while they are still undergraduates; and
5. Incorporating internship in the undergraduate curriculum to ensure continuing medical education among the students and to make them acquire increasing levels of professional responsibilities.

### THE INTEGRATED MEDICAL CURRICULUM

#### I. Concept of the Organ Systems Integrated Curriculum (OSI)

An integrated curriculum is an organization of the vertical and horizontal contents of the traditional medical curriculum into coherent learning units that bring students beyond the level of mere acquisition of facts and concepts to a higher plane of scientific understanding and fluency. Students are given more opportunities to think creatively and to act appropriately when dealing with medical problems.

Operationally, organ systems integration refers to identifying clinically relevant concepts or skills that cut across the basic and clinical sciences, and using the organ systems as foci for learning. Horizontal integration involves the unification of disciplines traditionally learned within a year level that should lead to a more comprehensive understanding of a particular

cognitive area. Vertical integration, on the other hand, requires an interweaving of clinical skills and basic science knowledge starting from the early years so that learning of basic science concepts is continuous and reinforced in the clinical years. Curriculum integration can help the students cope with changes in knowledge and deal with outdated knowledge.

## II. Guidelines of the Integrated Curriculum

The medical curriculum is designed according to the following guidelines:

1. Horizontal synchronization (i.e., synchronization of the different subjects within each year level);
2. Vertical synchronization (i.e., sequencing of the different subjects such that a continuous approach is achieved from one year level to the next and culminating in an integrated approach during the clinical years);
3. Simple-to-complex progression in course content;
4. Problem-solving orientation in methodology whenever applicable;
5. Clinical orientation in the teaching of basic sciences;
6. Orientation towards basic sciences in the teaching of clinical subjects;
7. A more equitable distribution of subjects, both in number and hours per semester;
8. Early clinical exposure of students and assumption of increasing responsibility in patient care;
9. Rural community service during internship to make medical students more responsive to the needs of the community and better equipped medically to meet these needs;
10. Clinical clerkship in the fifth and sixth years;
11. Internship in the seventh year;
12. Provision of time for electives and self-study.

The Integrated Medical Curriculum consists of Learning Units that revolve around a meaningful theme in each year level. Community-oriented activities (in the form of Clinico-Community Integration sessions) and other integrative strategies are woven into the different learning units appropriately.

### LEARNING UNIT I: PREPARATORY MEDICINE I

#### First Semester

<i>Comm I &amp; II / Kom I &amp; II: Communication Skills/</i>	6
<i>Kasanayan sa Komunikasyon</i>	
<i>Hist I: Kasaysayan ng Pilipinas</i>	3
<i>Nat Sci II: Foundation of Earth Science and Biology</i>	3
<i>Math 17: Algebra &amp; Trigonometry</i>	5
<i>Philo I: Philosophical Analysis</i>	3
<i>IDC191: Introduction to Patient Care I</i>	(1.5)
<i>P.E. 1</i>	(2)
<i>NSTP</i>	(1.5)
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<b>TOTAL</b>	<b>20</b>

#### Second Semester

<i>Chem 14/14.1: General Chemistry / 4</i>	
<i>General Chemistry Laboratory</i>	
<i>Math 100: Introduction to Calculus</i>	4
<i>Bio 22: General Zoology</i>	5
<i>Soc Sci I: Foundations of Behavioral Science</i>	3
<i>Hum I / Humanidades I: Literature, Man &amp; Society / Tao, Panitikan at Lipunan</i>	3
<i>Hist 5: Kasaysayan ng Kalusugan</i>	3
<i>IDC192: Introduction to Patient Care II</i>	(1.5)
<i>P.E. 2</i>	(2)
	----
<b>TOTAL</b>	<b>22</b>

#### Summer

<i>Math 101: Elementary Statistics</i>	3
<i>P.I. 101: The Life and Works of Rizal</i>	3
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<b>TOTAL</b>	<b>6</b>

### LEARNING UNIT II: PREPARATORY MEDICINE II

#### First Semester

<i>Bio 25: Vertebrate Structure and Function</i>	5
<i>Chem 31: Elementary Organic Chemistry</i>	3
<i>Phys 51 &amp; Phys 51.1: General Physics I &amp; General Physics I Lab.</i>	4
<i>Hum II: Art, Man and Society</i>	3
<i>RGEP 1*: Arts &amp; Humanities Cluster</i>	3
<i>RGEP 3*: Math and Science Cluster</i>	3
<i>IDC193: Intro. to Patient Care III</i>	(3)
<i>P.E. 3</i>	(2)
	----
<b>TOTAL</b>	<b>21</b>

#### Second Semester

<i>Bio 30: Genetics &amp; Developmental Biology</i>	5
<i>Chem 40: Elementary Biochemistry</i>	3
<i>Phys 52 &amp; Phys 52.1: General Physics II &amp; General Physics II Lab.</i>	4
<i>STS: Science, Technology and Society</i>	3
<i>RGEP 2*: Social Science &amp; Philosophy Cluster</i>	3
<i>FCH 101: Health Care Delivery</i>	1.5
<i>IDC201: Perception &amp; Values in Medicine: History of Medicine</i>	1.5
<i>P.E. 4</i>	(2)
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<b>TOTAL</b>	<b>21</b>

\* Courses in the General Education Program (RGEP) offered by the University will apply.

**LEARNING UNIT III:  
HUMAN DEVELOPMENT, STRUCTURE, FUNCTION  
(First Year Medicine Proper)**

<b>Course</b>	<b>Hours</b>
HS201: Human Health and Wellness	40
OS 201: Human Cell Biology	120
OS 202: Human Body and Mind 1	136
OS 203: Human Body and Mind 2	104
OS 204: Human Body and Mind 3	72
OS 205: Human Body and Mind 4	144
OS 206: Human Body and Mind 5	142
HD201: Human Development 1	130
HD202: Human Development 2	120
IDC202: Art of Medicine 3	64
IDC211: Research Methods I (Intro. to Basic Health Research)	32
IDC211.1: Research Methods I (Lab. Research)	30
<b>TOTAL</b>	<b>1196</b>

**LEARNING UNIT IV:  
HUMAN PATHOPHYSIOLOGY AND THERAPEUTICS  
(Second Year Medicine Proper)**

<b>Course</b>	<b>Hours</b>
HS 202: Biopsychosocial Dimension of Illness	108
Ther 201: Pharmacologic Basis of Therapeutics	80
OS 211: Human Disease and Treatment 1	180
OS212: Human Disease and Treatment 2	180
OS 213: Human Disease and Treatment 3	216
OS 214: Human Disease and Treatment 4	180
IDC203: Art of Medicine 4	64
IDC212: Research Methods 2	16
Electives	32
<b>TOTAL</b>	<b>1308</b>

**Note: B.S. Basic Medical Sciences**

A baccalaureate degree in Basic Medicine is awarded to students who have satisfactorily completed LUs I to IV. This is given only to direct entrants of the 7-year Intarmed Program.

