UNIVERSITY OF THE PHILIPPINES
VISAYAS

CATALOGUE OF UNDERGRADUATE ACADEMIC PROGRAMS 2023

Prof. Nieves A. Toledo | Editors
Charito G. Gavadan / Eleza F. Jundes | Copy Editors
Herbert N. Nalagay | Layout and Cover Design Artist
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Academic Information

1. ACADEMIC YEAR

The general framework of the academic calendar shall be approved by the Executive Committee and the details thereof prepared by the University Registrar, subject to the approval of the UP President. *[Art. 305, UP Code 1961; 789th Board of Regents (BOR) Meeting, 25 November 1969; 790th BOR Meeting, 19 December 1969]*

The Academic Year is divided into two (2) semesters and a midyear session. Each semester shall consist of at least 100 class days *[Art. 306, UP Code 1961]* or at least 16 weeks each, exclusive of registration and final examination periods. Class work in the midyear session is equivalent to class work in one (1) semester. *[Art. 306, UP Code 1961]*

A semester starts on the first day of registration for that particular semester. The first semester ends on the day before the start of the registration for the second semester. The second semester ends on the day of the Commencement Exercises.

All academic units of UP Visayas (UPV) operate under the semestral system, except for some graduate programs which are under the trimestral system. Each trimester consists of 12-13 weeks or 24-26 meetings.

2. CLASS SIZE AND SCHEDULE

The size of a class shall depend on the method of instruction adopted: lecture, lecture-discussion, seminar or tutorial. *[Art. 309, UP Code 1961]*

In general, undergraduate and graduate classes are opened when there are at least ten (10) and five (5) students, respectively. An exception to this rule must have the approval of the Dean of the College on or before the last day of registration. *[UP Diliman Faculty manual]*

No class shall be divided into sections for either of the following causes: (a) to suit the personal preference of the individual instructors in regard to time and place; and (b) to enable the instructors to comply with the regulations governing teaching load. *[Art. 317, UP Code 1961]*. A faculty member who combines, merges, or meets two (2) or more sections as one class shall be credited for teaching one (1) section only. *[OP Memo No. 40, 21 July 1992]*

3. CLASS SCHEDULE

A 3-unit lecture course is equivalent to a 3-hour class period per week. A 1-unit laboratory class is equivalent to a 3-hour class period per week.

Classes are usually scheduled Mondays and Thursdays, Tuesdays and Fridays, and Wednesdays and Saturdays, with one and one-half hours per meeting. Classes can also be offered on Wednesdays or Saturdays only, with three (3) hours per session.

Faculty members shall not postpone the holding of their class to any other hour than that officially scheduled nor shall they meet their students for class of consultation purposes in any unscheduled room or place except when expressly permitted to do so by the Dean or Director concerned. *[Art. 323, UP Code 1961]*

4. COURSE NUMBERING

In general, courses in the lower division (first and sophomore years) are numbered 1 to 99, courses in the upper division (junior and senior years) are numbered 100 to 200, and graduate courses are numbered 201 to 400. Courses numbered 301 and above are generally professional courses in the doctoral program. *[682nd Executive Committee (EC) Meeting, 20 March 1978]*

5. CREDIT UNIT

The unit of credit is the semester hour. Most classes taught at the University meet three (3) hours a week; these classes carry 48 clock hours of instruction and three (3) units of credit. *[682nd EC Meeting, 20 March 1978]*

One (1) university unit of credit is at least 16 full hours of instruction in the form of lecture, discussion, seminar, tutorial, or recitation or in any combination of these forms within a semester. *[Art. 339, UP Code 1961]* Laboratory work, field work, or related student activity is credited one (1) unit for at least 32 semester hours, i.e. at least 2-3 hours per week. For a field work or practicum, the number of hours usually varies but not less than 48 hours per unit. For example, a 3-unit practicum course should have a minimum of 144 hours while a 6-unit practicum course should have a minimum of 288 hours.

6. ACADEMIC LOAD

Undergraduate students shall not be allowed to take more than 18 non-laboratory units or 21 units including laboratory work; provided, however, that graduating students with an academic record better than average may be permitted to carry a heavier load in the last year of their course; provided, further, that this rule shall not affect or alter any existing course duly approved by the University Council and the Board of Regents in which the normal semestral load is more than 18 units. *[Art. 340, UP Code 1961]*

In the midyear term, the normal load shall be six (6) units, but in justifiable cases, the Dean may allow a student to take nine (9) units. *[Art. 341, UP Code 1961]*

For students participating in the UP Undergraduate Student International Mobility (MOVE UP) program, the minimum required number of credited units within an academic year for courses taken in UP shall be reduced from 30 to 24 units in the academic year that the students shall participate in the program. *[1313th BOR Meeting, 11 December 2015]*

7. MEDIUM OF INSTRUCTION

English is generally used as the medium of instruction in the University. The UP Language Policy provides for the development and use of the Filipino language while maintaining English as a global lingua franca. The Policy states that Filipino shall be the medium of instruction in the University at the undergraduate, within a reasonable timeframe or transition period. Graduate courses of study shall be in English, though there could very well be graduate courses of study in which the medium of instruction is Filipino. English shall be maintained as the primary international language in the University to serve as its chief medium of access to the world's intellectual discourse. *[1021st BOR Meeting, 29 May 1989]*

8. CLASSIFICATION OF STUDENTS

Students of the University are classified as either regular, irregular or non-regular. *[Art. 337, UP Code 1961; OVPAA Memo No. 2023-55 dated 27 April 2023]*

A. Regular Students

a. Regular undergraduate students follow organized programs of study and comply with requirements that lead to the bachelor's degree or undergraduate diploma/certificate. They carry the full semester's load prescribed by their respective curricula and are identified as follows:

New First-Year: student who has been accepted to pursue a degree program available in a constituent university (CU) after graduating from secondary high school and has never been enrolled in any college or higher education institution; has not finished the prescribed subjects for the first year of the curriculum or has finished less than 25% of the total number of units required in the entire degree program

Sophomore: student who has completed the prescribed subjects for the first year of the curriculum or has finished not less than 25% nor more than 50% of the total number of units required in the entire course

Junior: student who has completed the prescribed subjects for the first two (2) years of the curriculum or has finished not less than 50% nor more than 75% of the total number of units required in the entire course

Senior: student who has completed the prescribed subjects for the first, second, and third years of the curriculum or has finished not less than 75% of the total number of units required in the entire course

In the case of students under a 5-year program, percentages will be prorated accordingly.

b. Regular graduate students follow an organized program of study and comply with requirements that lead to a master's or doctoral degree. They may be either part-time or full-time students.

c. Shiftees are students who have opted to change either their degree program within the College (S1) or from one college to another within their current CU (S2). For UPV, students are allowed to shift after earning 15 units *[1167th BOR Meeting, 30 January 2003]* subject to compliance with the admission requirements of the new program. Upon admission, the students submit the following: application letter addressed to the Dean, true copy of grades, college/school clearance, and certificate of good moral character.

d. Transferees are students whose admission is subject to the rules of the CU, the colleges, and the departments that offer their preferred degree programs. They may be transferring within the UP System or from one CU to another (T1) or transferring from another school or a non-UP campus; this category also includes second-degree program students (T2). Former students who have attended another institution since leaving UP and foreign transfer applicants also belong to this group.

T1 students must have completed at least 30 collegiate academic units to qualify for transfer, subject to the rules of the admitting college/school. Subjects previously cross-enrolled in another CU, if any, will not be considered for the purpose of meeting the 30-unit requirement. *[1067th BOR Meeting, 07 July 1993]* Upon admission, T1 students submit the following: clearance from the college /school where they came from, permit to transfer, official transcript of records, and certificate of good moral character.

Requirements and additional rules for admission of T2 students are found under item 9.D. (Admission. Transfer Admission)

e. **First-year students** are T2 students who are in their first term in the University, and second-degree program students, who are at their first-year level based on their curriculum.

f. **Continuing students** are students who have been enrolled in any degree program, college, or HEI. They are primarily T1, S1 and S2 categories who have been enrolled in any CU within the UP System.

   Students under T2 category are referred as transferees on their first semester in the University. They are tagged as continuing students in their succeeding year(s).

g. **Exchange students** are undergraduate students who are taking courses at UP's partner international universities. These courses may be credited when they return to the University. Aside from taking courses, they may also conduct their research or attend a degree-related training abroad.

   Students who apply as exchange students must seek a written permission of the Chancellor upon recommendation of the adviser, institute director/division or department chair, and the dean. Such recommendation must indicate the number of units and the courses to be taken. The students must provide a description of the courses to be taken.

   If the students do not intend to credit the courses taken abroad, then they may apply for leave of absence (LOA) from the University. By doing so, their stay abroad will not be counted as part of their residence in the University. Their enrollment abroad will not be reflected in their transcript of records.

   All academic units/courses taken by undergraduate exchange students in a foreign university under the UP Undergraduate Student International Mobility (MOVE UP) Program shall be credited in UP, provided that these courses have been approved for credit by the student's program adviser, the department chair/institute director and the college dean. This applies to the computation of the final average of students vying for Latin honors. *[1313th BOR Meeting, 11 December 2015]*

   Aside from the MOVE UP, the UP Academic Credit Transfer System (UP ACTS) was approved to enable the recognition of credits gained by UP students while studying abroad and facilitate the transfer of credits international students earn in UP to their home institution. The UP ACTS Guide (ver. 1), which covers the crediting of courses, processing credit transfer, and reporting of credited courses from student exchange, can be accessed at this site: https://drive.google.com/file/d/1a-Kiq3oopPNFt-sVUoU0nJ8iRFjeS04S/view

B. Irregular Students

These are students who registered for formal credit but carry less than the full load called for in a given semester by their curriculum.

C. Non-regular Students

a. **Non-Degree Students with Credits** are degree holders or undergraduate students who are not currently enrolled in any other institution of higher learning and who are enrolled in the University for credit. They do not follow an organized program of study; thus, they are not prospective candidates for graduation for any degree in the University. They shall not be allowed to enroll for more than one (1) semester, except by special permission of the Dean of the college concerned and the University Registrar.

b. **Non-majors with Credits** are students who were dismissed from their respective colleges, but not from the University, for failure to meet the retention requirements of their program and have not been accepted yet for admission to another college. They will be under the Office of the University Registrar (OUR) and advised by College Secretaries for the OUR, until the students have transferred to another college. Non-majors shall be assessed/counseled by the Office of

Counseling and Guidance or its equivalent office.

Students can be non-majors only for one (1) year, during which time, they are expected to seek admission to another college. Units earned as non-major can be credited towards the new degree program to which the students will be readmitted. *[1067th BOR Meeting, 07 July 1993]*

c. Cross registrants with credits are students who attend classes in other units/colleges within or outside a CU for a specific period of time but are primarily enrolled in their home units/colleges in the same CU or in another CU or in another institution of higher learning. Their enrollment is subject to the approval of the Deans of the home and the accepting or host units/colleges.

d. Special students without credit are those who are not earning formal academic credit for their work.

9. ADMISSION

No student shall be denied admission to the University System by reason of age, sex, nationality, religious belief, or political affiliation. *[Art. 327, UP Code 1961]*

In pursuit of academic excellence and its mandate as the National University, the University adopts the Excellence-Equity Admission System (EEAS) or the UP Admission Index (UPAI) to democratize and diversify the composition of the UP studentry. Thus, socio-economic and geographic factors are considered in the admission process to represent the country's population while maintaining high academic standards.

Students are required to submit their entrance credentials to be officially admitted to the University. Students with incomplete entrance credentials will be given provisional admission to the University for only up to one (1) year. Provisional admission may be extended beyond one (1) year on a case-to-case basis especially for reasons that are beyond the control of the student. The student shall provide proof that they are processing their entrance credentials from their previous school. *[OVPAA Memorandum No. 2023-55 dated 27 April 2023]*

Every applicant for admission shall undergo a thorough health examination. No person shall be admitted to this University who is found by the University Health Service (UHS) to be suffering from a dangerous, communicable, contagious, or infectious disease or who is physically unfit to take courses in any college or school of the University. *[Art. 328, UP Code 1961]*

Every student shall, upon admission, sign the following pledge:

> "In consideration of my admission to the University of the Philippines and of the privileges of a student in this institution, I hereby promise and pledge to abide by and comply with all the rules and regulations laid down by competent authority in the University and in the college in which I am enrolled."

Refusal to take this pledge or violation of its terms shall be sufficient cause for summary dismissal or denial of admission. *[Art. 329, UP Code 1961]*

As required by law, the University processes the personal information and sensitive personal information of admission applicants to safeguard academic freedom, uphold their right to quality education, and protect their right to data privacy in conformity with Republic Act No. 10173, otherwise known as the Data Privacy Act of 2012, and its implementing rules and regulations.

The UPV admits undergraduate students each academic year through the following channels:

A. UP College Admission Test (UPCAT)

The UPCAT is conducted yearly and serves as a screening instrument for prospective new first-year students. It should only be taken once. Applying for this entrance exam does not require a minimum high school average grade.

Applicants must be:

a. Senior students (e.g., Grade 12, Senior 6) of schools accredited by the Department of Education (DepEd) or those who are expecting to graduate from secondary schools abroad at the end of the school year;
b. Graduates of DepEd-accredited schools or secondary schools abroad; or
c. Those declared eligible for admission to college after taking the Philippine Educational Placement Test (PEPT).

Applicants who fall under b and c should not have taken any college subject(s) previously, not be taking any college subject(s) at present, and not be taking any college subject(s) prior to or for the semester/academic year of their scheduled UPCAT.

Applicants must have not taken the UPCAT previously.

B. Iskolar ng Bayan (INB) Program

Each CU offers limited slots for this program. Only Filipino students in the Top Ten of their graduating class in public high schools are eligible to apply. They must:

a. obtain a UP grade better than or equal to the designated minimum for an applicant to qualify for the UP campus where they will file an INB application which must be in the same region as their high school (except for UP Open University); and
b. comply with all the requirements of the degree program they have indicated in their INB application form offered by such UP campus.

C. Automatic Admission for International Students

Applicants who graduated or are graduating from a secondary school abroad, including Filipino students from Philippine high schools in the Middle East, may be admitted as first-year students by automatic admission, provided that they:

a. Have not enrolled in any other tertiary institution before the start of the school year; and
b. Meet other admission requirements, such as:
    i. Completion of a high school program or a one- or two-year pre-university education in a country where such is a prerequisite for admission to a bachelor's degree program
    ii. Qualifications for college admission by any of the following national or international foreign-administered examinations:
        - SAT (scores must not have been taken more than 4 years before application)
        - General Certificate of Education (GCE) Examination
            - 2 ordinary (O) level passes/General Certificate of Secondary Education (GCSE)/International General Certificate of Secondary Education (IGCSE), and
            - 3 advanced (A) level passes

- International Baccalaureate (IB) Diploma
- Other equivalent examinations approved by UP

iii. Applicants, whose native language or medium of instruction in the secondary school is not English, need a minimum score (500 if paper based or 173 if computer based) in the Test of English as a Foreign Language (TOEFL) or in the International English Language Testing System (IELTS) set varyingly across CUs.

Students from foreign countries must substantially meet the entrance requirements prescribed for a course or degree program, provided that their previous training was obtained from an institution of recognized standing and that their chosen college or school has a slot for them.

Graduates of high schools abroad who fail to satisfy the requirements for automatic admission may take the UPCAT.