**LEARNING UNIT V:  
AMBULATORY MEDICINE  
(INTEGRATED CLINICAL CLERKSHIP I)  
(Third Year Medicine Proper)**

<b>Courses</b>	<b>Weeks</b>
OS 217: Human Disease and Treatment 7	2
Ther 202: Pharmacotherapeutics	2
Anesth 250: Integrated Clinical Clerkship I Anesthesiology	1
FCH 250.1: Integrated Clinical Clerkship in Family Medicine	2
FCH 250.2: Integrated Clinical Clerkship in Community Medicine	2
Integ 250: Integrated Clinical Clerkship in Dermatology	1
Med 250: Integrated Clinical Clerkship I in Medicine	3

Musc 250: Integ. Clinical Clerkship in the Musculoskeletal System	2
Neurosc 250: Integrated Clinical Clerkship I in Neurosciences	2
ObGyn 250: Integ. Clinical Clerk. I in Obstetrics and Gynecology	4
Ophtha 250: Integ. Clinical Clerkship I in Ophthalmology	1
ORL 250: Integrated Clinical Clerskship I in Otorhinolaryngology	1
Pedia 250: Integrated Clinical Clerkship I in Pediatrics	4
Radio 250: Integ. Clinical Clerskship I in Radiology and Nuclear Medicine	2
Surg 250: Integrated Clinical Clerkship I in Surgery	3
IDC 204: Art of Medicine 5	1
IDC 213: Research Methods	24 hrs
IDC 221: Mgt. in Health Care I	1
IDC 222: Mgt. in Health Care II	1
Electives	2
<b>TOTAL</b>	<b>37 wks + 24hrs</b>

**LEARNING UNIT VI: HOSPITAL BASED MEDICINE  
(INTEGRATED CLINICAL CLERKSHIP II)  
(Fourth Year Medicine Proper)**

<b>Courses</b>	<b>Weeks</b>
Anesth 251: Integrated Clinical Clerkship II in Anesthesiology	2
EM 251: Integrated Clinical Clerkship in Emergency Medicine	2
FCH 251: Integrated Clinical Clerkship in Family & Community Med.	4
Med 251: Integrated Clinical Clerkship II in Medicine	6
Neurosc 251: Integrated Clinical Clerkship II in Neurosciences	2
ObGyn 251: Integ. Clin. Clerkship II in Obstetrics and Gynecology	4
Ophtha 251: Integrated Clinical Clerkship II in Ophthalmology	2
ORL 251: Integ. Clinical Clerkship II in Otorhinolaryngology	2
ORL 251: Integrated Clinical Clerkship II in Otorhinolaryngology	2
Ortho 251: Integrated Clinical Clerkship in Orthopedics	2
Pedia 251: Integrated Clinical Clerskship II in Pediatrics	2
Rehab 251: Integrated Clinical Clerkship in Rehabilitation Medicine	2
Surg 251: Integrated Clinical Clerkship II in Surgery	4
IDC 205: Art of Medicine 6 (On Being a Physician)	64 hrs
Electives	4
<b>TOTAL</b>	<b>38wks + 64hrs</b>

**LEARNING UNIT VII:  
COMPREHENSIVE HEALTH CARE (INTERNSHIP)**  
*(Fifth Year Medicine Proper)*

<b>Track A: Regular Rotating Internship</b>	<b>Weeks</b>
<i>Anesth 260: Intern. in Anesthesiology</i>	1
<i>FCH 260.2: Internship in Community Medicine</i>	6
<i>Med 260: Internship in Medicine</i>	8
<i>Neurosc 260: Internship in Neurology and Psychiatry</i>	3
<i>ObGyn 260: Internship in Obstetrics and Gynecology</i>	8
<i>Ophtha 260: Intern. in Ophthalmology</i>	2
<i>ORL 260: Internship in Otorhinolaryngology</i>	2
<i>Ortho 260: Intern. in Orthopedics</i>	2
<i>Pedia 260: Internship in Pediatrics</i>	8
<i>Rehab 260: Internship in Rehabilitation Medicine</i>	2
<i>Surg 260: Internship in Surgery</i>	8
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<b>TOTAL</b>	<b>52</b>

<b>Track B: "Core Internship" + Electives</b>	<b>Weeks</b>
<i>FCH 260.1: Internship in Family and Community Medicine</i>	2
<i>FCH 260.2: Internship in Community Medicine</i>	6
<i>Med 260: Internship in Medicine</i>	8
<i>ObGyn 260: Internship in Obstetrics and Gynecology</i>	8
<i>Pedia 260: Internship in Pediatrics</i>	8
<i>Surg 260: Internship in Surgery</i>	8
<i>Electives</i>	12
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<b>TOTAL</b>	<b>52</b>

**Track C: Straight Internship**

SI 270 Straight Internship: *A qualified student has the option to choose from any of LU VII Straight Internship course offerings to complete 52 weeks. (with mandatory 8 weeks rotation in the community.)*

Abbreviations:

HD	- Human Development
OS	- Organ systems
IDC	- Interdisciplinary courses
HS	- Health Systems
Ther	- Therapeutics

**COURSES OFFERED**

**LEARNING UNIT I: PREPARATORY MEDICINE I**

**First Semester**

**Communication I: Communication Skills.**

The development of communicative competence, in English, with emphasis on reading, writing and listening skills.

*Credit: 3 units*

**Komunikasyon I: Kasanayan sa Komunikasyon.**

Paglinang sa kakayahang magpahayag sa wikang Pilipino na nakatuon sa mabisa at mapanuring pagbasa, pagsulat at pakikinig.

*Credit: 3 units*

**Communication II: Communication Skills.**

*Credit: 3 units*

*Prerequisite: Communication I*

**Komunikasyon II: Kasanayan sa Komunikasyon.**

Paglinang sa kasanayan ng paggamit ng wikang Filipino sa higit na mapanuring pag-iisip at mabisang pagbasa at pagsulat.

*Credit: 3 units*

*Prerequisite: Komunikasyon I*

**History I: Philippine History.**

The political, economic, social and cultural development of the Philippines.

*Credit: 3 units*

**History II: Asia and the World.**

A study of Asian cultural heritage in relation to world civilization.

*Credit: 3 units*

**Mathematics 17: Algebra and Trigonometry.**

Set and numbers; algebra and numbers as a logical system; inequalities; absolute values and coordinate systems; functions and graphs; circular, linear, quadratic, and polynomial functions; applications of the circular function to angles.

*Credit: 5 units*

**Philosophy I: Philosophical Analysis.**

Application of basic concepts, skills principles and logic knowledge drawn from Philosophy of Language, Symbolic Logic, Epistemology, Philosophy of Science and Ethics.

*Credit: 3 units*

**IDC 191: Introduction of Patient Care I: Self-Awareness.**

Group discussion to give students the experience of answering the question "Who am I" ultimately leading to the acknowledgement of one's personal worth as human being.

*Credit: 24 hours*

**Second Semester****Communication III: Speech Communication.**

Development of communicative competence in listening and speaking in various communication situations.

*Credit: 3 units*

*Prerequisite: Communication II*

**Komunikasyon III: Kasanayan sa Komunikasyon III.**

*Credit: 3 units*

*Prerequisite: Komunikasyon II*

**Social Science I: Foundation of Behavioral Sciences.**

A survey of basic concepts, principles, theories and methods of behavioral sciences.

*Credit: 3 units*

**Chemistry 14/14.1: Fundamentals of General Chemistry I/ Laboratory.**

Qualitative quantum mechanical description of the atomic, ionic and molecular structure of matter, theoretical and practical treatment of chemical and nuclear reactions; property-structure correlation of solids, liquids and gases; nature of properties of colloids and solutions; general concepts of acids and bases.

*Credit: 4 units (3 lec, 1 lab)*

*Prerequisite: Math II*

**Zoology 10: General Zoology.**

Basic aspects and principles of zoology.

*Credit: 5 units*

**Math 100: Introduction to Calculus.**

Limits, Derivatives, Integrals, and Applications.

*Credit: 4 units*

*Prerequisite: Math 17 or consent of instructor*

**Natural Science II: Foundation of Natural Science II.**

Fundamental concepts, principles and theories of earth and life sciences.

*Credit: 3 units*

*Prerequisite: Natural Science I*

**IDC 192: Introduction to Patient Care II: Awareness of Others.**

Group dynamics to help students come to the realization that the “other” is very much alike “self” thus focusing on the need for respect and responsibility, to others in patient care.

*Credit: 24 hours*

**Summer****Mathematics 101: Elementary Statistics.**

Co-presentation of data, frequency distribution, central tendencies, index numbers, dispersion, normal curve, poison curve, correlations, sampling distribution, and element of statistical inference.

*Credit: 3 units*

*Prerequisite: Math 17*

**P.I. 100: The Life and Works of Jose Rizal.**

The significance of the life and writings of Dr. Jose Rizal in the life of the Filipino people.

*Credit: 3 units*

**LEARNING UNIT II: PREPARATORY MEDICINE II****First Semester****Zoology 20: Anatomy and Physiology of Vertebrates.**

Analysis of the forms and functions of various vertebrate organ systems (with emphasis on mammalian system) from the phylogenetics point of view.

*Credit: 5 units*

**Physics 51/51.1: General Physics I/ Laboratory.**

Introduction to mechanics, heat and thermodynamics.

*Credit: 4 units*

*Prerequisite: Math 17 or its equivalent*

**Humanities I: Literature, Man and Society.**

A study of various literary genres as the imaginative expression of the individual writer’s experience and the society’s values and ideals.

*Credit: 3 units*

*Prerequisite: Communication II*

**Humanities II: Art, Man and Society.**

A study of the visual art and music as a product of the imagination in dynamic interaction with the society.

*Credit: 3 units*

**Social Science II: Social, Economic and Political Thought.**

A survey of social, economic and political thinkers from the classical to contemporary periods.

*Credit: 3 units*

**Chemistry 31: Elementary Organic Chemistry.**

*Credit: 3 units*

**IDC 193: Introduction to Patient Care III: Psychodynamics of Doctor-Patient Relationship.**

Lectures, demonstrations, group discussions to develop the students’ interviewing skills with the emphasis on certain issues on doctor-patient relationship.

*Credit: 24 hours*

**Second Semester****STS: Science, Technology and Society.**

The analysis from historical and futuristic perspectives of the nature and role of science and technology in society and of the socio-cultural and politico-economic factors affecting the development of science and technology with emphasis on Philippine setting.

*Credit: 3 units*

*Prerequisite: Natural Science I & II, GE Math (or its equivalent) and junior standing.*

**Zoology 30: Genetics and Developmental Biology.**

Nature of genetic material as expressed in the development of the organism with emphasis on factors leading to maldevelopment.

*Credit: 5 units*

**Chemistry 40: Elementary Biochemistry.**

The chemistry of food and nutrition.

*Credit: 3 units*

**Physics 52/52.1: General Physics II/ Laboratory.**

Introduction to waves, optics and electromagnetism and modern physics.

*Credit: 4 units*

**Humanities 103: Image of Man in the Arts II.**

A comparative and thematic study of Eastern and Western ideas and images of man as revealed through the arts particularly as they have a bearing on man's relationship, attitudes and actions towards himself, other man and nature.

*Credit: 3 units*

**FCH 101: Health Care Delivery.**

Introduction to the health care delivery system; the consumer, the doctor and the government.

*Credit: 24 hours*

**IDC 201: Perceptions and Values in Medicine I: History of Medicine.**

History of medicine with emphasis on the development of progress of Philippine medicine.

*Credit: 24 hours*

**LEARNING UNIT III:****HUMAN DEVELOPMENT, STRUCTURE, FUNCTION****HD 201: Human Development 1 (Human Ontogeny and Parturition).**

Embryonic and fetal development, i.e., fertilization, implantation, maternal adaptation including the physiology of labor, delivery and the puerperium.

*Credit: 130 hrs*

**HD 202: Human Development 2 (Human Physical and Psychosocial Development).**

Biological, psychosocial, social changes and adaptations during the life span with emphasis on neonatal, childhood, adolescent and adult periods, aging and the dying process.

*Credit: 120 hrs*

**HS 201: Human Health and Wellness.**

Concepts of health and wellness, health promotion in a biopsychosocial framework, including family structure and functions, family life cycle and community organization, basic epidemiology and biostatistics.

*Credit: 40 hrs.*

**IDC 202: Art of Medicine 3 – The Making of a Physician.**

The development of self-awareness, teaching-learning skills, communicating skills, and interviewing skills and the clarification of one's personal values towards becoming a caring, compassionate, ethical physician attuned not just to the disease but to the person as a whole.

*Credit: 64 hrs.*

**IDC 211: Research Methods 1 (Introduction to Basic Health Research).**

Introduction to the research process to include literature search, development of research proposals, and introduction to medical informatics, with emphasis on developing computer literacy skills and the proper attitudes and values.

**IDC 211.1: Research Methods 1 (Laboratory Research).**

Opportunity to do laboratory based research in a specific discipline in the basic sciences.

*Credit: 90 hrs.*

**OS 201: Human Cell Biology.**

Molecular basis of cellular processes with emphasis on structure-function relationship.

*Credit: 120 hrs*

**OS 202: Human Body and Mind 1 (Integration and Control Systems) (Structure and Function).**

Integration of structure and function of the nervous and endocrine systems at the gross, microscopic and molecular levels, correlated with physical, neurological and psychosocial examination, and principles of imaging of these systems.

*Credit: 136 hrs.*

**OS 203: Human Body and Mind 2 (Skin, Muscles & Bones) (Structure and Function).**

Integration of structure and function of the skin, muscles and bones at the gross, microscopic and molecular levels, correlated with the physical examination and imaging of these structures.

*Credit: 104 hrs.*

**OS 204: Human Body and Mind 3 (Head and Thorax) (Correlative Structure and Function).**

Integration of structure and function of the head and neck regions at the gross, microscopic and molecular levels, correlated with the physical examination and imaging of these regions.

*Credit: 72 hrs.*

**OS 205: Human Body and Mind 4 (Thorax)(Structure and Function).**

Integration of structure and function of the pulmonary and cardiovascular systems including the breast and the chest wall at the gross, microscopic and molecular levels, correlated with the physical examination and imaging of these structures in the thoracic region.

*Credit: 144 hrs.*

**OS 206: Human Body and Mind 5 (Abdomen and Pelvis) (Structure and Function).**

Integration of structure and function of the gastrointestinal and genitourinary systems at the gross, microscopic and molecular levels, correlated with the physical examination and imaging of the pelvis and abdominal regions.

**LEARNING UNIT IV:****HUMAN PATHOPHYSIOLOGY AND THERAPEUTICS****HS 202: Biopsychosocial Dimension of Illness.**

Description of the Philippine health situation and health system, maintenance of homeostasis, disease classification and causation including environmental, work-related and occupational factors, reactions to disease agents, impact of illness on individuals, the community, society and disease prevention.

*Credit: 108 hrs.*

**IDC 203: Art of Medicine 4: The Patient and Illness.**

The development of a caring, compassionate, ethical physician, respectful of patient's rights, attuned to the treatment not just of the illness, but of the person behind the illness.