Filipino graduates from secondary schools abroad must comply with the same requirements as those for foreign students.

D. Transfer Admission

Students from other universities (T2) may apply for transfer to a CU, provided that:

a. They have earned 33 academic units in their former school
b. They have obtained a weighted average of 2.00, 86%, or "B", or better for all the collegiate academic units earned outside of the UP System. The computation of the general weighted average (GWA) required of transfer students shall exclude vocational subjects.
c. They will have to complete in the University no less than 50% of the units required for their program.

T2 students may be admitted if the quota set by the Dean of the college/school concerned to which they seek admission has not yet been filled up. If there is a gap in enrollment, a non-enrollment certificate/affidavit must be submitted by the student.

Former UP students turned transferee-applicants may be disqualified due to these reasons:

a. Permanent disqualification from the University. However, a student who had been permanently disqualified from UP may apply for admission to a second bachelor's degree or to a graduate program after completing a bachelor's degree outside the University.
b. Dismissal for cause
c. Withdrawn admission due to submission of fake/falsified entrance credentials/documents
d. Found guilty of dishonesty or any form of misconduct

Validation of Advance Credits

The admission of transfer students shall be on probation basis until such time the students shall have validated or repeated all the subjects taken outside the UP System which are required for their course. They will not be allowed to enroll in a subject or subjects the prerequisite of which, taken elsewhere, have not yet been validated or repeated in the University. *[Art. 359 b and c, UP Code 1961]*

Admitted transfer students must validate all the courses they are offering for advanced credits at the rate of at least 18 units a semester within a period not exceeding three (3) semesters from the date of

their admission. Failure to comply with this requirement will mean the cancellation of their registration privileges. *[Art. 359 d, UP Code 1961]*

A student transferring from any recognized institution who possesses an Associate in Arts or its equivalent of 66 units of work may be enrolled without validation. Before a student is allowed to major in any discipline, the major discipline may prescribe additional courses up to 18 units of general education courses and/or preparatory courses for the major. Candidates for a second baccalaureate degree will be required a written comprehensive examination. *[Art. 360, UP Code 1961]*

The grant of advanced credits for courses which are completed in other institutions, but which have no equivalent in this University shall be left to the faculty of the unit concerned. *[Art. 361, UP Code 1961]*

Application for advanced credit shall be made, using the prescribed form to the University Registrar or to the Dean of the college or school which offers the course for which advanced credit is applied. Validation tests begin two (2) weeks before the first day of registration of each semester and shall end one (1) week after the last day of registration. There is no fee for validation tests during this period. A validation test may be held outside of this period with the consent of the Department or Division Chair and approval of the Dean or Director and upon payment of a fee per subject *(Art. 362, UP Code 1961, as amended during the 790th BOR Meeting, 19 December 1969 and 859th BOR Meeting, 10 April 1975)*

Each college or school may promulgate rules for the admission of transfer students and the granting of advance credits provided they are not inconsistent with the general rules set by the University Council. *[Art. 366, UP Code 1961]*

E. Admission of Non-Regular Students

Non-degree students may be allowed to take graduate or undergraduate courses for credit only if they satisfy the appropriate requirements for admission to the University.

Special students, even if they do not fully satisfy the entrance requirements, may enroll for such subjects which in the opinion of the instructor and the Dean, they have the necessary information and ability to pursue profitably. They shall not be allowed to enroll for more than nine (9) units a semester or to register for more than two (2) years, except by special permission of the Dean. Subjects taken shall be non-credit although their work may be reported at the end of each semester as "satisfactory" or "unsatisfactory". *[682nd EC Meeting, 20 March 1978]*

A student registered in another collegiate institution and who wishes to cross-register in UP must present a written permit from the Dean, Director, or Registrar of the home and the accepting units/colleges. The permit shall state the total number of units for which the student may be registered and the subjects that the student is authorized to take in the University. *[Arts. 333-334, UP Code 1961]* The total number of units of credit for which a student may register in two or more colleges or schools in this University shall not exceed the maximum allowed by the rules on academic load. *[Art. 335, UP Code 1961]*

The entrance requirement for each degree program shall be prescribed by the faculty of the College offering the course and approved by the University Council and the President of the University *[Art. 324, UP Code 1961, as amended during the 830th BOR Meeting, 22 February 1973]*

10. DEFERMENT OF ENROLLMENT

For valid reasons, qualified new first-year students who cannot enroll during the semester originally applied for may apply for deferment of enrollment to the next succeeding semester by writing to the University Registrar. Such applicants need to confirm the slot offered to them and must not take any academic college subject prior to enrollment. The maximum period allowed by the University for deferment of enrollment is one (1) academic year.

11. WITHDRAWAL OF ENROLLMENT

If a student opts to withdraw admission but has not submitted the complete entrance credential, the student's enrollment shall be null and void. The honorable dismissal of a student with complete entrance credentials but who decided to withdraw his/her admission one (1) month after enrollment and whose name is included in the CHED billing shall be processed. Thus, all classes that the student enrolled shall be automatically dropped; this must be reflected in the transcript of records of the student. The OUR should inform the faculty that the student withdrew his/her admission so the faculty can revise their Faculty Service Record (FSR) accordingly.

12. READMISSION

Rejoining student (those not enrolled during the immediately preceding semester, excluding the midyear session) should first request for readmission from the Dean of their College where they were last enrolled.

The authority to approve readmission from AWOL is delegated to the University Registrar while readmission of permanently disqualified (PDQ) students is delegated to the VCAA. *[1379th BOR Meeting, 03 April 2023]* A student applying for readmission from AWOL must pay a readmission fee.

Former students who have attended another institution since attending the University of the Philippines must qualify on the same basis as new transfer students. *[UP Diliman Academic Information 1997; 682nd EC Meeting, 20 March 1978]*

13. GENERAL EDUCATION (GE) PROGRAM

All undergraduate students enrolled in the bachelor's degree programs are required to take general education courses. For UPV, the GE program requires 21 units of core GE courses and 15 units of elective GE courses. The core GE courses are as follows: *[1317th BOR Meeting, 28 April 2016; approved by the BOR via referendum on 27 December 2017]*

COURSE NO.	COURSE TITLE	UNITS
ARTS 1	Critical Perspectives in the Arts	3
COMM 10	Critical Perspectives in Communication	3
ETHICS 1	Ethics and Moral Reasoning in Everyday Life	3
KAS 1	Kasaysayan ng Pilipinas	3
MATH 10	Mathematics, Culture, and Society	3
STS	Science, Technology, and Society	3
WIKA 1	Wika, Kultura, at Lipunan	3

14. PHYSICAL EDUCATION (PE) REQUIREMENTS

All undergraduate students are required to take eight (8) units of PE with the following exceptions: *[925th BOR Meeting, 27 March 1980]*

a. students who hold the Associate in Arts title (or equivalent) or a Bachelor's degree;
b. students who are 30 years old or older;
c. veterans of the armed forces, navy, or air force; and
d. students who have served on a full-time basis for at least two (2) years in the armed forces, navy, or air force.

The required PE courses are PE 1 and any three (3) courses classified as PE 2 or PE 3, provided that these courses are of different activities.

Proficiency Examination in Physical Education (PEPE)

Proficiency examination (or credit by examination) in PE courses are given to enable students who are already skillful in one or more sports to acquire advanced units in PE. Any student who passes the PEPE shall be given credit for one or more PE courses. The examination is given before the start of every semester.

A student who is graduating at the end of a given semester but who failed to enroll in a required PE course may take a special proficiency examination upon presentation of a certificate of candidacy for graduation from his/her College Secretary. The student pays a fee for the special PEPE. *[2003 UP Diliman Faculty Manual]*

15. NATIONAL SERVICE TRAINING PROGRAM (NSTP)

All students enrolled in any baccalaureate degree shall be required to complete six (6) units in one of the NSTP components listed below as a requisite for graduation

a. Reserve Officers' Training Corps (ROTC)
b. Literacy Training Service (LTS)
c. Civic Welfare Training Service (CWTS)

16. ADVANCE CREDIT/ADVANCE PLACEMENT EXAMINATION (APE)

New first year students who qualify for and pass the prescribed APE in basic courses in the first year such as the languages, College Algebra, Plane Trigonometry, etc. within one (1) year of their enrollment in the University, shall be given credit for the corresponding subjects in their academic program provided that this privilege is not given for more than six (6) units in any one discipline. These examinations are usually scheduled two (2) weeks before the advance registration for new first year students every first semester. *[234th UC Meeting, 27 June 1968; 859th BOR Meeting, 10 April 1975; UP Diliman Faculty Manual 2003]*

Application forms and other information regarding the APE may be obtained from the Office of the College Secretary of the College of Arts and Sciences (CAS).

17. REGISTRATION

A student must be officially registered in order to receive credit for course work. No person who has not duly matriculated may be admitted to the classes. In exceptional cases, the Registrar may, on the recommendation of the Dean concerned, authorize the admission of a visitor to a class for not more than five (5) sessions. *[Art. 330, UP Code 1961; as amended at the 790th BOR Meeting, 19 December 1969 and 861st BOR Meeting, 29 May 1975]*

No student shall be registered in any subject after one (1) week of regular class meetings have been held, unless the Dean permits the registration of the student on the basis of the student's scholastic record and that: *[Art. 332, as amended at the 232nd UC Meeting, 4 May 1967]*

a. A special student may register at any time without the payment of the fine for late registration subject to other regulations of the University.
b. A student may register for a particular subject within a semester when permissible under the system of instruction adopted by the college or school.

There will be no late registration. Instead, the Chancellors shall prescribe a reasonable amount of time for registration. *[1214th BOR Meeting, 26 October 2006]*

Students may be allowed to enroll in subjects outside their curriculum based on these rules:

a. They have expressed their intention to shift by writing to the Department Chair/Institute Director of the home unit.
b. They must shift within one (1) year, subject to compliance with the admission requirements of the admitting unit.
c. If after one (1) year they have failed to shift out, they must follow the curriculum of the original program.
d. Their registration/program adviser must inform them of the consequences of enrolling in courses outside the curriculum, e.g., added academic load and possible delay in graduation.

As a matter of policy, simultaneous enrollment in two-degree programs is not allowed by the University. *[1379th BOR Meeting, 03 April 2023]*

Students with incomplete entrance credentials may be allowed to provisional enrollment. It should be noted that enrollment in courses while provisionally admitted to the University is not official until complete entrance credentials are submitted. *[OVPAA Memo No. 2023-55 dated 27 April 2023]*

Free Tuition Policy

In accordance with the Universal Access to Quality Tertiary Education Act of 2017, or R.A. 10931, all eligible students will be granted free tuition and miscellaneous fees when they enroll in the University of the Philippines.

Students who fail to complete their bachelor's degree or comparable undergraduate degree within a year after the period prescribed in the program are no longer eligible to enjoy the privilege of free tuition and other fees. *[Guidelines for the Implementation of Free Tuition and other Fees, Memorandum, PLDC Memo No. 17-21B, 07 August 2017]*

The "prescribed period" refers to the normal length of time to complete the requirements for graduation. Counting is done from the start of the student's enrollment in UP.

Students who hold a dual citizenship (e.g., Filipino-American, Filipino-Chinese) and choose to be classified as Filipino during their initial enrollment will be considered Filipino until graduation. They can also avail of the free tuition. Prior to admission, these students must submit their identification certificates (ICs) issued by the Bureau of Immigration or their Philippine passports with either a report of birth or a reacquisition of citizenship. *[Foreign Students Admission-Dual Citizenship, UP Diliman: Final Report of the Workshop of University Registrars of the Different Constituent Universities Regarding Student Admission, Registration, Progress, and Graduation Policies, Guidelines, and Processes, 2020]*

18. CROSS REGISTRATION

Within the University

No student shall be registered in any other college, school, or university without the permission of the Dean and Director/Chair of the College/School and Institute/Department in which the student is primarily enrolled. *[Art. 333, UP Code 1961, as amended at the 1352nd BOR Meeting, 30 July 2020]*

A student who wants to register in another campus in the University must fill out the cross-registration form. The total number of units of credit for which a student may register in two or more colleges or schools in this University shall not exceed the maximum allowed by the rules on academic load. *[Art. 335, UP Code 1961]*

Full cross-registration in any other UP campus shall be allowed only when a graduating student that particular semester needs required subject/s which is/are not offered in the student's home campus or for health reasons necessitating prolonged medical treatment.

Students who are cross-registered are considered in residence in their respective constituent university. *[Art 333, UP Code 1916, as amended at the 1352nd BOR Meeting, 30 July 2020]*

To another Institution

The University gives 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 University Registrar on the recommendation of the Dean concerned. *[E.O. No. 1 dated 13 March 1984; EO No. 2 dated 14 March 1984; Memorandum FN 90-12 dated 07 March 1990]* The authorization shall be in writing to be recorded by the University Registrar or by the student's representative and shall specifically describe the subjects authorized. *[Art. 336, UP Code 1961]*

Courses taken outside the University are subject to validation. Courses taken in a foreign university during student mobility will not be included in the computation of the Curriculum Weighted Average Grade (CWAG) / General Weighted Average Grade (GWA). *[1352nd BOR Meeting, 30 July 2020]*

From another Institution

No student registered in any other institution shall be admitted to the University without a written permit from his/her Dean, Director, or Registrar. The permit shall state the total number of units for which the student is registered and the subjects that he/she is authorized to take in the University. *[Art. 334, UP Code 1961].* Admission is subject to availability of slots and must have the approval of the Dean of the unit concerned.

19. WAIVER OF PREREQUISITES

Courses approved by the University Council as prerequisites to other courses may not be waived. However, in meritorious cases, a student who has previously enrolled and fully attended in a course that is prerequisite to another may be allowed to enroll and attend the latter course for credit, without having passed or earned credit for the prerequisite course.

No permission shall be granted by the college/school except upon application by the student. The application shall be accompanied by certifications from the (1) student's instructor in the prerequisite course that the student had fully attended said course and (2) Director of the Office of Student Affairs that the student's failure to pass or earn credit in the prerequisite course was not due to disciplinary action imposed upon the student.

Each college shall be authorized to grant the permission and shall act through a Dean's Committee, which shall determine the merit of the application. The Committee shall include the college secretary.

The student who is granted permission under these rules is required to enroll in the prerequisite course simultaneously with the course to which it is a prerequisite, or immediately in the next semester.

The permission which may be granted under these rules does not apply to courses in the General Education Program. *[745th BOR Meeting, 21 April 1966]* Waiver of prerequisite for a course that was dropped by the student in their own volition is not allowed. *[OVPAA Memo No. 2023-55]*

20. CHANGE OF MATRICULATION

All transfers to other classes shall be made only for valid reasons, which includes conflicts in schedules and when classes are dissolved. No change of matriculation involving the taking of a new subject shall be allowed after one (1) week of regular class meetings has been held. Changes in matriculation shall be effected by means of the form for the change of matriculation and must be recommended by the adviser and approved by the Dean. After being duly accomplished, it shall be submitted to the OUR for assessment and notation.

21. DROPPING OF COURSES

A student may, with the consent of the instructor and the College Secretary, drop a course by filling out the prescribed form before 3/4 of the hours prescribed for the semester/trimester/ quarter term have elapsed, and not later. *[Memo No. FN 90-68 dated 08 Aug. 1990]*

If a course is dropped after the middle of the term, the faculty member concerned shall indicate the date and the class standing of the student at the time of dropping as either Passing or Failing solely for administrative guidance. *[Art. 350, UP Code 1961; as amended at the 669th UC-EC Meeting, 03 September 1975]*

Any student who drops a course without the approval of the Dean shall have his/her registration privileges curtailed or entirely withdrawn. *[Art. 351 UP Code 1961]*

22. SUBSTITUTION OF COURSES

Every substitution of subjects must be based on at least one of the following: [*Art. 354 UP Code 1961]*

a. when a student is 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;
b. when there is conflict of hours between a required subject and another required subject; or
c. when the required subject is not offered during the semester when the student needs it.

Every petition for substitution must: *[Art. 355 UP Code 1961]*

a. involve subjects within the same department, if possible; if not, the two (2) subjects concerned must be allied to each other;
b. be between subjects carrying the same number of units; and
c. be recommended by the adviser and by the heads of departments concerned.

All petitions for substitution must be submitted to the Office of the Dean concerned before 12% of the regular class meetings have been held. Any petition submitted thereafter shall be considered for the following semester. *[Art. 356, UP Code 1961]*

No substitution shall be allowed for any subject prescribed in the curriculum in which the student has failed or received a grade of "5", except when, in the opinion of the department offering the prescribed subject, or of the faculty in units without any departments, the proposed substitute covers substantially the same subject matter as the required subject. *[Art. 357, UP Code 1961]*

All applications for substitution shall be acted upon by the Dean concerned. In case the action of the Dean is adverse to the recommendation of the adviser and the Head of the Department concerned, the student may appeal to the Vice Chancellor for Academic Affairs whose decision shall be final. *[Art. 358, UP Code 1961, as amended at the 790th BOR Meeting, 19 December 1969; E.O. No. 1 dated 13 March 1984 and E.O. No. 2 dated 14 March 1984; Memo FN 90-12 dated 07 March 1990]*

23. ATTENDANCE

When the number of hours lost by absence of a student reaches 20% of the hours of recitation, lecture, laboratory or any other scheduled work in one (1) subject, he shall be dropped from the subject, provided, that a faculty member may prescribe a longer attendance requirement to meet their special needs. If the majority of the absences are excused, the student shall not be given a grade of "5" upon being thus dropped; but if the majority of the absences are not excused, he shall be given a grade of "5" upon being thus dropped. Time lost by late enrollment shall be considered as time lost by absence. *[Art. 346, UP Code 1961]*

Any student who, for unavoidable cause (such as health reasons, burial of immediate family member, and invitation to competitions, training, etc. with official communication duly approved by the VCAA), absents himself from class must obtain an excuse slip from the College Secretary to be presented to the instructor concerned not later than the second class session following the student's return. *[Memo No. FN 90-68 dated 08 Aug. 1990]* In case the absence is due to illness, a certificate must be secured from the University Health Service.

Excuses are for the time missed only. All work covered by the class during the absence shall be made up to the satisfaction of the instructor within a reasonable time from the date of absence.

24. INTEGRATION PERIOD

A division or department chairman, with the approval of the Dean, may authorize any member of his/her unit to suspend formal classes for a period not exceeding three (3) days before the final examinations to enable students to review; Provided, that in case of colleges with no divisions or departments, the suspension may be done by any member of the faculty, but also subject to the approval of the Dean; Provided, further, that faculty members who have been authorized to suspend their classes shall keep regular hours for consultation work. [*Art. 367, UP Code 1961]*

25. GRADING SYSTEM

The work of students shall be graded at the end of each term in accordance with the following system: *[Art. 369, UP Code 1961]*

1	- Excellent	2.5	- Satisfactory
1.25	- Excellent	2.75	- Satisfactory
1.5	- Very Good	3	- Passed
1.75	- Very Good	4	- Conditional Failure
2	- Good	5	- Failing
2.25	- Good	INC	- Incomplete

A grade of "4" means conditional failure. It may be made up for by passing a reexamination or by successful repetition of the course. If the student passes the reexamination, a grade of "3", but if he fails, a grade of "5" is given.

The grade of INC is given if a student, whose class standing throughout the semester is passing, fails to take the final examination or fails to complete other requirements for the course due to illness or other valid reasons. In case the class standing is not passing and the student fails to take the final examination for any reason, a grade of "5" is given.

26. REMOVAL OF A GRADE OF "4" OR COMPLETION OF "INC"

Removal of a grade of "4" and the completion of an INC must be done within the prescribed time (one academic year) by passing an examination or meeting all the requirements for the course, after which the student shall be given a final grade based on his/her overall performance. *[Art. 369, as amended at the 214th UC Meeting, 12 April 1962; 886th BOR Meeting, 28 April 1977; 899th BOR Meeting, 30 March 1978; 1379th BOR Meeting, 03 April 2023]*

Completion and removal examinations may be taken without fee during the:

a. regular examination periods, if the subject is included in the schedule of examination; or

b. removal examination period, viz, the period covering ten (10) days preceding the registration in each semester, provided that the examination is taken at the time that it is scheduled.

Completion and removal examinations may be taken at other times on the recommendation of the College Secretary *[Memo No. FN 90-68 dated 08 August 1990]* and upon payment of a required fee. Students not in residence shall pay the registration fee besides the examination fee to be entitled to take the removal examination. *[Art. 377, UP Code 1961]*

A grade of "4" received after removing a grade of INC, however, must be removed within the remaining portion of the prescribed period for the removal of the original grade of INC. In no case shall the period for the removal of grades of INC extend beyond one (1) academic year from the date the grade was received; provided, however, that this one-year academic period allowed for the

removal shall be interpreted as extending to the regular semestral removal period immediately following the one-year period. *[Art. 378, UP Code 1961; as amended at the 886th BOR Meeting, 28 April 1977]*

A student can complete their INC as long as they are enrolled in any CU of the University. A course with an INC may not be re-enrolled within the prescription period. *[1379th Meeting, 03 April 2023]*

Students who are not enrolled in any subject but want to complete an INC or remove a grade of "4" must enroll for residence.

27. SUBMISSION OF GRADES

Every faculty member shall submit the report of grades as soon as possible after the final examinations at the end of each term. A period of five (5) days is ordinarily allowed for each section for the grading of papers and the preparation of the report of grades. In case an instructor handles several sections and the interval between the examinations is less than five (5) days, he shall submit the reports of grades for the 5-day period after each examination, provided, that all reports of grades must be submitted not later than seven (7) days after the last day of the examination period. In justifiable cases, deviation from the above rules may be authorized by the Chancellor. *[Art. 372, UP Code 1961; as amended at the 790th BOR Meeting, 19 December 1969 and the 792nd BOR Meeting, 25 February 1970; EO No. 1 dated 13 March 1984 and EO No. 2 dated 14 March 1984]*

Penalties for Late Submission of Grades

Since the prompt submission of grades is in large part a matter of good management, discipline, and enforcement of University regulations, Department Chairmen, College Secretaries, and Deans are enjoined to bend all efforts towards compliance with codal provisions regarding deadlines for submission of grades as well as recommendations for graduation of students. *[822nd BOR Meeting, 31 July 1972]*

Upon recommendation of the Dean and subject to the approval of the President, a faculty member who, without justifiable cause, fails to submit grades on time, shall be liable to any of the following penalties: *[as amended at the 825th BOR Meeting, 26 October 1972]*

a. Warning
b. Reprimand
c. Fine of not more than his/her salary per day for each day of delay
d. Suspension without pay for a period not exceeding one (1) semester in case of repeated delinquency

The procedure for the imposition of any penalty shall consist of the following steps:

a. Notification of deadline, including request for an explanation;
b. Report of delinquency; and
c. Order imposing the penalty

28. CHANGE OF GRADES

A student who has received a passing grade in a given course is not allowed reexamination for the purpose of improving his/her grades. *[Art. 371, UP Code 1961]*

No faculty member shall change any grade after the report of record has been filed with the College/School Secretary or with the University Registrar. In exceptional cases, as where an error has been committed, the instructor may request authority from the faculty of his/her college/school to make the necessary change. If the request is granted, a copy of the resolution of the faculty authorizing the change shall be forwarded to the OUR for recording and filing. *[Art. 374, UP Code 1961]*

In UPV, there is no NSTP coordinator appointed for each college/school and all NSTP instructors report directly to the NSTP Director. If the change of NSTP grade involves students from the same college as that of the instructor, the instructor will request approval from the faculty of their college. If the change of grade involves students from different colleges, the request will be approved by the UC. *[Memo CCC 2021-11-057 dated 25 November 2021; 130th UC Meeting, 22 March 2023]*

Notwithstanding the foregoing provision and to avoid any injustice, the grade on a final examination paper may be revised by a committee of the Dean of the college if it should clearly appear, on the basis of the quality of the scholastic record of the student, that such grade is the result of an erroneous appreciation of the answers or of an arbitrary or careless decision by the faculty member concerned. Should the change of the grade on said paper affect the final grade of the student, the committee may request authority from the faculty of the college to make the necessary change in the final grade. The request for reconsideration shall be made within 30 days after the receipt of the final grade by the student concerned. *[Art. 374, UP Code 1961]*

Students of the University shall not directly or indirectly ask any person to recommend them to their professor/s for any grade in their class record, examination paper, or final report of grades. Any student violating this rule shall lose credit in the subject/s regarding which such recommendation is made. The fact that a student is thus recommended shall be prima facie evidence that the recommendation is made at the request of the student concerned. *[Art. 375, UP Code 1961]*

29. HONORIFIC SCHOLARSHIPS

University Scholarship

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. University scholars are listed in the President's List of Scholars. *[Art. 381, UP Code 1961; as amended at the 810th BOR Meeting, 30 June 1971]*

College Scholarship

Any undergraduate or graduate student who, not being classified as University scholar, obtains at the end of the semester a weighted average of 1.75 or better, or 1.50 or better, respectively, is given this honorific scholarship. College scholars are listed in the Dean's List of Scholars. *[Art. 382, UP Code 1961; as amended at the 810th BOR Meeting, 30 June 1971]*

Additional Requirements for Honorific Scholarships

In addition to the general weighted average prescribed, a student must have taken during the previous semester not less than 15 units of academic credit or the normal academic load prescribed in the

curriculum (in the case of graduate students, not less than 8 units) and must have no grade below "3" in any academic or non-academic subject. *[Art. 383, UP Code 1961; as amended at the 1167th BOR Meeting, 30 January 2003]* 'Previous term' refers to the semester being evaluated. *[University Registrars' Workshop Part 3 held on 29 January – 1 February 2023 at the UPV Iloilo City Campus]*

Grades of INC must be completed by the end of the semester to be considered for the honorific scholarship.

The effectivity of the scholarship is the end of the semester concerned. A university or college scholarship shall last only for one (1) semester but shall be renewable for the succeeding semester if the student meets the conditions prescribed for any of them. *[Art. 384, UP Code 1961]*

Honorific scholarships do not entitle the holders to any tuition fee waiver, either partial or full.

30. SCHOLASTIC DELINQUENCY

The faculty of each college or school shall approve suitable and effective provisions governing undergraduate delinquent students, subject to the following minimum standards:

Warning. Any student who obtains final grades at the end of the semester below "3" in 25% to 49% of the total number of academic units for which the student is registered will receive a warning from the Dean to improve his/her work. *[Art. 389, UP Code 1961]*

Probation. Any student who, at the end of the semester obtains final grades below "3" in 50% to 75% of the total number of academic units in which the student has final grades shall be placed on probation for the succeeding semester and his/her load shall be limited to the extent to be determined by the Dean. Probation may be removed by passing with grades of "3" or better in more than 50% of the units in which the student has final grades in the succeeding semester. *[Art. 389, UP Code 1961; as amended at the 232nd UC Meeting, 04 May 1967]*

Dismissal. Any student who, at the end of the semester, obtains final grades below "3" in more than 75% but less than 100% of the total number of academic units in which he/she receives final grades shall be dropped from the rolls of the college/school. *[Art. 389, UP Code 1961; as amended at the 232nd UC Meeting, 04 May 1967]*

Any student on probation in accordance with the preceding rule who again fails in 50% or more of the total number of units in which he/she receives final grades shall be dropped from the rolls of his/her college or school. *[Art. 390, UP Code 1961]*

Any student dropped from one college or school shall not ordinarily be admitted to another unit of the University, unless in the opinion of the Director of the Office of Student Affairs the natural aptitude and interest of the student may qualify the student in another field of study, in which case the student may be allowed to enroll in the proper college, or school, or department. *[Art. 391, UP Code 1961; as amended at the 790th BOR Meeting, 19 December 1969]*

Permanent Disqualification. Any student who, at the end of the semester or term, obtains final grades below "3" in 100% of the academic units in which he/she is given final grades shall be permanently barred from readmission to any college or school of the University. *[Art. 392, UP Code 1961; as amended at the 232nd UC Meeting, 04 May 1967]*

Any student who was dropped in accordance with the rules on Dismissal and again fails so that it becomes necessary again to drop the student, shall not be eligible for readmission to any college or school of the University. *[Art. 392, UP Code 1961]*

Permanent disqualification does not apply to cases where, on recommendation of the instructors concerned, the faculty certifies that the grades of "5" were due to the student's unauthorized dropping of the subjects and not to poor scholarship. However, if the unauthorized withdrawal takes place after the mid-semester and the student's class standing is poor, the grade of "5" shall be counted against the student for the purpose of this scholarship rule. The Dean shall deal with these cases on their individual merits in the light of the recommendations of the Director of the Office of Student Affairs; Provided that in no case of readmission to the same or another college or school shall the action be lighter than probation. *[Art. 393, UP Code 1961; as amended at the 790th BOR Meeting, 19 December 1969]*

A grade of INC is not to be included in the computation of GWA. When it is replaced by a final grade, the latter is to be included in the grades during the semester when the removal is made. *[Art. 394, UP Code 1961]*

The grade of "4" is included in the computation of GWA until it is removed. Once removed, only the final grade of "3" or "5" is included. When the one-year grace period for removal has lapsed, the grade of 4 is automatically changed to 5. In this case, the "5" is included in the GWA computation. When the course is re-enrolled, the new grade is also included. *[1309th BOR Meeting, 22 July 2015; 1310th BOR Meeting, 27 August 2015]*

No readmission of dismissed students or disqualified students shall be considered by the Deans and Directors without the favorable recommendation of the University Guidance Counselor. Cases in which the action of the Dean conflicts with the recommendation of the University Guidance Counselor may be elevated to the Vice Chancellor for Academic Affairs, whose decision shall be final. *[Art. 397, UP Code 1961; as amended at the 853rd BOR Meeting, 28 November 1974; EO No. 1 dated 13 March 1984 and EO No. 2 dated 14 March 1984; 1379th BOR Meeting, 03 April 2023]*

31. LEAVE OF ABSENCE (LOA)

A leave of absence must be requested in a written petition (NOTE: Application form for LOA may be downloaded from the CRS) for approval of the Dean. The petition must state the reason for which the leave is desired and must specify the period of the leave, which must not exceed one (1) academic year but may be renewed for at most another year. When not taken in two (2) successive years, the aggregate leave of absence should not exceed two (2) years. *[Art. 401, UP Code 1961; Memo No. FN 90-68 dated 08 August 1990; OVPAA Memorandum No. 2023-55 dated 27 April 2023]*

Students who need to go on leave of absence beyond the allowable period of two (2) years shall apply for an honorable dismissal without prejudice to readmission. Students who fail to apply for an honorable dismissal beyond one (1) year shall have their registration privileges permanently withdrawn. *[Art. 401, UP Code 1961; as amended at the 1067th BOR Meeting, 07 July 1993]*

For leave of absence availed during the second half of the semester, the faculty members concerned shall be required to indicate the class standing of the student (passing or failing) at the time of the application for the leave. No application for leave of absence shall be approved without indicating the class standing by the instructors concerned. This, however, should not be entered in the official Report of Grades. No leave of absence shall be granted during the semester within two (2) weeks before the last day of classes. *[822nd BOR Meeting, 31 July 1972]*

If a student who withdraws after ¾ of the total number of hours prescribed for a course has already lapsed, the instructors may submit a grade of "5" if the class standing of the student up to the time of the withdrawal is below "3". [*Art. 402, UP Code 1961]*

Students who withdraw from a college or school without formal leave of absence shall have their registration privileges curtailed or entirely withdrawn. *[Art. 403, UP Code 1961]*

32. MAXIMUM RESIDENCE RULE (MRR)

A student must finish the requirements of a course of any college within a period of actual residence equivalent to 1 1/2 times the normal length prescribed for the program, otherwise the student shall not be allowed to register further in that college. Thus, the prescribed years to finish a 4-year and 5-year Bachelor's degree program are 6 and 7.5 years, respectively. The counting of the period of residence shall start from the student's first enrollment in the University.