*Credit: 64 hrs.*

**IDC 212: Research Methods 2 (Introduction to Clinical Epidemiology).**

Definition and elements of clinical epidemiology, basic principles, uses of clinical epidemiology.

*Credit: 16 hrs*

**OS 211: Human Disease and Treatment 1 (Integration, Coordination and Behavior).**

Pathophysiology, symptomatology, diagnosis, prevention and principles of treatment of diseases of the Nervous System.

*Credit: 180 hrs.*

**OS 212: Human Disease and Treatment 2 (Locomotion and Sensation)**

Pathophysiology, symptomatology, diagnosis, prevention and principles of treatment of diseases of the Musculoskeletal, Sensory and Integumentary Systems.

*Credit: 180 hrs.*

**OS 213: Human Disease and Treatment 3 (Circulation and Respiration).**

Pathophysiology, symptomatology, diagnosis, prevention and principles of treatment of diseases of the Cardiovascular and Pulmonary Systems.

*Credit: 216 hrs.*

**OS 214: Human Disease and Treatment 4 (Digestion and Excretion).**

Pathophysiology, symptomatology, diagnosis, prevention and principles of treatment of diseases of the Digestive and Excretory Systems.

*Credit: 180 hrs.*

**OS 215: Human Disease and Treatment 5 (Reproduction and Hormonal Regulation).**

Pathophysiology, symptomatology, diagnosis, prevention and principles of treatment of diseases of the Reproductive and Endocrine Systems.

*Credit: 180 hrs.*

**OS 216: Human Disease and Treatment 6 (Hematopoiesis and The Immune Response).**

Pathophysiology, symptomatology, diagnosis, prevention and principles of treatment of diseases of the Hematopoietic and Immune Systems.

*Credit: 72 hrs.*

**IDC 212: Research Methods II (Introduction to Clinical Epidemiology).**

Definition and elements of clinical epidemiology, basic principles, uses of clinical epidemiology.

*Credit: 16 hrs.*

**THER 201: Pharmacologic Basis of Therapeutics.**

Basic principles of pharmacodynamics and pharmacokinetics in physiological and pathological states.

*Credit: 80 hrs.*

**Electives****Anesth 220: Anesthesiology in Action.**

Supervised exposure to the practice of Anesthesiology

*Credit: 32 hrs.*

*No. of students: 6*

**Biochem 210: Biochemical Basis of Genetics.**

The molecular biology of the gene, the replication, expression and control of genetic material.

*Credit: 16 hrs.*

*No. of students: 10*

**Biochem 297: Seminars in Biochemical Literature.**

The course consists of a critical evaluation of scientific literature and the presentation of a research proposal in a public seminar.

*Credit: 32 hrs.*

*No. of students: 10*

**FCH 216: Philippine Health Issues, Programs and Policy 1.**

Introduction to concepts, trends and issues in health and development.

*Credit: 32 hrs.*

*No. of students: 20*

**Med 220.1: Basic and Clinical Cardiology Elective.**

Introduction to basic cardiac diagnostic tools and cardiac physical examination.

*Credit: 32 hrs.*

*No. of students: 20*

**MedInfo 220: Introduction to Medical Informatics.**

Basic concepts and principles in medical informatics.

*Credit: 32 hrs.*

*No. of students: 20*

**Neurosc 220: Seminars in Neurosciences.**

Critical evaluation of scientific literature in the Neurosciences.

*Credit: 16 hrs*

*No. of students: 10*

**ORL 220: Basic and Clinical Introduction to Hearing and Balance.**

Introduction to the clinical anatomy and physiology of hearing and balance.

*Credit: 32 hrs.*

*No. of students: 4*

**Patho 220: Introduction to Laboratory Medicine.**

Theory and practice of basic laboratory methods in medicine with emphasis on clinical correlation.

*Credit: 32 hrs.*

*No. of students: 20*

**Patho 221: Forensic Pathology.**

Introduction to the theory and practice of forensic pathology with exposure to death investigation.

*Credit: 32 hrs.*

*No. of students: 20*

**Pharma 221: Pharmacology of Disease Processes.**

Endogenous chemicals and/or drugs involved in pathologic processes that lead to targets for drug action.

*Credit: 32 hrs.*

*No. of students: 10*

**Physio 296: Directed Readings in Physiology.**

Reading and discussion of recent articles.

*Credit: 32 hrs.*

*No. of students: 8*

**Psych 220: Interventions in Psychiatry I-Group Process.**

Hands on experience in the actual conduct of group process; facilitating, conducting group therapy including critical incident stress debriefing.

*Credit: 32 hrs.*

*No. of students: 12*

**Radio 220: Radiologic Correlations of Human Pathophysiology.**

Correlation of physiologic phenomena with radiologic modalities in common pathologic processes.

*Credit: 32 hrs.*

*No. of students: 8*

**LEARNING UNIT V: AMBULATORY MEDICINE****OS 217: Human Disease and Treatment 7 (Systemic Disease).**

Pathophysiology, symptomatology, diagnosis, prevention and principles of treatment of common and locally relevant infections, malignancies, and traumatic conditions.

*Credit: 4 wks*

**Ther 202: Pharmacotherapeutics.**

Application of concepts and principles of pharmacology and evidence based medicine (EBM) to arrive at a therapeutic decision for common diseases in the ambulatory setting.

*Credit: 2 wks*

**Anesth 250: Integrated Clinical Clerkship I Anesthesiology.**

Supervised assessment and management of patients in the Pain Clinic.

*Credit: 1 wk*

**FCH 250.1: Integrated Clinical Clerkship in Family Medicine.**

Evaluation and management of commonly encountered medical conditions in family medicine practice.

*Credit: 2 wks*

**FCH 250.2: Integrated Clinical Clerkship in Community Medicine.**

Participation in the evaluation of a priority community health issue and development and implementation of a relevant health action.

*Credit: 2 wks*

**Integ 250: Integrated Clinical Clerkship in Dermatology.**

Supervised participation in the diagnostic evaluation and management of pediatric and adult patients with dermatologic patients.

*Credit: 1 wk*

**Med 250: Integrated Clinical Clerkship I in Medicine.**

Rotation in the general and selected subspecialty clinics with supervised participation in the diagnosis, management and prevention of commonly encountered medical problems.

*Credit: 3 wks*

**Musc 250: Integrated Clinical Clerkship in the Musculoskeletal System.**

Rotation in the Orthopedics, Rehabilitation Medicine and Rheumatology Clinics with supervised participation in the diagnosis, management and prevention of common musculoskeletal conditions emphasizing the interdisciplinary approach.

*Credit: 2 wks*

**Neurosc 250: Integrated Clinical Clerkship I in Neurosciences.**

Rotation in Neurology, Neurosurgery and Psychiatry outpatient clinics to diagnose and manage neurologic and psychiatric disorders.

*Credit: 2 wks*

**Ob-Gyn 250: Integrated Clinical Clerkship I in Obstetrics and Gynecology.**

Rotation in the general and subspecialty clinics with supervised participation in the diagnosis and management of commonly encountered reproductive health conditions.

*Credit: 4 wks*

**Ophtha 250: Integrated Clinical Clerkship I in Ophthalmology.**

Rotation in the outpatient clinics with supervised and active participation in the diagnosis and management of common eye disorders.

*Credit: 1 wk*

**ORL 250: Integrated Clinical Clerkship I in Otorhinolaryngology.**

Application of concepts in the diagnosis and management of common diseases of the ear, nose, throat, head and neck seen in the ambulatory setting with emphasis on disease prevention and health promotion.