LOA is not counted towards MRR for both undergraduate and graduate students. *[1379th BOR Meeting, 03 April 2023]*

Under meritorious cases, extension of residence may be granted. The faculty of each college shall designate the approving authority for such extensions. Each extension granted shall be reported to the Chancellor through the Vice Chancellor for Academic Affairs. *[787th BOR Meeting, 29 September 1969]*

33. HONORABLE DISMISSAL (HD)

Students in good standing who desire to sever their connection with the University shall present a written petition to this effect to the University Registrar, signed by the parent or guardian of the student. If the petition is granted, the student shall be given honorable dismissal. Without such petition and favorable action, no record of honorable dismissal shall be made. *[Art. 398, UP Code 1961; as amended at the 790th BOR Meeting, 19 December 1969]* Honorable dismissal is issued only once.

Honorable dismissal is voluntary withdrawal from the University with the consent of the University Registrar or his/her representative. All indebtedness to the University must be settled before a statement of honorable dismissal will be issued. The statement indicates that the student withdrew in good standing as far as character and conduct are concerned. If the student has been dropped from the rolls on account of poor scholarship, a statement to that effect may be added to the honorable dismissal. *[Art. 399, UP Code 1961; as amended at the789th BOR Meeting, 25 November 1969 and 790th BOR Meeting, 19 December 1969]*

Students who leave the University by reason of expulsion due to disciplinary action shall be allowed to obtain their academic transcript of record without reference to Dishonorable Dismissal, provided*: [Art. 400, UP Code 1961; as amended at 914th BOR Meeting, 31 May 1979]*

a. the students write an application;
b. not less than one (1) school year, beginning the school year immediately following the effectivity of the expulsion decision has elapsed;
c. the parties concerned, during the period of expulsion, have not been involved in any untoward incident affecting the University, or been charged in court after the fiscal's investigation; and
d. all such applications are subject to Board of Regents action.

Certificates of honorable dismissal shall not be issued to graduates. *[OVPAA Memorandum No. 02-09 dated 04 February 2002]*

34. SECOND BACCALAUREATE DEGREE

Only one (1) baccalaureate degree may be conferred at a time. A holder of a University of the Philippines bachelor's degree may earn another bachelor's degree upon the successful completion of at least 36 additional units prescribed by a discipline, after the previous degree. *[680th BOR Meeting, 11 November 1960]*

On the other hand, graduates of other schools must have a GWA of 2.00 or better to be considered for admission to pursue a second degree in the University. *[Undergraduate Application Requirement, UP Los Baños; Second Degrees, UP Diliman, with reference to the 680th BOR Meeting, 01 November 1960]*

35. GRADUATION REQUIREMENTS

No student shall be recommended for graduation unless he has satisfied all academic and other requirements prescribed for graduation. *[Art. 404, UP Code 1961]* Further, a student with provisional admission may only be endorsed for graduation upon submission of complete entrance credentials. *[OVPAA Memo No. 2023-55 dated 27 April 2023]*

Candidates for graduation who began their studies under a curriculum more than ten (10) years old shall be governed by the following rules:

1. Those who have completed all the requirements of the curriculum but did not apply for, nor were granted, the corresponding degree or title shall have their graduation approved as of the date they should have originally graduated.
2. Those who have completed all but two (2) or three (3) subjects required by a curriculum shall be made to follow any of the curricula enforced from the time they first attended the University to the present. *[Art. 405, UP Code 1961]*

All candidates for graduation must have their deficiencies settled and their records cleared by the end of their last semester in their current degree program. *[Art. 407, as amended at the 1379th BOR Meeting, 03 April 2023]* The requirements for graduation include the completion of all academic and non-academic requirements such as submission of bound copies of the thesis, if thesis is required.

The deadlines for completion of requirements for graduation for those graduating as of the end of a particular term are:

As of the end of the First Semester:	day before the first day of regular registration for the second semester
As of the end of the Second Semester:	day before the college/school faculty meeting to decide the graduation of students
As of the end of the Midyear:	day before the first day of regular registration for the first semester

If some graduation requirements are completed beyond the deadline, the student must register during the succeeding semester to be considered a candidate for graduation as of the end of that semester.

No student shall be graduated from the University unless the student has completed at least one (1) year of residence work which may, however, be extended to a longer period by the proper faculty. The student must have been in residence in the semester of graduation. *[Art. 408, UP Code 1961; as amended at the 1352nd BOR Meeting, July 30, 2020; OVPAA Memorandum No. 2022-45 dated 28 March 2022]*

Students must file formal application as candidates for graduation with the offices of the Deans of their respective colleges/schools. *[UP Diliman Academic Information 1997]*

No student who fails to pay the required graduation fee *[as approved at the 1024th BOR Meeting, 24 August 1989]* within the specified period set by the University Registrar shall be conferred any title or degree. Such a student may, however, upon request and payment of the necessary fees, be given a certified copy of his/her credentials without specifying the completion of the requirements towards any title or degree. *[Art. 409, UP Code 1961; as amended at the 790th BOR Meeting, 19 December 1969 and 861st BOR Meeting, 29 May 1975]*

36. GRADUATION WITH HONORS

Students who complete their baccalaureate degree with the following absolute minimum weighted average grade shall be graduated with honors:

Summa cum laude	1.20
Magna cum laude	1.45
Cum laude	1.75

All the grades in all subjects prescribed in the curriculum, as well as subjects that qualify as electives, shall be included in the computation of the weighted average grade.

In cases where electives taken are more than those required in the program, the following procedure would be followed in selecting the electives to be included in the computation of the weighted average grade: *[Art. 410, UP Code 1961; as amended at the 958th BOR Meeting, 24 February 1983]*

a. For students who did not shift programs, consider the required number of electives in chronological order.
b. For students who shifted from one program to another, the electives to be considered shall be selected according to the following order of priority.
    i. Electives taken in the program where the student is graduating will be selected in chronological order.
    ii. Electives taken in the previous program and acceptable as electives in the second program will be selected in chronological order.
    iii. Prescribed courses taken in the previous program but qualify as electives in the second program will be selected in chronological order.

Additional Rules

- Students who are candidates for graduation with honors must have completed in the University at least 75% of the total number of academic units or hours for graduation and must have been in residence in the semester of graduation. *[Art. 412, UP Code 1961; as*

amended at the 1352nd BOR Meeting, 30 July 2020]

- In the computation of the final average of candidates for graduation with honors, only resident credits shall be included. *[Art. 413, UP Code 1961]*

- Students who are candidates for graduation with honors must have taken during each semester/trimester/quarter not less than 15 units of credit or the normal load prescribed in the curriculum in cases where such normal load is less than 15 units, unless the lighter load was due to justifiable causes such as health reasons, the unavailability of courses needed in the curriculum to complete the full load, there are no more courses that can be taken based on the curriculum, or the fact that the candidate is a working student or enrolled in a foreign university as a cross-registered student. *[Art. 414, UP Code 1961; as amended at the 886th BOR Meeting, 28 April 1977, the 1352nd BOR Meeting, 30 July 2020, and the 1379th BOR Meeting, 03 April 2023]*

  To justify underloading, the submission of pertinent documents is required, as follows:

  a. For health reasons - medical certification to be confirmed by the University Health Service.

  b. For unavailability of courses - certification by the major adviser and copy of schedule of classes.

  c. For employment - copy of payroll and appointment papers indicating among others duration of employment.

  It is the responsibility of the student to establish beyond reasonable doubt the veracity of the cause(s) of the light loading. It is required in this connection that documents submitted to establish the cause(s) of his/her loading, such as certificate of employment and/or medical certificate, must be sworn to. These documents must be submitted during the semester of underloading. *[as approved by the UP President on 19 October 1981]*

- For UPV, students who are candidates for graduation with honors must have no grade of "4" or "5" in all courses prescribed by their program. *[58th UPV UC Meeting, 08 April 2000; Special UPV UC Meeting, 11 July 2022]*

37. COMMENCEMENT EXERCISES

Attendance at general commencement exercises shall be optional. Graduating students who choose not to participate in the general commencement exercises must inform their respective deans or their duly designated representatives at least ten (10) days before the commencement exercises. *[Art. 418, as amended at the 793rd BOR Meeting, 07 April 1970]*

Graduating students who absent themselves from the general commencement exercises shall obtain their diplomas, or certificates, and transcript of records from the OUR provided that they comply with the above provision and upon presentation of the receipt of payment of the graduation fee and student's clearance. *[Art. 419, as amended at the 790th BOR Meeting, 19 December 1969 and 793rd BOR Meeting, 07 April 1970]*

Academic Costumes

Candidates for graduation with degrees or titles which require no less than four (4) years of collegiate instruction shall be required to wear academic costumes during the baccalaureate service and commencement exercises in accordance with the rules and regulations of the University. *[Art. 422, UP Code 1961]*

The University now uses the *Sablay* in place of the cap and gown or the graduation toga. It should be used only during academic functions and activities. Formal clothing should be worn with the *Sablay* as a sign of respect, it being the official academic costume of the University, and to preserve the solemnity and dignity of the occasions when it is worn. *[Sablay Handbook 2021; 1315th BOR Meeting, 26 February 2016]*

38. TRANSCRIPTS

Student records are confidential, and information is released only at the request of the student or of appropriate institutions. "Partial" transcripts are not issued; thus, any credits earned in the graduate level becomes a part of the permanent record of the student. Official transcripts of records obtained from other institutions, and which have been submitted to the University for admission and/or transfer of credit also become a part of the student's permanent record and are issued as true copies with the UP transcript. Application for transcript of records should be accompanied by a student clearance.

CATALOGUE OF UNDERGRADUATE DEGREE PROGRAMS

COLLEGE OF ARTS AND SCIENCES

The College of Arts and Sciences (CAS) was originally UP Iloilo College (UPIC) established on 01 July 1947, initially with 16 faculty members, 223 students and five (5) preparatory programs. UPIC became a full-fledged college in 1954 offering undergraduate and graduate degree programs and a four-year high school diploma. Later, UPIC changed its name to UP College Iloilo (UPCI). Upon the establishment of an autonomous University of the Philippines in the Visayas on 31 May 1979, UPIC became the College of Arts and Sciences.

The CAS offers most of the general education courses that are the foundation of all academic programs of the University. The College equips the students with basic knowledge in the natural sciences, social sciences and humanities; the skills necessary to communicate and to analyze and integrate knowledge; and the ability to learn independently and think critically. It offers four-year interdisciplinary programs with double majors supportive of or complementary to those offered by other colleges.

As a college composed of various disciplines, including a Division of Professional Education which supervises a laboratory high school designed to train underprivileged youth, especially from rural areas, the CAS takes the lead in strengthening programs related to technology transfer, professional competence, and values clarification, inculcating in the student a better understanding of himself/herself as a Filipino with a deep sense of nationalism and pride in the cultural heritage.

The CAS building in the UPV main campus houses the administrative offices of the Dean, College Secretary, offices of the Chairs and faculty members of the Divisions of Biological Sciences, Humanities, Physical Sciences and Mathematics, and Social Sciences and the Departments of Chemistry and Physical Education, classrooms, biological, chemical and physical laboratories, audio visual room, computer laboratories, Multimedia Hub, research rooms and Analytical Services Laboratory.

Part of CAS is found in the Iloilo City campus such as the offices of the UPHSI Principal and the Division Chair and faculty members of the Division of Professional Education.

The CAS has a number of facilities that supplement the tripartite functions of Instruction, Research, and Extension activities of the CAS faculty. These are the Center for West Visayan Studies, the Marine Biological Station in Taklong Island, Guimaras, the CAS Language Program, DYUP 107.2 FM, the Multimedia Hub, Computer Laboratories, Community Outreach Program (BIDANI) - Barangay Integrated Development Approach for Nutrition Improvement of the Rural Poor, and the Analytical Services Laboratory.

VISION

A premier institution of liberal arts and science education sensitive and responsive to the needs of changing times locally and internationally.

MISSION

Through programs in the liberal arts and sciences, the College of Arts and Sciences seeks to:

1. Nurture the intellectual and creative capabilities of empowered individuals and groups for responsible citizenship through an understanding and appreciation of socio-cultural traditions.
2. Be a dynamic college that inculcates in the students:
    - ❖ Basic knowledge in the natural and social sciences and the humanities
    - ❖ Skills necessary to communicate and to analyze and integrate knowledge
    - ❖ Ability to learn independently and think critically; and
    - ❖ A strong sense of nationalism
3. Engage in research and public service activities that project commitments to the value of heritage, democratic expression, scientific progress, and community development.

UNDERGRADUATE PROGRAMS

Aside from offering single major areas of concentration, the CAS also offers four-year interdisciplinary programs with double majors designed to provide graduates with a reasonable grasp of knowledge, skills and values in two (2) related mutually reinforcing disciplines and fields.

1. Bachelor of Arts
   Community Development
   History
   Sociology
2. Bachelor of Arts in Communication and Media Studies
3. Bachelor of Arts in Literature
4. Bachelor of Arts in Political Science
5. Bachelor of Arts in Psychology
6. Bachelor of Science in Applied Mathematics
7. Bachelor of Science in Biology
8. Bachelor of Science in Chemistry
9. Bachelor of Science in Computer Science
10. Bachelor of Science in Economics
11. Bachelor of Science in Public Health
12. Bachelor of Science in Statistics

ADMISSION AND RETENTION POLICIES

Bachelor of Science in Biology

Retention Policy

The student must pass both Biology 14 and Chemistry 23 in the first year.

Bachelor of Science in Chemistry

Retention Policy

Passing grade of 2.75 for Chemistry, Math and Physics courses after the first year.

Bachelor of Arts in Communication and Media Studies

Admission Policy

The BA in Communication and Media Studies program shall admit freshman students who qualify through the UP College Admission Test (UPCAT). Applicants from other schools who wish to transfer into the program must satisfy all entrance requirements of the University and must have a general weighted average (GWA) of 1.75 or better or its equivalent with no failing grade in English and Communication-related courses. In addition, they should pass a written examination and interview prior to admission.

Students from other degree programs within the University who wish to shift into the CMS program must have an average grade of 2.0 in English and Communication-related courses and should also pass written and oral examinations.

Retention Policy

A student must maintain an average grade of 2.25 or better in all CMS core courses to remain in the program. The student's performance shall be evaluated at the end of the second year or upon completion of 24 units of the core courses in CMS 21, CMS 31, CMS 100, CMS 101, CMS 102, CMS 103, CMS 104 and CMS 105.

A failing grade in any of the CMS courses will serve as a basis for putting the student on probation. To remove the probationary status, the student should pass all CMS courses enrolled in the succeeding semester.

A student who incurs a general weighted average (GWA) below 2.75 shall be put on probation. To remove the probationary status, the student should attain an average grade of at least 2.25 in all CMS core courses and a general weighted average of 2.75 or better in the succeeding semester.

Bachelor of Arts in Literature

Admission Policy

Students from other degree programs and other educational institutions may be accepted into the Literature program provided they have earned a grade of at least 2.25 or its equivalent in all English and Literature-related courses taken. They also need to pass oral and written exams.

Retention Policy

To stay in the program, a student must attain a cumulative general weighted average (GWA) of 2.5 or better in the following literature courses: Lit 100, CS 101, Lit 103, Lit 130 and CW 101.

Bachelor of Science in Computer Science

Retention Policy

To stay in the program, a student must earn at least 60% of the total number of units enrolled in an academic year (including midyear) and must not have a grade of 5.0 in more than three (3) foundation and major courses per semester.

CAS COURSES

DIVISION OF BIOLOGICAL SCIENCES

General Education Courses

Science

11 **Living Systems: Concepts and Dynamics**
Principles, interactions, and contemporary issues concerning living systems

3 units (3 hrs lec)
Prerequisite: None

Science, Technology and Society (STS)

1 **Science, Technology and Society**

Analyses of the past, present and future of science and technology in society (including their nature, scope, role and function) and the social, cultural, political, economic and environmental factors affecting the development of science and technology, with emphasis on the Philippine setting.

3 units (3 hrs lec)
Prerequisite: None

Undergraduate Courses

Biology (Bio)

10 **General Biology**
Basic aspects and principles of Biology with emphasis on microorganisms and parasites.

5 units (3 hrs lec, 6 hrs lab)
Prerequisite: None

11 **Fundamentals of Biology I**
The fundamentals of Biology from the molecular and cellular levels up to organ systems of organization, except the reproductive system.

5 units (3hrs lec, 6 hrs lab)
Prerequisite: Chem 11

12 **Fundamentals of Biology II**
The fundamentals of Biology including the reproductive system, developmental biology, genetics, systematics, evolution and ecology.

5 units (3 hrs lec, 6 hrs lab)
Prerequisite: Bio 11

14 **Integrative Biology**
A comprehensive course in Biology that covers fundamental principles, concepts, and applications in the Life Sciences

5 units (3 hrs lec, 6 hrs lab)
Prerequisite: None

100 **Biotechnique**
Collection and preparation of plant and animal materials for microscopic study; museum methods; scientific illustrations.

3 units (1hr lec, 6 hrs lab)
Prerequisite: Bio 14 or Bio 12

120 **General Microbiology**
Taxonomy, morphology, ecology and economic value of microorganisms; microbiological techniques.

3 units (3 hrs lec)
Prerequisites: Bio 14 and Chem 31

Biology (Bio)

120.1 General Microbiology Laboratory
2 units (6 hrs lab)
Prerequisite: Must be preceded or accompanied by Bio 120

140 Elementary Genetics
Principles of heredity and variation.
3 units (3 hrs lec)
Prerequisites: Bio 14, Chem 40, and Bio 180

150 Introduction to Molecular and Cell Biology.
Principles of cell biology.
3 units (3 hrs lec)
Prerequisite: Chem 40 or Consent of the Instructor

151 Environmental Management
Principles of environmental management; technological development and activities affecting the environment and pertinent case studies.
3 units (3 hrs lec)
Prerequisite: Bio 150 (Introduction to Molecular and Cell Biology) or COI

152 Principles of Molecular Biology and Biotechnology
Principles of molecular biology and its application in biotechnology
4 units (3hrs lec, 3 hrs lab)
Prerequisite: Chem 40

160 Ecology
Study of the principles governing the relationships of organisms with their environment, the productivity and energy flow in ecosystems, and change and development of these ecosystems.
3 units (3 hrs lec)
Prerequisite: Taxonomy course

160.1 Ecology Laboratory
2 units (6 hrs lab)
Prerequisite: Bio 160

162 Tropical Coasts, Biodiversity, Ecology and Conservation
Tropical coastal ecology focused on processes, mechanisms and factors that shape the coasts, its biodiversity and integrity.
4 units (2hrs lec, 6 hrs lab)
Prerequisites: Bio 160, Bio 160.1, and PE 2 (Swimming)

175 Coastal Flora: **Mangroves and Beach Forest Species**
Introduction to Mangroves and beach forest species including their biology, anatomy, taxonomy, ecology and utilization; Issues on conservation, management, protection.
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: Bio 14

180 Statistical Methods in Biology
3 units (2 hrs lec, 6 hrs lab)
Prerequisite: None

185 Marine Mycology: The Biology of Marine Tropical Fungi
Introduction to the biology, ecology, taxonomy of higher fungi in sandy beaches, sea foam, tidal marshes, mangroves, tropical shoreline trees, leaves, rhizhomes, bark, animal substrates. Additional topics include fungal-animal relationships, ontogeny, physiological process and metabolite production.
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: Bio 14

Biology (Bio)

189 Technical Writing in the Life Sciences
Preparation and writing of scientific papers including papers for oral presentation as well as ethics, rights and permission.
3 units (3 hrs lec)
Prerequisite: At least 40 units of major courses completed

191 Biological Evolution
Theories, principles, and mechanisms of evolution.
3 units (3 hrs lec)
Prerequisite: Bio 140

195 Practicum in Biology
Planned, supervised, and evaluated real world learning to enrich classroom experiences in an area or different areas of Biology
3 units
Prerequisite: At least Junior Standing (at least 40-unit credits of major courses); MOA or formal agreement with intended host institution or agency

196 Seminar in Biology
1 unit (may be repeated for an additional 1 unit) (1 hr)
Prerequisite: Senior Standing

199 Research in Biology
3 units
Prerequisite: Senior Standing

199.1 Research in Biology I
Methods and approaches in biological research. Formulation, preparation and writing of a research proposal in Biology.
3 units
Prerequisite: Completion of at least 82 units of foundation, major courses and qualified electives

199.2 Research in Biology II
Conduct and writing of biological research: data collection, analysis, writing and presentation
3 units
Prerequisite: Bio 199.1

Botany (Bot)

10 General Botany
The structure, function, classification, heredity and evolution of plants.
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: None

104 Algae, Fungi and Lichens
Evolutionary morphology, classification and ecology.
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: Bio 12 or COI

111 Plant Morphoanatomy and Diversity
Developmental patterns, morphoanatomy, evolution and taxonomy of Kingdom Plantae.
3 units (3 hrs lec)
Prerequisite: Bio 14

111.1 Plant Morphoanatomy and Diversity Laboratory
2 units (6 hrs lab)
Co-requisite: Bot 111

121 Elementary Plant Physiology
Lectures and laboratory dealing with the fundamental aspects of the activities of plants, such as plant nutrition, absorption and translocation of materials, growth, movement and reproduction.
5 units (3 hrs lec, 6 hrs lab)
Prerequisites: Bio 14 or Bio 12 or equivalent, Phys 23 or equivalent, and Chem 40

Botany (Bot)

182 Economic Botany
Economic plants and plant products.
3 units (3 hrs lec)
Prerequisite: Bio 14 or Bio 12

Environmental Science (ENS)

101 Introduction to Environmental Science
The course will deal primarily with some basic principles of ecology and the following environmental issues: population, sustainable use of renewable and nonrenewable resources, and environmental degradation due to pollution and different forms of disturbance in the ecosystem.
3 units (3 hrs lec)
Prerequisite: None

110 Environmental Impact Assessment
The course will deal primarily with the methods used in environmental impact assessment including collection of environmental and social baseline data, impact assessment, prediction, selection of alternatives and provision of mitigating measures and the preparation of an environmental impact statement
3 units (3 hrs lec)
Prerequisite: Bio 160

120 Biological Resource Management
Methods and approaches in the conservation and management of renewable and nonrenewable resources including biodiversity and land use.
3 units (3 hrs lec)
Prerequisite: Bio 160

Marine Biology (MB)

110 Marine Plants
Morphology, taxonomy and economic importance.
3 units (2 hrs lec, 6 hrs lab)
Prerequisite: Bio 14 or Bio 12

111 Marine Invertebrates
Morphology, taxonomy, and ecology of marine invertebrates.
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: Bio 14

112 Marine Vertebrates
Morphology, taxonomy and ecology of marine vertebrates.
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: Bio 14 or Bio 12

114 Marine Plankton
Morphology, taxonomy and distribution.
3 units (1 hr lec, 6 hrs lab)
Prerequisite: MB 111 or equivalent

131 Marine Animal Embryology
Basic principles and development in representative forms.
5 units (3 hrs lec, 6 hrs lab)
Prerequisites: MB 111 and 112 or their equivalents

143 Marine Benthos
Systematics and eco-morphology of representative marine benthos, focusing on the epi-/infaunal assemblages, the physical factors that govern their abundance and distribution, and the ways to sample and study them
5 units (3 hrs lec, 6 hrs lab)
Prerequisites: Zoo 111, Zoo 111.1, Bio 160, and Bio 160.1

Marine Biology (MB)

161 Biological Productivity of the Sea
Marine primary productivity and the factors affecting it; energy transfers in different trophic levels of the food chain; techniques in productivity measurements.
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: Senior Standing

Microbiology (MCB)

101 Advanced Microbiology
Principles and techniques for the morphological, cultural and physiological characterization of selected groups of microorganisms.
3 units (1hr lec, 6 hrs lab)
Prerequisite: Bio 120 or equivalent

120 Microbial Physiology
Physiological processes in microorganisms including a study of structure, energy, production, macromolecular biosynthesis, and nutrition and growth.
3 units (3 hrs lec)
Prerequisite: Bio 120 or equivalent and Chem 40

143 Virology
Study of the evolution, composition, classification, life cycle, pathogenesis, and spread of viruses and subviral agents, including control strategies and applications of virology
3 units (3 hrs lec)
Prerequisite: Bio 120

145 Fungi of Medical Importance
Direct and/or indirect impacts of fungi on human health as infectious agents on human health.
3 units (2 hrs lec, 3 hrs lab)
Prerequisites: PH 151 or Bio 120 and Bio 120.1

148 Microbial Genetics
Basic concepts of microbial genetics and bacterial genomes.
3 units (3 hrs lec)
Prerequisites: PH 151 or Bio 120 and Bio 120.1

150 Microbial Ecology
An introduction to the basic principles of microbial ecology; interrelationships of bacteria, fungi, algae and protozoa in natural systems.
3 units (2 hrs lec, 3 hrs lab)
Prerequisites: Bio 120 and Bio 120.1 or equivalent

160 Industrial Microbiology
Microorganisms, principles and processes involved in industrial fermentation.
3 units (3 hrs lec)
Prerequisites: Bio 120 or equivalent and Chem 40

Public Health (PH)

101 Health Challenges in Island Contexts
Introduction into health concepts and determinants of health within island contexts from a national and global perspective.
3 units (3 hrs lec)
Prerequisite: None

110 Bioethics
Introduction to the principles and concepts of ethics in the biomedical field.
3 units (3 hrs lec)
Prerequisite: None

Public Health (PH)

115 Introduction to Bioinformatics and Health Informatics
Introduction to methods for biological and health data analysis using mathematical and computational tools.
3 units (3 hrs lec)
Prerequisite: None

120 Human Anatomy and Physiology
Introductory course on the study of the anatomy and physiology of the human body
5 units (3 hrs lec, 6 hrs lab)
Prerequisites: Zoo 102 and Zoo 102.1, Chem 31 and Chem 31.1

121 General Pathology
Basic cellular and structural changes occurring in diseases and how these affect functions of organs and systems. A thorough training on laboratory techniques and procedures is also given.
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: PH 121

122 General Pathology
Basic cellular and structural changes occurring in diseases and how these affect functions of organs and systems. A thorough training on laboratory techniques and procedures is also given.
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: PH 120

125 Non-communicable Diseases
Non-communicable diseases, injuries and natural emergencies in a global health perspective
3 units (3 hrs lec)
Prerequisite: None

128 Disaster Preparedness and Risk Management in Public Health
Introduction to health emergencies and risk management during disasters.
3 units (3 hrs lec)
Prerequisite: None

131 Physiology
Fundamentals of human physiology.
3 units (2 hrs lec, 3 hrs lab).
Prerequisites: Zoo 102/102.1 and Chem 31/31.1.

135 Complementary and Alternative Medicine
Introduction of the different alternative and complementary medical interventions in the Philippines, their effectivity, and socio-cultural implications in public health.
3 units (3 hrs lec)
Prerequisite: None

137 Health Leadership and Governance
Introduction to the basic principles of leadership and governance in health.
3 units (3 hrs lec)
Prerequisite: None

141 Biostatistics for Public Health
Application of basic computational and statistical techniques commonly used in the analysis of public health and biomedical data.
4 units (3 hrs lec, 3 hrs lab)
Prerequisite: None

147 Genetics
The principles of genetics and their application at the individual and community levels.
2 units (2 hrs lec)
Prerequisite: Senior Standing

Public Health (PH)

151 Principles of Microbiology
Basic properties of bacteria, viruses and fungi and basic concepts of immunology.
4 units (2 hrs lec, 6 hrs lab)
Prerequisites: Chem 23/23.1 and Chem 31/31.1

152 Medical and Public Health Microbiology
Bacteria, viruses, and fungi of medical importance with emphasis on characteristics useful in isolation and identification, capacity to produce disease, distribution, and propagation.
5 units (3 hrs lec, 6 hrs lab)
Prerequisites: PH 151 or Bio 120 and Bio 120.1

160 Global Health and Development
Exploration of the different factors that explain the unequal distribution of health and disease globally.
3 units (3 hrs lec)
Prerequisite: None

161 Human Biochemistry
Fundamentals of human biochemistry.
4 units (3 hrs lec, 3 hrs lab)
Prerequisites: Chem 31 and Chem 31.1

162 Nutrition.
Nutrients and nutritive factors essential to health.
3 units (2 hrs lec, 3 hrs lab)
Prerequisites: Chem 23/23.1 and PH 161
Co-requisite: PH 120

163 Medical Biotechnology
Techniques, approaches, processes, and products of medical biotechnology.
3 units (3 hrs lec)
Prerequisite: PH 161

164 Translational Research
Introduction to the principles and practice of translational research.
3 units (3 hrs lec)
Prerequisite: PH 161

165 Contemporary Issues in Public Health
Introduction to the understanding and appreciation of current unique and important mission of public health.
3 units (3 hrs lec)
Prerequisite: None

166 Clinical Chemistry
Chemical analysis of biological specimens.
4 units (2 hrs lec, 6 hrs lab)
Prerequisite: PH 162

167 Gender and Public Health
Gender concepts, frameworks, and issues with specific reference to health, health promotion and health education.
3 units (3 hrs lec)
Prerequisite: None

172 Medical Helminthology and Protozoology
General principles of parasitism as illustrated by the helminthic and protozoan parasites of man and their relation to human disease.
4 units (2 hrs lec, 6 hrs lab)
Prerequisites: PH 121, PH 131, and PH 161