*Credit: 1 wk*

**Pedia 250: Integrated Clinical Clerkship I in Pediatrics.**

Rotations in the Well-Child, Sick-Child and Adolescent Clinics with supervised participation in the diagnosis, management and prevention of commonly encountered problems in the ambulatory care setting.

*Credit: 4 wks*

**Radio 250: Integrated Clinical Clerkship I in Radiology and Nuclear Medicine.**

Integration of radiologic and nuclear imaging in the diagnosis of common diseases.

*Credit: 2 wks*

**Surg 250: Integrated Clinical Clerkship I in Surgery.**

Rotation in the general and minor surgery clinics with supervised participation in the diagnosis, treatment and prevention of common general surgical conditions.

*Credit: 3 wks*

**IDC 204: Art of Medicine 5 (Holistic Medicine).**

Continuing awareness and tracking of self growth in an individual and a health team context while on their clinical rotations; familiarization and awareness of integrative, complementary and alternative forms of health care.

*Credit: 1 wk*

**IDC 213: Research Methods (Introduction to Evidence Based Medicine).**

Introduction to the concept of critical appraisal of the medical literature and application of the research findings to clinical decision making.

*Credit: 24 hrs*

**IDC 221: Management in Health Care I.**

Concepts and performance of management functions particularly decision making, organizing, planning, and controlling-with emphasis on effective leadership as well as ethical management practices.

*Credit: 1 wk*

**IDC 222: Management in Health Care II.**

Health care delivery systems and their management, including health care financing and hospital administration principles.

*Credit: 1 wk*

**Clinical Electives****FCH 225: Philippine Health Issues, Programs and Policy II.**

Overview of analysis and development of programs and policies on relevant Philippine health issues.

*Credit: 2 wks*

*No. of students: 5*

**FCH 226: Introduction to Traditional and Integrative Medicine.**

Introduction to philosophy, models, concepts and skills in traditional, alternative and integrative medicine, including acupuncture, meditation and other body-mind techniques.

*Credit: 2 wks*

*No. of students: 10*

**Med 250.1: Ambulatory Clinical Cardiology.**

Supervised exposure to patients seen at the outpatient department and hospital wards in order to enhance clinical skills in the management of common cardiovascular diseases.

*Credit: 1 wk*

*No. of students: 5*

**Med 293.1: Laboratory in Microbiology: Short Course.**

Orientation on the basic microbiological procedures in diagnostic microbiology, excluding mycobacteriology, through laboratory bench work and didactic lectures.

*Credit: 2 wks*

*No. of students: 1/rotation x 2 wks (June, July, Aug only)*

**Med 293.2: Overview of Diagnostic Modalities in Pulmonary Medicine.**

Overview of diagnostic modalities in pulmonary medicine including their indications and contraindications, interpretation and actual performance of the tests.

*Credit: 2 wks*

*No. of Students: 1*

**Neurosc 221: Directed Readings in Neurosciences.**

Reading and discussion of recent articles in the basic and clinical neurosciences.

*Credit: 1 wk*

*No. of students: 2*

**Ob Gyn 250.1: Reproductive Health in the Community.**

Introduction to the integrated reproductive health management in the community with opportunities to identify a research problem, critically appraised literature, formulate research question and objectives, prepare a research protocol, collect data, analyze and write a scientific paper as this relate to the practice of reproductive health.

*Credit: 2 wks*

*Number of students: 2*

**ORL 221: Basic and Clinical Introduction to Phonology.**

Introduction to the clinical anatomy and physiology of the airway and voice through actual clinical exposure in the videostroboscopy unit, with correlative study of anatomic models and dissected larynges.

*Credit: 1 wk*

*No. of students: 4*

**Pedia 250.1: Clinical Elective in Ambulatory Pediatrics.**

Introduction to the Integrated Management of Childhood Illness (IMCI) to improve practices in the health system and the home.

*Credit: 2 wks*

*Number of students:*

**Pharma 253.1: Guide to Good Prescribing Part.**

Formulation of a personal drug list for virtual patients using the concepts and principles of rational drug use in the management of common morbidities in the Philippines.

*Credit: 2 wks*

*No. of students: 10*

**Pharma 254: Ethnopharmacology.**

Documentation of the use of the medicinal plants and other indigenous products by a particular Philippine ethnolinguistic group.

*Credit: 2 wks*

*No. of students: 2/rotation*

**Physio 298: Special Problems in Physiology.**

A specific research project to be undertaken with focus on a particular system to include literature search, hypothesis formulation, experimental procedure, statistical analysis and discussion of results.

*Credit: 2 wks*

*No. of students: 2*

**Psych 221: Interventions in Psychiatry II – Medically III Ambulatory Care.**

Active participation in the assessment, management and supportive care of ambulatory medically ill patients with psychiatric problems.

*Credit: 2 wks*

*No. of students: 2/week*

**Radio 293: Imaging in Ambulatory Care.**

Basic competencies in radiation protection and diagnostic work-ups.

*Credit: 2 wks*

*No. of students: 4 at any one time*

**LEARNING UNIT VI: HOSPITAL BASED MEDICINE****Anesth 251: Integrated Clinical Clerkship II in Anesthesiology.**

Basic competencies in anesthesia and analgesia with supervised participation in the administration of general and regional anesthesia, sedation and airway management.

*Credit: 2 wks*

**EM 251: Integrated Clinical Clerkship in Emergency Medicine.**

Principles of general assessment skills for the undifferentiated emergency patient, life saving and resuscitation skills, injury prevention and disease identification, emergency medical care, toxicology and management of the emergency health care system.

*Credit: 2 wks*

**FCH 251: Integrated Clinical Clerkship in Family and Community Medicine.**

Clinical practice in Primary and Family Based Health Care involving various types of illness affecting patients in the hospital and community setting.

*Credit: 4 wks*

*Prerequisite: FCH 250.1/FCH 250.2*

**Med 251: Integrated Clinical Clerkship II in Medicine.**

Comprehensive training in the clinical management of common and important medical diseases in a hospital setting that may require ward or critical care unit admission with focus on diagnosis, treatment, prevention and control.

*Credit: 6 wks*

**Neurosc 251: Integrated Clinical Clerkship II in Neurosciences.**

Participation patient care to enhance integration of basic neurologic and psychiatric knowledge and acquisition of fundamental technical skills in the diagnosis and treatment of common neurologic, neurosurgical and psychiatric disorders in the hospital setting.

*Credit: 2 wks*

**ObGyn 251: Integrated Clinical Clerkship II in Obstetrics and Gynecology.**

Supervised training to enhance integration of basic concepts of care and refinement of clinical skills related to high risk pregnant and critically ill patients in the hospital setting.

*Credit: 4 wks*

**Ophtha 251: Integrated Clinical Clerkship II in Ophthalmology.**

Rotation in the Wards, Emergency Room and Operating Room with supervised participation in the diagnosis and management of eye diseases seen in the hospital setting with supplemental out-patient rotation.

*Credit: 2 wks*

**ORL 251: Integrated Clinical Clerkship II in Otorhinolaryngology.**

Supervised participation in the diagnosis, management and rehabilitation of common diseases of the ear, nose, throat, head and neck.

*Credit: 2 wks*

**Ortho 251: Integrated Clinical Clerkship in Orthopedics.**

Rotation in the Orthopedics in-patient ward, emergency room, operating room, and outpatient department with supervised participation in the diagnosis, evaluation, and management of orthopedic diseases, injuries, and conditions common in the hospital setting.