173 Medical Parasitology and Entomology
Medically important protozoans, helminths and arthropods, their basic morphology, life cycles, diseases, diagnosis, and control and prevention.
5 units (3 hrs lec, 6 hrs lab)
Prerequisites: PH 120 and PH 161

Public Health (PH)

175 Environmental and Occupational Health
Examination of health issues, scientific understanding of causes, and possible approaches, including laboratory techniques, to control the major environmental health problems and occupation-related illnesses.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: PH 152
Co-requisite: PH 173

177 Medical Entomology
Morphology, biology and control of arthropods infecting man.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: PH 172

180 Epidemiology
Practical application of the basic principles and methods of epidemiology, including the use of different statistical software, for the identification and control of diseases of public health importance.
4 units (2 hrs lec, 6 hrs lab)
Prerequisites: PH 141and PH 152
Co-requisites: PH 173 and PH 175

181 Molecular Epidemiology
A survey of and introduction to the methods and issues arising in genetics and molecular epidemiology.
3 units (3 hrs lec)
Prerequisites: PH 161 and PH 180

182 Disease Surveillance and Outbreak Investigation
Epidemiological principles to investigate and contain outbreaks; their public health implications.
3 units (3 hrs lec)
Prerequisite: PH 180

183 Immunology, Serology and Blood Banking
Introduction to principles and applications of immunology, serology, and blood banking in clinical practice.
3 units (1 hr lec, 6 hrs lab)
Prerequisites: PH 120, PH 152, PH 173

184 Clinical Microscopy
Microscopic and macroscopic examinations of biological specimens, including hematology, bloodbanking, urine and other body fluid analysis and exfoliative cytology.
5 units (3 hrs lec, 6 hrs lab)
Prerequisites: PH 122, PH 152, PH 172

185 Hematology and Clinical Microscopy
Microscopic and macroscopic examinations of biological specimens, including hematology, urine and other body fluid analysis and exfoliative cytology.
3 units (1 hr lec, 6 hrs lab)
Prerequisites: PH 120, PH 152, and PH 173

186 Public Health Administration and Health Education
The structure of official and non-official agencies or institutions participating in public health administration. The principles and methods of public health education are emphasized.
3 units (3 hrs lec)
Prerequisites: PH 152 and PH 172
Co-requisite: PH 175

187 Public Health Education and Promotion
Introduction to concepts, principles, theories, and models of health education and promotion and application of these theories to designing a health intervention program.
3 units (3 hrs lec)
Prerequisites: PH 152, PH 173, and PH 175

188 Public Health Policy and Administration
Introduction to the health systems, administration, management, public policy development and analysis of policy issues and impact on public health.
3 units (3 hrs lec)
Prerequisites: PH 152, PH 173, and PH 175

Public Health (PH)

189 Medical Technology Laws and Public Health Ethics
Introduction to the rules and regulations that govern the practice of medical technology in the Philippines and the ethics observed in the practice of medical technology.
1 unit (1 hr lec)
Prerequisite: Junior Standing

195 Public Health Practice
Application of concepts, principles, and methods in public health in a community and hospital setting.
5 units (240 hrs or 8 hrs/day, 6 weeks)
Prerequisites: PH 162, PH 180, PH 187, and PH 188

196 Seminar
1 unit (1 hr)
Co-requisite: PH 199

199 Special Studies and Research
3 units
Prerequisites: PH 162, PH 180, PH 187, and PH 188

Zoology (Zoo)

10 Fundamentals of Zoology.
Basic aspects and principles of Zoology.
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: None

102 Comparative Anatomy of Vertebrates
Phylogenetic development of the organ systems in the various classes of vertebrates.
3 units (3 hrs lec)
Prerequisite: Bio 14

102.1 Comparative Anatomy of Vertebrates Laboratory
2 units (6 hrs lab)
Prerequisite: Must be accompanied or preceded by Zoo 102

106 General Histology
Structures of representative invertebrate and vertebrate tissues.
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: Bio 14

111 Invertebrate Zoology
General survey of the invertebrates.
3 units (3 hrs lec)
Prerequisite: Bio 14

111.1 Invertebrate Zoology Laboratory
2 units (6 hrs lab)
Prerequisite: Must be preceded or accompanied by Zoo 111

113 Parasitology
Origin and degree of parasitism, structural peculiarities of parasites, life cycles and host-parasite relationship.
5 units (3 hrs lec, 6 hrs lab)
Prerequisites: Zoo 102 or Zoo 111.1

120 Animal Physiology
Principles of functional zoology with emphasis on physiological adaptations.
3 units (3 hrs lec)
Prerequisite: Senior Standing or consent

120.1 Animal Physiology Laboratory
2 units (6 hrs lab)
Prerequisite: Must be preceded or accompanied by Zoo 120

Zoology (Zoo)

131 Introduction to Developmental Biology of Animals
Principles of development, mechanisms of cellular differentiation, specification of cell fate and embryonic axes, as well as cellular interactions during organogenesis.
3 units (3 hrs lec)
Prerequisites: Zoo 102, Zoo 111, Bio 152

131.1 Introduction to Developmental Biology of Animals Laboratory
2 units (6 hrs lab)
Prerequisite: Must be accompanied or preceded by Zoo 131

132 Vertebrate Embryology
Processes and theories of development of representative vertebrates.
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: Zoo 102

DEPARTMENT OF CHEMISTRY

Undergraduate Courses

Chemistry (Chem)

11 General and Inorganic Chemistry
The essentials of general inorganic college chemistry. The fundamental principles of the subject and the practical application to the industries and everyday life.
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: Math 11 or equivalent

14 Elementary Inorganic and Organic Chemistry
Certain fundamental principles and the more important applications of inorganic and organic chemistry for the biological field, both pure and applied.
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: Math 11 or equivalent

16 General Chemistry I
Principles of Chemistry I.
3 units (3 hrs lec)
Prerequisite: None

16.1 General Chemistry I Laboratory
Fundamental techniques and skills in Chemistry Laboratory Part I
2 units (6 hrs lab)
Co-Requisite: Chem 16

17 General Chemistry II
Principles of Chemistry II.
3 units (3 hrs lec)
Prerequisites: Chem 16

17.1 General Chemistry II Laboratory
Fundamental techniques and skills in Chemistry Laboratory Part II
2 units (6 hrs lab)
Prerequisites: Chem 16 and Chem 16.1
Co-Requisite: Chem 17

23 Inorganic Analytical Chemistry
Principles and applications of classical and instrumental methods of analyses.
3 units (3 hrs lec)
Prerequisites: None

23.1 Inorganic Analytical Chemistry Laboratory
Classical and instrumental methods of analyses
2 units (6 hrs lab)
Co-requisite: Chem 23

Chemistry (Chem)

28 Analytical Chemistry I
Chemical principles and applications of titrimetric analyses in acid-base, complexation, redox and precipitation reactions, gravimetric method of analysis, and introduction to instrumental methods.
3 units (3 hrs lec)
Prerequisite: Chem 17

28.1 Analytical Chemistry I Laboratory
Application of experimental techniques used in analytical chemistry to develop the skills needed in performing gravimetric and titrimetric methods of analyses.
2 units (6 hrs lab)
Prerequisite: To be accompanied or preceded by Chem 28

31 Elementary Organic Chemistry
Introduction to modern theories of inorganic chemistry. Correlation of structure with properties of organic compounds. Basic laboratory techniques in elementary organic chemistry.
3 units (3 hrs lec)
Prerequisite: Chem 23 or Chem 17

31.1 Elementary Organic Chemistry Laboratory
Basic Laboratory Techniques and Skills in Organic Chemistry
2 units (6 hrs lab)
Prerequisite: Chem 23.1and to be accompanied or preceded by Chem 31

33 Organic Chemistry I
Structure, nomenclature, stereochemistry, chemical properties, reactivity, basic synthesis, and spectroscopic analyses of saturated and unsaturated hydrocarbons.
3 units (3 hrs lec)
Prerequisite: Chem 17 or Chem 23

33.1 Organic Chemistry I Laboratory
Laboratory Techniques and Skills in Organic Chemistry I
2 units (6 hrs lab)
Co-requisite: Chem 23

34 Organic Chemistry II
Properties, reactivities, and reaction mechanisms of alkyl halides, alcohols, ethers, carbonyl compounds, and biomolecules
3 units (3 hrs lec)
Prerequisites: To be accompanied or preceded by 7 Chem 33 and Chem 33.1

34.1 Organic Chemistry II Laboratory
Laboratory Techniques and Skills in Organic Chemistry II
2 units (6 hrs lab)
Prerequisite: Chem 33.1
Co-requisite: Chem 34

35 Organic Chemistry III
Fundamental concepts in spectroscopy: UV-Vis spectroscopy, IR spectroscopy, Mass spectrometry, 1H NMR spectroscopy, 13 C NMR spectroscopy, 2D NMR techniques.
3 units (3 hrs lec)
Prerequisite: Chem 34

40 General Biochemistry
Structure-function relationship and the metabolism of the four biomolecules
3 units (3 hrs lec)
Prerequisite: Chem 31 or equivalent

40.1 General Biochemistry Laboratory
Basic Laboratory Techniques and Skills in Biochemistry
2 units (6 hrs lab)
Prerequisite: To be accompanied or preceded by Chem 40

112 Inorganic Chemistry I
Principle and trends in the chemistry of the elements; structure, bonding, and reactivity of inorganic systems.
3 units (3 hrs lec)
Prerequisite: Chem 17

Chemistry (Chem)

113 Inorganic Chemistry II
Study of the chemistry of the inner transition metal elements, principles of structure, bonding, electronic properties, and reaction mechanisms of coordination and organometallic compounds.
3 units (3 hrs lec)
Prerequisites: Chem 112 and Chem 156

126 Analytical Chemistry II
Principles, theories and techniques of instrumental methods of analysis.
3 units (3 hrs lec)
Prerequisite: Chem 23 or 28, and Chem 31 or 34

126.1 Analytical Chemistry II Laboratory
Techniques in instrumental methods of analyses.
2 units (6 hrs lab)
Prerequisite: Chem 28.1
Co-requisite: Chem 26

127 Analytical Chemistry III
Metrology in analytical chemistry, principles and methods of quality assurance, application of statistics in the evaluation of chemical measurements, introductory chemometrics.
3 units (3 hrs lec)
Prerequisites: Chem 126, Stat 102

127.1 Analytical Chemistry III Laboratory
Evaluation of chemical data, techniques of quality assurance in the analysis of real-world samples.
1 unit (3 hrs lab)
Prerequisite: Chem 126.1
Co-requisite: Chem 127

145 Biochemistry I
General principles of Biochemistry I: Structure and function of biomolecules.
3 units (3 hrs lec)
Prerequisite: Chem 34

145.1 Biochemistry I Laboratory
Skills and techniques in Biochemistry I laboratory
2 units (6 hrs lab)
Co-requisite: Chem 145

146 Biochemistry II
General principles of biochemistry II: Metabolic Pathways, Mechanisms, and Regulation.
3 units (3 hrs lec)
Prerequisite: Chem 145

153 Physical Chemistry
Chemical thermodynamics.
3 units (3 hrs lec)
Prerequisite: Math 55 or equivalent, Chem 23 or Chem 28

156 Physical Chemistry I
Chemical thermodynamics and equilibrium processes.
3 units (3 hrs lec)
Prerequisite: Chem 28, Math 55 or equivalent

156.1 Physical Chemistry I Laboratory
Experimental applications of chemical thermodynamics and equilibrium processes.
2 units (6 hrs lab)
Prerequisite: Chem 28.1
Co-requisite: Chem 156

157 Physical Chemistry II
Chemical kinetics; fundamentals of equilibrium reactions; theory of rate processes; applications of kinetics to the study of reaction mechanisms.
3 units (3 hrs lec)
Prerequisite: Chem 156

Chemistry (Chem)

157.1 Physical Chemistry II Laboratory
Experimental application of chemical reaction kinetics, transport phenomena and surface processes.
2 units (6 hrs lab)
Prerequisite: Chem 156.1
Co-requisite: Chem 157

158 Physical Chemistry III
Fundamental Concepts of Quantum Chemistry.
3 units (3 hrs lec)
Prerequisites: Chem 34 and Math 55

174 Industrial Chemistry
Introduction to chemical process industries (CPI); quality in manufacturing industries; environmental impact of chemical industries; process variables.
3 units (3 hrs lec)
Prerequisite: Chem 195

175 Geochemistry
Chemistry of the natural world and the chemical evolution of the earth over geologic time.
3 units (3 hrs lec)
Prerequisite: Chem 17

176 Bioanalytical Methods
Principles and techniques of analytical separations and instrumental methods of analysis for the detection and determination of biomolecules and biologically active molecules
3 units (3 hrs lec)
Prerequisites: Chem 126 and Chem 145

177 Introduction to Physical Methods in Materials Science
Comprehensive overview of the most important and state-of-the-art materials characterization techniques which include surface analysis techniques, X-ray diffraction, microscopy, thermal analyses, mechanical testings, and spectroscopies.
3 units (3 hrs lec)
Prerequisites: Chem 126 and Chem 158

178 Spectroscopic Methods in Inorganic Chemistry
Principles and methods of various spectroscopic techniques employed in the characterization of coordination compounds.
3 units (3 hrs lec)
Prerequisites: Chem 112 and Chem 158

179 Materials Chemistry
Synthesis, structure, properties and applications of solid materials.
3 units (3 hrs lec)
Prerequisites: Chem 126 and Chem 157

180 Bioinorganic Chemistry
Metals and their various roles in biomolecules.
3 units (3 hrs lec)
Prerequisites: Chem 112, Chem 145

181 Technical Methods of Analysis
Technical methods on proximate analyses, physico-chemical analyses of fats and oils, phytochemical screening, and selected water analyses.
3 units (1 hr lec, 6 hrs lab)
Prerequisites: Chem 28 and Chem 34

182 Polymer Chemistry
Introduction to classification, reactions and characterization and synthesis of polymers.
3 units (3 hrs lec)
Prerequisite: Chem 34/31

183 Chemistry of Sugar Processing
Processes and Chemistry of Sugar Manufacturing.
3 units (2 hrs lec, 3 hrs lab)
Prerequisites: Chem 28 and Chem 34

Chemistry (Chem)

184 Chemistry of Food and Food Products
Chemical composition of foods and its effect on texture, flavor, color, and nutritive value.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: COI

185 Natural Products Chemistry
Introduction to secondary metabolites; classification, biosynthesis, isolation, structure elucidation techniques, application to drug discovery.
3 units (3 hrs lec)
Prerequisite: Chem 145

186 Aquatic Chemistry
Chemical composition of natural water, chemical equilibria and physical properties of natural water and aqueous electrolytic solution.
3 units (3 hrs lec)
Prerequisite: Chem 17

187 Soil Chemistry
Principles of soil chemistry and its impact to the environment.
3 units (3 hrs lec)
Prerequisite: Chem 17 or Chem 23

188 Chemical Toxicology
Chemical transformations of the pollutants in the environment.
3 units (3 hrs lec)
Prerequisite: Chem 40 or Chem 145

189 Environmental Chemistry
Environmental chemistry principles and its applications.
3 units (2 hrs lec, 3 hrs lab)
Prerequisites: Chem 31 or 34, Chem 31.1 or 34.1, and Chem 23 or 28

195 Practicum
Internship in chemical industries per area of specialization
3 units (minimum 200 hrs)
Prerequisite: Consent of adviser

196 Seminar
1 unit (1 hr)
Prerequisite: Senior Standing

199.1 Research
Research
3 units
Prerequisite: Senior Standing

200.1 Undergraduate Thesis I
Proposal and conduct of thesis.
2 units
Prerequisite: Comm 12

200.2 Undergraduate Thesis II
Thesis writing and defense.
2 units
Prerequisite: Consent of adviser

Geology (Geol)

11 Principles of Geology
Earth materials; nature and consequences of geologic processes.
3 units (3 hrs lec)
Prerequisite: None

DIVISION OF HUMANITIES

General Education Courses

ARTS

1 **Critical Perspectives in the Arts**
A critical study of the experience, language, and context of art.
3 units (3 hrs lec)
Prerequisite: None

COMM

10 **Critical Perspectives in Communication**
Theories and frameworks and communications in various contexts.
3 units (3 hrs lec)
Prerequisite: None

PHILARTS

1 **Philippine Arts and Culture**
3 units (3 hrs lec)
Prerequisite: None

WIKA

1 **Wika, Kultura at Lipunan**
Pagsusuri sa ugnayan ng wika, kultura at lipunan.
3 units (3 hrs lec)
Prerequisite: None

Undergraduate Courses

Communication (Comm)

11 **Professional Communication**
Development of core competencies in Professional Communication
3 units (3 hrs lec)
Prerequisite: Comm 10

12 **Technical Communication**
Foundations of technical communication with emphasis on effective writing and presentation of scientific/academics papers
3 units (3 hrs lec)
Prerequisite: Comm 10

Communication and Media Studies (CMS)

11 **Dynamics of Human Communication**
The psychology of human communication in various contexts; theories, concepts and processes of person-to-person communication and their application.
3 units (3 hrs lec)
Prerequisite: None

21 **Foundations of Media Writing**
Writing with emphasis on developing a sense of story for media
3 units (3 hrs lec)
Prerequisite: None

Communication and Media Studies (CMS)

31 Effective Oral Skills for Media Communication
Developing voice quality, pronunciation, diction, and vocal energy for media.
3 units (3 hrs lec)
Prerequisite: None

100 History of Media Communication
The history of the different forms of media communication and its role in the cultural and social context in society.
3 units (3 hrs lec)
Prerequisite: None

101 Introduction to Media Communication
The nature, function, operation and role of mass media in modern society.
3 units (3 hrs lec)
Prerequisite: None

102 Communication and Media Theories
A closer look at various theories about messages themselves, as well as the various contexts in which they occur: interpersonal, group and public communication, organizational communication, mass communication and intercultural communication.
3 units (3 hrs lec)
Prerequisite: CMS 101

103 Media-related Laws and Codes
Constitutional provisions on freedom of speech and expression, and of the press, statutes dealing with communication media and their operations; codes of ethics that serve as self-regulation for media practitioners; challenges, issues, and problems on the regulation of communication media.
3 units (3 hrs lec)
Prerequisite: CMS 101

104 Media and the Community
Social responsibility of the press, radio, television, and theater as media of information, education, entertainment, and industry.
3 units (3 hrs lec)
Prerequisite: CMS 102

105 Technologies in Media Communication
Technologies in communication and its effects on the way people communicate.
3 units (3 hrs lec)
Prerequisite: CMS 100

107 Fundamentals of Communication Planning
The principles and strategies in planning the process of communication.
3 units (3 hrs lec)
Prerequisite: CMS 102

110 Development Media
Cultural and educational aspects of communication in the non-mainstream and popular media forms.
3 units (3 hrs lec)
Prerequisite: CMS 100

111 Audio Procedures and Techniques
Principles, practices, techniques and aesthetics of audio recording and sound design.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: None

112 Radio Speech and Performance
Voice skills for working behind the microphone; performance skills for various audio productions.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 31

Communication and Media Studies (CMS)

113 Radio Writing
Principles and techniques in writing messages intended for the ear; preparation of scripts for various forms of radio programs.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 21

115 Radio Production and Direction
Production and direction of radio programs in various formats.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMS 113

118 Community Radio
Management, programming, operation, and regulation of a community radio station.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 115

121 Video Procedures and Techniques
Principles, practices, techniques, and aesthetics of video production.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: None

122 Television Speech and Performance
Speech communication and performance skill for television.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 31

123 Television Writing
Basic techniques for writing scripts for television.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 21

125 Television Production and Direction
Preparation of various forms of television programs in studio and field locations, from pre-production to postproduction stages.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 121

128 Broadcast News
Study of broadcast media with focus on developing and presenting the news.
3 units (1 hr lec, 2 hrs studio)
Prerequisites: CMS 111 and CMS 121

130 Basics of Print Journalism
The basic principles, conversations, and concepts of Journalism in print media.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 21

131 Covering and Writing the News
Elements of news, methods of gathering news, organizing and writing news stories. Practical applications of principles.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 130

132 Editorial, Column and Cartoon
Journalism concepts, styles, and techniques in writing effective and persuasive editorial and cartoons.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 130

133 Feature Writing
Basic concepts involved in feature writing for newspaper and magazines.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 130

134 Procedures and Techniques in Print Media
The principles of copyediting; headline writing; simple layout; planning, evaluating, and writing news coverage.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMS 131

Communication and Media Studies (CMS)

135 Contemporary and Online Publishing
Theory and practice of writing, preparation, and processing of informative publications, including mechanics of layout, copyreading, copy fitting and the use of computers; editing and publication of popular articles.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 131 or CMS 132

136 Specialized Reporting
Application of concepts, styles, and techniques in preparing reports on special fields in print journalism.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 131

137 Photojournalism
Basic principles, processes, and application of photographic coverage of news events; vital issues pertaining to photojournalism, particularly on ethics, rights and responsibilities.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: None

138 Magazine Design and Publishing
The principles of headline writing, typography, layout, writing of news coverage, copyediting, planning, and evaluating for a magazine.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 132 or CMS 134

139 Investigative and In-depth Reporting
Concepts, styles, and techniques in writing effective and persuasive editorial, columns, and cartoons.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 131

154 Program Design in Broadcasting
Planning of productions for radio and television including conceptualization of radio and television programs, preparation of production plans, and pitching.
3 units (3 hrs lec)
Prerequisite: CMS 111

159 Broadcast Programming and Management
Fundamentals of management, programming, operation, and regulation of broadcast stations.
3 units (3 hrs lec)
Prerequisite: Senior Standing

160 Understanding Advertising
Nature, function, practice, and social, economic and behavioral aspects of advertising.
3 units (3 hrs lec)
Prerequisite: None

161 Fundamentals of Creative Developments in Advertising
The creative process in advertising and campaign strategies for traditional and new media.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 160

162 Integrated and Interactive Advertising Strategies
Integration of above-the-line and below-the-line advertising strategies.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 160

163 Media Planning and Evaluation
Principles and objectives behind media space and time buying.
3 units (3 hrs lec)
Prerequisite: CMS 160

164 Advocacy Advertising and Public Relations
Techniques and principles of advocacy advertising and public relations.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 160

Communication and Media Studies (CMS)

165 Print Advertising
Principles of visual communication; type and rendering in black and white; space, cropping; processes of print production; finished art and bromide production; artwork preparation and typography as design.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 160

166 Broadcast Advertising
The process and techniques of advertising from the viewpoints of the broadcast station and the advertising agency as well as the production house, content analysis of commercial and evaluation of advertising strategies in radio and television.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 160

167 Digital and Online Advertising
Developments in digital and the online advertising environment.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 160

168 Planning the Advertising Campaign
Processes in the planning stage of the advertising campaign.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 163

169 Implementing the Advertising Campaign
Creation of an advertising campaign based on a product or service; importance of pre-testing and post-testing of a campaign material.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 168

170 Introduction to World Cinema
Overview of the historical development of film and cinema as an artistic and social force.
3 units (3 hrs lec)
Prerequisite: None

171 Introduction to Philippine Cinema
A survey of Philippine Cinema from its origins to the present.
3 units (3 hrs lec)
Prerequisite: None

172 Approaches to Film Theory and Criticism
Film and Critical theories such as political, ethical, cultural, social, and economic.
3 units (3 hrs lec)
Prerequisite: None

173 Gender Studies in Cinema
Explore and problematize sexual orientation, gender identity and expression (SOGIE)
3 units (3 hrs lec)
Prerequisite: None

174 Screenwriting
Storytelling strategies for fiction and documentary.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: None

175 Cinematography, Editing and Sound
Theories and application of cinematography, editing and sound for cinema.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 174

176 Producing
Business and creative consideration in film making.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 174

Communication and Media Studies (CMS)

177 Directing the Narrative
Pre-production and production process of directing a narrative.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 174

178 Directing the Non-Narrative
Pre-production and production process of directing a documentary.
3 units (1 hr lec, 2 hrs studio)
Prerequisite: CMS 174

179 Special Topics in Cinema
Specially developed topics that will supplement the theoretical and substantive areas in cinema or film studies. (Topic to be specified for record purposes; may be taken more than once, provided the topics are different.)
3 units (1 hr lec, 2 hrs studio)
Prerequisite: None

190 Digital Media Composition for Production
Exploring the possibilities and challenges of composing in digital media using relevant software.
3 units (3 hrs lec)
Prerequisite: None

192 Media Writing for Specific Purposes
Popularizing scientific and technical information using various media.
3 units (3 hrs lec)
Prerequisite: CMS 102

194 Media Appreciation and Criticism
Theories and methodologies in the field of media appreciation and criticism with concentration on the dominant critical perspectives that have contributed to the understanding and appreciation of media and its role in society.
3 units (3 hrs lec)
Prerequisite: CMS 102

195 Media Internship
Supervised training in at least one media organization involved in broadcasting, journalism, and advertising.
3 units (200 hours)
Prerequisite: Junior Standing

197 Communication Research Methods
Approaches, methods, and techniques in conducting quantitative and qualitative studies on media and communication.
3 units (3 hrs lec)
Prerequisite: CMS 102 and Junior Standing

198 Contemporary Issues in Media Communication
Concepts relating to information policy and the social construction of technology to a range of issues and practical problems.
3 units (3 hrs lec)
Prerequisite: CMS 195

199.1 Research or Creative Work in Communication and Media Studies I
Preparation of a research or a creative work proposal.
3 units (3 hrs lec)
Prerequisite: CMS 197 and Senior Standing

199.2 Research or Creative Work in Communication and Media Studies II
Implementing the research or creative work.
3 units (3 hrs lec)
Prerequisite: CMS 199.1

Comparative Literature (CL)

51 Survey of World Literature
Reading of short masterpieces and selections from world writers excluding English and American.
3 units (3 hrs lec)
Prerequisite: English III

101 Literature and the Behavioral Sciences
3 units (3 hrs lec)
Prerequisite: None

105 Literature and the Other Arts
3 units (3 hrs lec)
Prerequisite: None

121 Literary Criticism
A study of the elements and principles of literary criticism.
3 units (3 hrs lec)
Prerequisite: English III

131 Masterpieces of Ancient Egyptian, Hebraic, Arabic and Persian Literature
(in English translation)
3 units (3 hrs lec)
Prerequisite: Eng 4 or CL 51 or consent

132 Masterpieces of Ancient Greek and Roman Literature
(in English translation)
3 units (3 hrs lec)
Prerequisite: Eng 4 or CL 51 or consent

133 Masterpieces of the Literature of Medieval, Renaissance, and Modern Europe
(in English translation) The leading non-dramatic works of various European lands and countries.
3 units (3 hrs lec)
Prerequisite: 12 units of English, or Eng 4 or CL 51 or consent

142 Masterpieces of the Literature of South Asia
(in English translation) The leading works in the literature of India, Ceylon, Pakistan, and Burma.
3 units (3 hrs lec)
Prerequisite: 12 units of English, or Eng 4 or CL 51 or senior college standing

143 Masterpieces of the Literature of Southeast Asia
(in English translation) The leading works in the literature of the countries of mainland and insular Southeast Asia.
3 units (3 hrs lec)
Prerequisite: 12 units of English or senior college standing or Eng 4 or CL 51

144 Masterpieces of the Literature of China
The leading works in the literature of China in English translation.
3 units (3 hrs lec)
Prerequisite: 12 units of English or consent or Eng 4 or CL 51

145 Masterpieces of the Literature of Japan
The leading works in the literature of Japan in English translation.
3 units (3 hrs lec)
Prerequisite: 12 units of English or consent or Eng 4 or CL 51

151 Philippine Literature in English
The leading works in the literature of the Philippines written in English or available in English translation.
3 units (3 hrs lec)
Prerequisite: 12 units of English or consent or Eng 4 or CL 51

Comparative Literature (CL)

181 Modern Europe Novel
(in English translation) Masterpieces of European novelists of contemporary period.
3 units (3 hrs lec)
Prerequisite: Senior Standing

183 World Drama
Readings and analysis of dramatic masterpieces of the world.
3 units (3 hrs lec)
Prerequisite: English 4 or CL 51 or consent

191 The Development of European Drama
History and analysis of the drama in Europe.
3 units (3 hrs lec)
Prerequisite: Senior Standing or consent

192 The Classical Tradition in Literature
3 units (3 hrs lec)
Prerequisite: None

193 The Romantic Tradition in Literature
3 units (3 hrs lec)
Prerequisite: None

194 The Modern Temper in Literature
3 units (3 hrs lec)
Prerequisite: None

195 Selected Topics
3 units (3 hrs lec) (may be repeated for not more than 3 additional units)
Prerequisite: None

Cultural Studies (CS)

101 Introduction to Cultural Studies
Concepts, historical developments, theories, and issues related to the study of culture.
3 units (3 hrs lec)
Prerequisite: Lit 100

102 Issues in Literary and Cultural Studies
Perspective course on the role of critical and cultural theory, and the theoretical issues they pose, in relation to cultural studies and the humanities.
3 units (3 hrs lec)
Prerequisite: CS 101

103 Cultural Heritage and the Filipino
Concepts of cultural heritage with focus on the Philippine setting.
3 units (3 hrs lec)
Prerequisite: None

Creative Writing (CW)

101 Introduction to Creative Writing
Introductory course to the writing of various literary forms, I.e., poetry, drama, fiction, and creative nonfiction and includes an exploration of canonical and contemporary pieces in different languages.
3 units (3 hrs lec)
Prerequisite: Lit 100

111 Creative Writing (Poetry)
Poetry writing for beginners including an exploration of canonical and contemporary poetry in English as well as poetry written in Filipino, Hiligaynon, Kinaray-a and Akeanon.
3 units (3 hrs lec)
Prerequisite: CW 101

Creative Writing (CW)

112 Creative Writing (Short Story)
Short Story writing for beginners including an exploration of principles and practices, as well as an exploration of canonical and contemporary short stories in different languages.
3 units (3 hrs lec)
Prerequisite: CW 101

113 Creative Writing (Drama)
Workshop course on the writing of the stage play that includes an introductory examination of one or two canonical and contemporary plays.
3 units (3 hrs lec)
Prerequisite: CW 101

114 Creative Writing (Creative Nonfiction)
Workshop course on the Crafting of creative nonfiction and includes an introductory examination of a number of canonical creative nonfiction pieces.
3 units (3 hrs lec)
Prerequisite: CW 101

English (Eng)

10 Writing of Scientific Papers
Principles underlying the preparation and writing of scientific papers.
3 units (3 hrs lec)
Prerequisites: Comm 2 and at least junior standing