*Credit: 2 wks*

**Pedia 251: Integrated Clinical Clerkship II in Pediatrics.**

Participatory care to enhance integration of basic pediatric knowledge and acquisition of fundamental skills related to promotion of health, diagnosis and treatment of commonly encountered pediatric disorders in an in-patient setting with community orientation.

*Credit: 2 wks*

**Rehab 251: Integrated Clinical Clerkship in Rehabilitation Medicine.**

Participatory patient care integrating the philosophy and principles of rehabilitation medicine in the evaluation, goal-setting and management of in-patients with common disabling conditions.

*Credit: 2 wks*

**Surg 251: Integrated Clinical Clerkship II in Surgery.**

Supervised participatory in-patient care in General and Specialty Surgery.

*Credit: 4 wks*

**IDC 205: Art of Medicine 6 (On Being a Physician).**

Discussions on the roles, rights, responsibilities and liabilities of a physician as well as making a career choice in the medical profession.

*Credit: 64 hrs.*

**Research/Clinical Electives****Pharma 253.2: Guide to Good Prescribing Part 2.**

Critical appraisal in individualized patient care using the concept of rational drug use in a team approach, correlating economic and socio-cultural factors for decision making.

*Credit: 4 wks*

*No. of students: 5*

**Biochem 291: Research Elective in Biochemistry.**

Scientific investigation of the biochemical aspects of a clinical problem.

*Credit: 4 wks*

*No. of students: 3*

**CE 291: Research Elective in Clinical Epidemiology.**

Scientific study with opportunities to identify a research problem, critically appraise literature, formulate research questions and objectives, prepare a research protocol, collect data, analyze and write a scientific paper.

*Credit: 4 wks*

*No. of students: 6*

**FCH 291: Evidence Based Medicine Research.**

Formulation of a clinical practice guideline or the conduct of a research for use in primary care.

*Credit: 4 wks*

*No. of students: 5*

**Med 291: Research Elective in Medicine.**

Scientific studies with opportunities to understand, appreciate and participate in research design, methods and evaluation as these relate to the practice of Clinical Medicine.

*Credit: 4 wks*

*No. of students: 5*

**Med 291.1: Research Elective in Pulmonary Medicine.**

Scientific studies with opportunities to understand, appreciate and participate in research design, methods and evaluation as these relate to the practice of pulmonary medicine.

*Credit: 4 wks*

*No. of students: 0*

**Med 291.2: Research Elective in Oncology.**

Scientific studies with opportunities to understand, appreciate and participate in research design, methods and evaluation as these relate to the practice of oncology.

*Credit: 4 wks*

*No. of students: 1*

**Med 292: Clinical Elective in Medicine.**

Clinical rotation in internal medicine or any of its subspecialties aimed at providing an in-depth appreciation of disease states, clinical decision-making and patient care.

*Credit: 4 wks*

*No. of students: 10*

**Neurosc 291: Research Elective in Neuroscience I.**

Scientific studies, basic or applied, including research design, review of literature and research writing in the Neurosciences.

*Credit: 4 wks*

*No. of students: 2*

**Ob Gyn 291: Research Elective in Obstetrics and Gynecology I.**

Scientific studies in basic applied Obstetrics and Gynecology and its subspecialties.

*Credit: 4 wks*

*No. of students: 4*

**Ophtha 291: Research Elective in Ophthalmology.**

Scientific studies, research design, review of literature, bibliography, data gathering and writing a research in Ophthalmology.

*Credit: 4 wks*

*No. of students: 0*

**ORL 291: Research Elective in Otorhinolaryngology.**

Basic and/or applied research in the field of Otorhinolaryngology-head and neck surgery.

*Credit: 4 wks*

*No. of students: 4*

**Ortho 291: Research Elective in Orthopedics.**

Participation in orthopedic research with emphasis on research design and methodology.

*Credit: 4 wks*

*No. of students: 2*

**Para 291: Research Elective in Parasitology.**

Basic or applied research in medical parasitology, field or laboratory-based.

*Credit: 4 wks*

*No. of students: 14*

**Patho 291: Research Elective in Pathology.**

Application of basic knowledge in Pathology to research problems using materials obtained from autopsy studies, surgical pathology, and clinical laboratory.

*Credit: 4 wks*

*No. of students: 4*

**Pharma 291: Research Elective in Pharmacology.**

Scientific investigation on problems involving drug development, safe and effective use of drugs in the community using either experimental or observational designs.

*Credit: 4 wks*

*No. of students: 2*

**Physio 291: Research Elective in Physiology.**

Scientific study, basic or applied in physiology.

*Credit: 4 wks*

*No. of students: 5 students/organ system*

**Surg 291: Research Elective in Surgery.**

Scientific studies, basic or applied, in any of the surgical subspecialties.

*Credit: 4 wks*

*No. of students: 20*

**Anesth 292: Clinical Elective in Anesthesiology I.**

Participative care in any of the 3 modules: Airway Module, Pain Management Module and Subspecialty Module.

*Credit: 4 wks*

*No. of students: 8*

**EM 292: Clinical Elective in Emergency Medicine.**

Recognition and initial management of emergent, urgent and non-urgent problems of patients in the Emergency Department with emphasis on team approach.

*Credit: 2 wks*

*No. of students: 10*

**EM 292.1: Clinical Elective in Emergency Medical Services.**

Introduction to concepts of pre-hospital medicine and multiple casualty management.

*Credit: 2 wks*

*No. of Students: 10*

**FCH 292: Clinical Elective in Family Medicine (Practice Management).**

Preceptorship with selected Family physicians in the community, industry and in the school, to provide students with knowledge and skills in various settings.

*Credit: 4 wks*

*No. of students: 6*

**FCH 292.1: Clinical Elective in Traditional & Integrative Medicine.**

Integration of traditional and complementary healing modalities to patient management in community clinics and the Traditional Medicine clinic in PGH.

*Credit: 4 wks*

*No. of Students: 12*

**FCH 292.2: Clinical Elective in Counseling Skills for Primary Care.**

Basic skills in communication and active listening as applied in the primary care setting.

*Credit: 4 wks*

*No. of students: 6*

**Integ 292: Clinical Elective in Integumentary System 1.**

Recognition and management of cutaneous manifestations of systemic diseases in children and adults in the hospital setting.

*Credit: 2 wks*

*No. of students: 2*

**Neurosc 292: Clinical Elective in Neuroscience.**

Additional clerkship rotation in Neurosciences with emphasis on the proper approach, diagnosis and treatment of common neurologic emergencies.

*Credit: 4 wks*

*No. of students: 10*

**Ob- Gyn 292: Clinical Elective in Obstetrics and Gynecology I.**

Additional clerkship rotation in Obstetrics and Gynecology and any of its subspecialties.

*Credit: 4 wks*

*No. of students: 4*

**Ophtha 292: Clinical Elective in Ophthalmology.**

Additional rotation in the subspecialties with emphasis on the recognition of pertinent clinical signs and symptoms.

*Credit: 4 wks*

*No. of students: 2*

**ORL 292: Clinical Elective in Otorhinolaryngology.**

Clinical experience in the field of Otorhinolaryngology-Head and Neck surgery with opportunities to assist in patient management and perform advanced procedures.

*Credit: 4 wks*

*No. of students: 4*

**Patho 292: Clinical Elective in Pathology I.**

Opportunity to perform procedures in anatomic or clinical pathology.

*Credit: 4 wks*

*No. of students: 4*

**Pedia 292: Clinical Elective in Pediatrics I.**

A choice of participatory patient care to enhance integration and acquisition of fundamental technical skills related to promotion of health, diagnosis, and treatment of commonly encountered pediatric diseases, or self-directed learning (SDL) using a learning contract.

*Credit: 4 wks*

*No. of students: 36 (No. of slots for SDL in participatory patient care dependent on availability of preceptor)*

**Pharma 292: Clinical Elective in Pharmacology.**

Opportunity of studying drugs, its use, safety, and efficacy, taking into consideration major areas of concern like effects of pharmaceutical detailing and medication errors.

*Credit: 4 wks*

*No. of students: 2*

**Psych 292: Clinical Elective in Psychiatry.**

Biopsychosocial approach to patient care focusing on the doctor-patient relationship and evaluation of personal role in the healing process.

*Credit: 2 wks*

*No. of students: 2/week*

**Radio 292: Introduction to Interventional Radiology, Radiation Oncology and Nuclear Medicine.**

Focus on interventional radiology, radiation oncology and nuclear medicine.

*Credit: 4 wks*

*No. of students: 4 at any one time*

**Surg 292: Clinical Elective in Surgery I.**

Additional participatory in-patient care in a surgical subspecialty of his choice.

*Credit: 4 wks*

*No. of students: 30*

**Med 293.2: Overview of Diagnostic Modalities in Pulmonary Medicine.**

Overview of diagnostic modalities in pulmonary medicine including their indications and contraindications, interpretation and actual performance of the tests.

*Credit: 4 wks*

*No. of student: 0*

**Med 293.3: Laboratory in Microbiology.**

Orientation on the basic procedures in diagnostic microbiology including mycobacteriology through bench work and didactic lectures.

*Credit: 4 wks*

*No. of students: 1/rotation x 2 weeks (Sept, Oct, Nov only)*

**FCH 294: Philippine Health Issues Programs and Policy III.**

Participation in the analysis and development of programs and policies on relevant Philippine Health Issues.

*Credit: 4 wks*

*No. of students: 5*

**FCH 294.1: NGO Partnership in Health.**

Participation in activities of health based non-government organization.

*Credit: 4 wks*

*No. of students: 5*

**FCH 294.2: Community Health Management.**

Analysis and application of management principles in the administration of community based programs.

*Credit: 2 wks*

*No. of students: 0*

**FCH 294.3: Family Wellness in the Community Setting.**

Promotion of wellness and health lifestyles among families included in the Urban Health Program.

*Credit: 4 wks*

*No. of students: 5*

**Med 294: Clinical Preceptorship in Community-based Practice of Infectious Diseases.**

Participation in the private practice of a physician in the community setting with emphasis on infectious diseases.

*Credit: 4 wks*

*No. of student: 0*

**Pharma 294: Community Pharmacology.**

Understanding of particular problems/issues on the use of medicines in the household or community.

*Credit: 4 wks*

*No. of students: 2/rotation*

**Physio 211.1: Advanced Physiology.**

Theoretical experimental analysis of physiologic concepts.

*Credit: 2 wks*

*No. of students: 2*

**Physio 297.1: Seminars in Physiology I.**

Presentation of a physiologic concept in a public seminar.

*Credit: 16 hrs.*

*No. of students: 2*

**Physio 297.2: Seminars in Physiology 2.**

Presentation of an advanced physiologic concept in a public seminar.

*Credit: 16 hours*

*No. of students: 3*

**Psych 294: Interventions in Psychiatry III.**

Psychosocial interventions for special populations at risk.

*Credit: 16 hours per semester*

*No. of students: 1/week*

**Rehab 292: Clinical Elective in Rehabilitation Medicine I.**

An additional course of participatory patient care designed to enhance the integration of rehabilitation medicine principles in the out-patient and community setting.

*Credit: 2 weeks*

*No. of students: 4*

## LEARNING UNIT VII: COMPREHENSIVE HEALTH CARE

**TRACK A – (Regular Internship)****Anesth 260: Internship in Anesthesiology.**

Supervised participation routine post anesthesia care and in the identification and management of postoperative anesthetic complications and resuscitation in the post anesthetic care unit.

*Credit: 1 wk*

**FCH 260: Internship in Family and Community Medicine.****FCH 260.1: Internship in Family and Community Medicine.**

Rotation in the outpatient and emergency room settings as first contact care physicians with opportunities to formulate and help implement a holistic plan of management for patients depending on the level of care needed.

*Credit: 2 wks*

**FCH 260.2: Internship in Community Medicine.**

Rotation in a rural/urban community based health program that will provide learning experiences, opportunities and skills for interns to work as a family and community health practitioner.

*Credit: 6 wks*

**Med 260: Internship in Medicine.**

Rotation in the emergency room, outpatient and inpatient settings, and the different subspecialties, with guided participation in diagnosis and treatment of medical illnesses, in order to hone skills in decision making and interdisciplinary transactions.

*Credit: 8 wks*

**Neurosc 260: Internship in Neurology and Psychiatry.**

Rotation in the inpatient and outpatient settings to learn common neurologic and psychiatric disorders in the Philippines and to learn the basics of neuropsychiatric treatment and referral.

*Credit: 3 wks*

**Ob-Gyn 260: Internship in Obstetrics and Gynecology.**

Rotation in the different services of the out-patient, in-patient departments, OB Admitting Section and Delivery Room in order to develop skills in the diagnosis and management of normal and abnormal pregnancy, institute initial emergency measures, and perform certain minor Ob-Gyn procedures.

*Credit: 8 wks*

**Ophtha 260: Internship in Ophthalmology.**

Rotation in the inpatient, outpatient, emergency room and operating room settings essentially to learn the diagnosis and management of common eye diseases.

*Credit: 2 wks*

**ORL 260: Internship in Otorhinolaryngology.**

Rotation in the inpatient, outpatient, emergency room and operating room settings to learn the diagnostic and relevant primary care level management of common ambulatory and hospital-based diseases of the ear, nose throat, head and neck.

*Credit: 2 wks*

**Ortho 260: Internship in Orthopedics.**

Rotation in the inpatient, outpatient, emergency room and operating room settings to develop proficiency in diagnosis and treatment of common orthopedic conditions.

*Credit: 2 wks*

**Pedia 260: Internship in Pediatrics.**

Rotation in the different subspecialties of Pediatrics including Pediatric emergencies that will provide skills in the recognition and management of childhood conditions.

*Credit: 8 wks*

**Rehab 260: Internship in Rehabilitation Medicine.**

Rotation in the inpatient and outpatient clinics to learn the principles and methods of disability evaluation and treatment of specific conditions.

*Credit: 2 wks*

**Surg 260: Internship in Surgery.**

Rotation in the inpatient, emergency room and operating room settings to develop minor surgical skills, recognize life threatening conditions, and apply life saving devices.

*Credit: 8 wks*

**TRACK B – (Core Internship + Electives)**

*Requirement:* Student should belong to top 30% of the class with no grade lower than 2.75 from LU III to LU V.

**FCH 260: Internship in Family and Community Medicine.****FCH 260.1: Internship in Family and Community Medicine.**

Rotation in the outpatient and emergency room settings as first contact care physicians with opportunities to formulate and help implement a holistic plan of management for patients depending on the level of care needed.

*Credit: 2 wks*

**FCH 260.2: Internship in Community Medicine.**

Rotation in a rural/urban community based health program that will provide learning experiences, opportunities and skills for interns to work as a family and community health practitioner.

*Credit: 6 wks*

**Med 260: Internship in Medicine.**

Rotation in the emergency room, outpatient and inpatient settings, and the different subspecialties, with guided participation in diagnosis and treatment of medical illnesses, in order to hone skills in decision making and interdisciplinary transactions.

*Credit: 8 wks*

**Ob-Gyn 260: Internship in Obstetrics and Gynecology.**

Rotation in the different services of the out-patient, in-patient departments, OB Admitting Section and Delivery Room in order to develop skills in the diagnosis and management of normal and abnormal pregnancy, institute initial emergency measures, and perform certain minor Ob-Gyn procedures.

*Credit: 8 wks*

**Pedia 260: Internship in Pediatrics.**

Rotation in the different subspecialties of Pediatrics including Pediatric emergencies that will provide skills in the recognition and management of childhood conditions.

*Credit: 8 wks*

**Surg 260: Internship in Surgery.**

Rotation in the inpatient, emergency room and operating room settings to develop minor surgical skills, recognize life threatening conditions, and apply life saving devices.

*Credit: 8 wks*

***Electives:*** (Student has the option to choose from any of LU VII elective course offerings to complete 12 weeks)

**Med 291: Research Elective in Medicine.**

Scientific studies with opportunities to understand, appreciate and participate in research design, methods and evaluation as these relate to the practice of clinical Medicine.

*Credit: 4 wks*

*No. of students: 5*

**Med 291.1: Research Elective in Pulmonary Medicine.**

Scientific studies with opportunities to understand, appreciate and participate in research design, methods and evaluation as these relate to the practice of pulmonary medicine.

*Credit: 4 wks*

*No. of students: 0*

**Med 291.2: Research Elective in Oncology.**

Scientific studies with opportunities to understand, appreciate and participate in research design, methods and evaluation as these relate to the practice of oncology.

*Credit: 4 wks*

*No. of students: 1*

**Med 292: Clinical Elective in Medicine.**

Clinical rotation in internal medicine or any of its subspecialties aimed at providing an in-depth appreciation of disease states, clinical decision-making and patient care.

*Credit: 4 wks*

*No. of students: 10*

**Neurosc 291.1: Research Elective in Neurosciences 2.**

Scientific studies with opportunities to understand, appreciate and participate in research design, methods and evaluation as these relate to the practice of oncology.

*Credit: 4 wks*

*No. of students: 10*

**Ob-Gyn 291.1: Research Elective in Obstetrics and Gynecology 2.**

Scientific study including research design, review of literature, bibliography, data gathering on case reports, case series and retrospective studies.

*Credit: 4 wks*

*No. of students: 4*

**Pedia 291.1: Research Elective in Pediatrics.**

Participation or assistance in an ongoing research of the pediatric consultants, fellows and residents.

*Credit: 4 wks*

*No. of students: 2*

**Anesth 292.1: Clinical Elective in Anesthesiology 2.**

Introduction to the practice of Anesthesiology to provide basic competencies in pre anesthetic assessment, intra operative management, post anesthetic care and acute pain management in preparation for residency training in anesthesiology.

*Credit: 8 wks*

*No. of students: 8*

**Integ 292.1: Clinical Elective in Integumentary System 2.**

Diagnosis and management of common dermatological cases and emergencies.

*Credit: 4 wks*

*No. of students: 2*

**Ob-Gyn 292.1: Clinical Elective in Obstetrics and Gynecology.**

Rotation in the major subspecialty services of the department with emphasis on the basic aspect of management of highly specialized cases.

*Credit: 4 wks*

*No. of students: 4*

**Ortho 292.: Clinical Elective in Orthopedics.**

Intensive and comprehensive participation in one of the major sections of Orthopedics such as spine, hand, pediatric orthopedics trauma or adult Orthopedics.

*Credit: 8 wks*

*No. of students: 2*

**Patho 292.1: Clinical Elective in Pathology 2.**

Rotation in general anatomic Pathology and its subspecialties.

*Credit: 4 wks*

*No. of students: 10*

**Pedia 292.2: Clinical Elective in Pediatrics 2.****Option 1: General Pediatrics Rotation: In-patient and Nursery.**

Additional rotation in general pediatrics and newborn services.

*Credit: 4 wks*

*No. of students: 8*

**Option 2: General Pediatrics Rotation: Out-patient and Emergency Pediatrics.**

Rotation in out-patient, general and subspecialty clinics with duties in the emergencyroom.

*Credit: 4 wks*

*No. of students: 8*

**Rehab 292.1: Clinical Elective in Rehabilitation Medicine 2.**

Clinical participative elective for interns to refine their elevation, diagnosis, and management of common rehabilitation problems encountered in an out-patient setting.

*Credit: 4 wks*

*No. of students: 2*

**Surg 292.1: Clinical Elective in Surgery 2.**

Elective 2 week rotation in any two of the surgical subspecialties.

*Credit: 4 wks*

*No. of students: 20 or 2 students per subspecialty*

**Med 293.2: Overview of Diagnostic Modalities in Pulmonary Medicine.**

Overview of diagnostic modalities in pulmonary medicine including their indications and contraindications, interpretation and actual performance of the tests.

*Credit: 4 wks*

*No. of students: 0*

**Med 293.3: Laboratory in Microbiology.**

Orientation on the basic procedures in diagnostic microbiology including mycobacteriology through bench work and didactic lectures.

*Credit: 4 wks*

*No. of students: 1/rotation x 1 month (Jan., Feb., March only)*

**Med 294: Clinical Preceptorship in Community-based Practice of Infectious Diseases.**

Orientation on the private practice of a physician in the community setting with emphasis on infectious diseases.

*Credit: 4 wks*

*No. of students: 0*

**TRACK C – (Straight Internship)**

This is a 52 week rotation in a specialty of choice with a mandatory 8 weeks rotation in the community.

*Credit: 52 weeks*

**SI 270.1.: Straight Internship in Family and Community Medicine.**

Acquisition of the necessary knowledge and attitude for a general practice that is patient-centered, family-oriented and community-based.

*No. of students: 10*

**SI 270.2.: Straight Internship in Medicine.**

Rotation in Medicine and its subspecialties with opportunities for self-directed learning and direct patient care as junior admitting physicians.

*No. of students: 7*

**SI 270.3.: Straight Internship in Otorhinolaryngology.**

Introduction to the specialty of Otorhinolaryngology-head and neck surgery involving two months rotations in each of the subspecialty.

*No. of students: 3*

**SI 270.4.: Straight Internship in Pediatrics.**

Rotation in Pediatrics and its subspecialties with opportunities for self-directed learning and direct patient care as junior admitting physicians.

*No. of students: 10*

**SI 270.5.: Straight Internship in Radiology.**

Acquisition of knowledge, skills and attitudes on the basic fundamentals of diagnostic radiology.

*No. of students: 6*

**SI 270.6.: Straight Internship in Rehabilitation Medicine.**

Rotation in the various subspecialties of Rehabilitation Medicine involving procedures related to diagnosis and management of disability, handicap, and impairment.

*No. of students: 0*

**SI 270.7: Straight Internship in Surgery.**

Rotation in the general surgical services and its subspecialties with emphasis in the diagnosis and treatment of common surgical and life threatening emergencies.

*No. of students: 2*

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