11 Technical Writing for Business
Theory and practice in the writing of business communication, with emphasis on effective form and language in business correspondence and technical reports, such as industry studies, project feasibility studies, marketing plans, etc.
3 units (3 hrs lec)
Prerequisite: None

110 Stylistics
Study of basic concepts and techniques of language analysis.
3 units (3 hrs lec)
Prerequisite: Lit 100

Filipino (Fil)

10 Pag-uusap
Pagbibigay ng iba't ibang gamiting pangungusap para sa iba't ibang pagkakataon.
3 units (3 hrs lec)
Prerequisite: None

11 Pagtatalakay
Pagtatalakay ng iba't ibang gawi at ugali ng mga Filipino. Paghahambing ng mga ito sa isa’t isa.
3 units (3 hrs lec)
Prerequisite: Fil 10

12 Pagbasa at Pagsulat
Pagpapaunlad ng kasanayan sa pagbasa at pagsulat sa Filipino.
3 units (3 hrs lec)
Prerequisite: Consent

Filipino (Fil)

13 **Pagbasat at Pagsulat**
Karugtong ng Filipino 12.
3 units (3 hrs lec)
Prerequisite: None

20 **Panimula sa Literatura**
Iba't ibang anyo ng literatura: mga diskasyon, report, at sanaysay.
3 units (3 hrs lec)
Prerequisite: Fil 12 or consent

101 **Ang Sitwasyong Pangwika sa Pilipinas**
Pag-aaral at pagsusuri sa kalagayan ng Wikang Pambansa sa kasalukuyan batay sa mga pangyayaring naganap kaugnay nito noong nakaraang panahon.
3 units (3 hrs lec)
Prerequisite: None

103 **Gramatika ng Wikang Pambansa**
Pag-aaral sa balangkas ng Wikang Pambansa.
3 units (3 hrs lec)
Prerequisite: None

110 **Peryodismong Pilipino**
Ang kasaysayan at pag-uunlad ng peryodismong Pilipino.
3 units (3 hrs lec)
Prerequisite: None

111 **Estilo**
Pag-aaral sa iba't ibang estilo ng paggamit ng Wikang Pambansa.
3 units (3 hrs lec)
Prerequisite: None

121 **Malikhaing Pagsulat**
Natatanging pag-aaral at pagsasanay sa pagsulat ng iba’t ibang kaanyuang pampanitikan.
3 units (3 hrs lec)
Prerequisite: None

190 **Pagsasaling Wika**
Mga simulain, pamamaraan, at suliranin sa pagsasalin sa Filipino.
3 units (3 hrs lec)
Prerequisite: None

197 **Seminar: Mga Natatanging Suliranin sa Wika**
Pagtatalakay at pagsusuri sa mga natatanging suliranin sa wika gaya ng suliranin sa lingua franca, wikang pambansa, wikang panturo at wikang opisyal.
3 units (3 hrs lec)
Prerequisite: None

199 **Pamamaraan ng Pananaliksik**
3 units (3 hrs lec)
Prerequisite: None

French

10 **Elementary Grammar and Composition**
Reading and translation of easy French prose.
3 units (3 hrs lec)
Prerequisite: None

11 **Elementary Grammar and Composition**
Continuation of French 10.
3 units (3 hrs lec)
Prerequisite: None

Japanese

10 Elementary Japanese I
Basic Japanese grammar and writing systems (Hiragana, Katakana, and about 100 Kanji characters).
3 units (3 hrs lec)
Prerequisite: None

11 Elementary Japanese II
Continuation of Japanese 10.
3 units (3 hrs lec)
Prerequisite: Japanese 10

Journalism (Journ)

101 Introduction to Journalism
Functions, principles and standards of journalism; problems and techniques of reporting; types of news and features.
3 units (3 hrs lec)
Prerequisite: 9 units of English

106 Public Information
Methods of gathering and disseminating public information as practiced by government, business, industrial, educational, and social organizations.
3 units (3 hrs lec)
Prerequisite: Journ 102 *(Note: This has been revised to CMS 131)*

109 Technical Writing
Theory and practice in preparing articles on technical subjects.
3 units (3 hrs lec)
Prerequisite: Junior standing

141 Press and Society
The responsibility of the press towards its own freedom, toward monopoly and competition, the rights of privacy, government interference, censorship, pressure groups, obscenity, the public interest, etc.
3 units (3 hrs lec)
Prerequisite: Senior Standing

198 Journalism Internship
Internship program in local print media offices.
3 units (3 hrs lec)
Prerequisite: minimum of 15 units of journalism

Literature (Lit)

100 Introduction to Literature
Overview of the bases and concepts that are essential in the comprehension of literature.
3 units (3 hrs lec)
Prerequisite: None

101 Introduction to Literary Research
Forms, styles, approaches, and techniques used in writing a research paper for literary studies.
3 units (3 hrs lec)
Prerequisite: Sophomore Standing

102 Introduction to Literary Translation
Theories of and approaches to literary translation.
3 units (3 hrs lec)
Prerequisite: 6 units of language courses in the same language

Literature (Lit)

103 Literary Theory and Criticism
Introduction to the major principles of literary discourse proposed and applied in the study of texts by authors beginning with Formalism up to Postmodernism.
3 units (3 hrs lec)
Prerequisite: Lit 100

104 Philippine Literary Criticism
Introduction to literary Theory and Criticism in the Philippines, as practiced by selected Filipino Scholars.
3 units (3 hrs lec)
Prerequisite: Lit 103

105 Literature and New Media
Study of various forms of new media that affect the reading, writing, accessing, and conceptualizing of literature.
3 units (3 hrs lec)
Prerequisite: Lit 100

110 Philippine Literature 1
Critical study of Philippine literature in Spanish and regional languages before World War II, in relation to contexts in literary history and culture and socio-political-economic conditions relevant to the material production of the text.
3 units (3 hrs lec)
Prerequisite: Lit 100

111 Philippine Literature 2
Critical study of Philippine literature in various Philippine regional languages (with focus on West Visayan Literature) after the war up to the contemporary times, in relation to contexts in literary history and culture, and socio-political-economic conditions relevant to the material production of the text.
3 units (3 hrs lec)
Prerequisite: Lit 110

112 Philippine Literature 3
Critical study of Philippine literature in English, from the beginning of American Occupation up to the contemporary times, in relation to contexts in literary history and culture and socio-political-economic conditions relevant to the material production of the text.
3 units (3 hrs lec)
Prerequisite: Lit 111

120 Literature of Asia
Survey of traditions and themes in Asian Literature.
3 units (3 hrs lec)
Prerequisite: Lit 100

121 Literatures of the Americas
Survey of traditions, forms, and themes in North, Central and South American Literature.
3 units (3 hrs lec)
Prerequisite: Lit 100

122 Literatures of Africa and Oceania
Survey of traditions and themes in African and Oceanic Literature.
3 units (3 hrs lec)
Prerequisite: Lit 100

123 Literatures of Europe
Survey of traditions and themes in European Literature
3 units (3 hrs lec)
Prerequisite: Lit 100

130 Philippine Literature of the Waters
Study of literary texts involving aquatic elements and relating these with socio-cultural discourses.
3 units (3 hrs lec)
Prerequisite: Lit 100

Literature (Lit)

140 Children's Literature
Reexamination of traditions and themes in literature for children.
3 units (3 hrs lec)
Prerequisite: Lit 100

141 Islamic Literature in Asia
The study of representative works from the literatures of Middle Eastern countries and countries influenced by Islam, including Moslem Mindanao, in English or Filipino translation.
3 units (3 hrs lec)
Prerequisite: Lit 3

150 Literature and the Other Arts
Study of how literature and the other art are related to and influence each other in form and content as they are molded by time, economics, politics, religion, etc.
3 units (3 hrs lec)
Prerequisite: None

151 Literature and the Social Sciences
Survey of the interdisciplinary relations between literature and the social sciences.
3 units (3 hrs lec)
Prerequisite: Lit 100

152 Literature and Gender
Examination of how gender and the world are represented in literature and the effects of theses representations on cultural attitudes and conditions.
3 units (3 hrs lec)
Prerequisite: Lit 100

153 Literature and Film
Literature and its cinematic translations and adaptations.
3 units (3 hrs lec)
Prerequisite: CS 101

154 Literature and Information Technology
Identifying new forms of technology and learning how to use them to advance literary interests and creative writing.
3 units (3 hrs lec)
Prerequisite: Lit 105

160 Ethnicity and Post-colonial Trends in Literature
The study of the literatures of decolonizing countries.
3 units (3 hrs lec)
Prerequisite: Lit 3

170 Folklore and Popular Literature
The study of folklore and popular literature around the world, including comics, pop songs and soap opera.
3 units (3 hrs lec)
Prerequisite: Lit 3

181 The Novel
The study of the novel as it develops in different cultures across cultures and milieux.
3 units (3 hrs lec)
Prerequisite: Lit 3

182 The Short Story
The study of the short story as it develops across cultures from its early beginnings to the contemporary times.
3 units (3 hrs lec)
Prerequisite: Lit 3

183 Drama
The study of drama as it develops across cultures.
3 units (3 hrs lec)
Prerequisite: Lit 3

Literature (Lit)

184 Poetry
The study of poetry as it develops across cultures from its early beginnings to contemporary times.
3 units (3 hrs lec)
Prerequisite: Lit 3

185 Biography and Essay
The study of biography and essay as literary forms of prose expression across cultures.
3 units (3 hrs lec)
Prerequisite: Lit 3

190 Approaches to Teaching Literature
Theories and practices for literature pedagogy.
3 units (3 hrs lec)
Prerequisite: Senior Standing

195 Literature Internship
Supervised training in an organization involved in content development, publishing, teaching, etc.
3 units (3 hrs lec)
Prerequisite: Senior Standing

197 Special Topics (Topic to be indicated for record purposes)
Lecture course in topics of current interest.
3 units (3 hrs lec)
Prerequisite: Senior Standing

199 Research Methods
Study, composition and defense of a literary research proposal or creative work plan.
3 units (3 hrs lec)
Prerequisite: Lit 102 and creative Work Portfolio and 12 units of CW for students who opt to do a creative work thesis

200 Thesis
Study, composition and defense of a literary research problem or creative work.
3 units (3 hrs lec)
Prerequisite: Lit 199

Spanish (Span)

I Elementary Course.
This provides intensive practice in conversational Spanish on an elementary level. The work consists entirely of the oral aspects of language study; of the spoken language, and conversations. Functional grammar is given to the students to serve as guide in the formation of correct speech habits.
3 units (3 hrs lec)
Prerequisite: None

II Elementary Course.
A continuation of Spanish I. The essentials of grammar, with special emphasis on idioms, are treated in this course. Emphasis is placed on intonation, pronunciation, vocabulary building and conversation.
3 units (3 hrs lec)
Prerequisite: None

3 Intermediate Course.
Emphasis on the subjunctive: reading, dictation, translation, conversation, composition, and letter writing.
3 units (3 hrs lec)
Prerequisites: Span I and Span II

20 Readings in Spanish.
Selected writings by Filipinos in the original Spanish versions.
3 units (3 hrs lec)
Prerequisite: Span 3

DIVISION OF PHYSICAL SCIENCES AND MATHEMATICS

General Education Courses

MATH

10 Mathematics Culture and Society
Appreciation of the beauty and power of mathematics through the examination of its nature, development, utility and relationship with culture and society.

3 units (3 hrs lec)
Prerequisite: None

Science

10 Probing the Physical World
Understanding the origin of the universe, synthesis of the elements, formation of the earth and the various critical issues affecting our world view and our planet through the methods and interconnected concepts of the physical sciences

3 units (3 hrs lec)
Prerequisite: None

Undergraduate Courses

Computer Science (CMSC)

10 Introduction to Computing
History of Computer Science; fundamental concepts and big ideas in Computer Science; social, ethical, and practical issues in computing.

1 unit (1 hr lec)
Prerequisite: None

11 Introduction to Computer Science
Introduction to the major areas of computer science; software systems and methodology; computer theory; computer organization and architecture. Students learn to write programs using a high-level block-structured programming language.

3 units (2 hrs lec, 3 hrs lab)
Prerequisite: None

21 Fundamentals of Programming
Expansion and development of material introduced in CMSC 11. Processing of files and linked-lists; programming in the C-language; Recursion; Systematic program development; Top-down design and program verification.

3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMSC 11

22 Fundamentals of Object-oriented Programming
Introduction to object-oriented programming; classes; inheritance; polymorphism; exception handling; design and implementation of object-oriented programs; object-oriented Application Programming Interface (API) programming.

3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMSC 21

55 Discrete Mathematical Structures in Computer Science
Principles of logic and set theory, combinatorics, discrete probability, recurrence relations, graph theory, algebraic systems, and their application in computer science.

5 units (5 hrs lec)
Prerequisite: Math 11and Math 14 or Math 17.

Computer Science (CMSC)

56 Discrete Mathematical Structures in Computer Science 1
Principles of logic, set theory, relations, and functions; Boolean algebra; matrices.
3 units (3 hrs lec)
Prerequisite: None

57 Discrete Mathematical Structures in Computer Science 2
Principles of combinatorics, probability, algebraic systems, and graph theory.
3 units (3 hrs lec)
Prerequisite: CMSC 56

123 Data Structures
Abstract data types and their implementations; lists, stacks, queue, trees, mappings, sets and graphs; searching and sorting techniques, dynamic storage management.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMSC 21and CMSC 57

124 Design and Implementation of Programming Languages
Study of the fundamental concepts in the design and implementation of the current high-level programming languages; syntax and translation; language definition structures, elementary and structured data types, abstraction mechanisms, sequence and data control, runtime considerations.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMSC 123

125 Operating Systems
Processor Management, memory management, file and disk management, resource management networks and distributed systems.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMSC 123 and CMSC 131

126 Web Programming
Programmer-oriented introduction to current internet technologies, web authoring and Internet security; design and development of web applications using modern Internet tools.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMSC 22

127 Database Systems
Data models: relational, network, hierarchical models; database management system, data definition and manipulation language; data security, integrity, synchronization, protection and recovery; principal database systems and query languages.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMSC 123

128 Software Engineering 1
Software life cycle from the requirement specification and design phases through the construction of actual software. Topics include planning a software project, cost estimation, software design, implementation, validation, and software maintenance.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMSC 126 and CMSC 127

129 Software Engineering 2
Practical software engineering; design and development of software systems using enterprise level applications; implementation, testing and deployment of software systems; software process improvement; software quality assurance; computer-aided software engineering (CASE) processes and tools; object-oriented analysis and design using the Unified Modeling Language (UML).
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMSC 128

Computer Science (CMSC)

130 Logic Design and Digital Computer Circuits
Data representation and computer arithmetic; logic functions and equations; electric field, electric currents, and semiconductors; description, analysis and design of combinational and sequential circuits; functional properties of digital integrated circuits.
4 units (3 hrs lec, 3 hrs lab)
Prerequisite: CMSC 11 and Phys 71

131 Introduction to Computer Organization and Machine Level Programming
An introduction to computer organization and interfaces between hardware and software. Microcomputer systems; basic computer organization, interfacing, interrupt mechanisms. Assembly language, data structure representations, program control implementations, subroutines, parameter passing, recursion, direct video graphics, serial port communications.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMSC 21 and CMSC 130

132 Computer Architecture
Advanced topics in computer systems organization from a designer's point of view; multiprocessing, pipelining, array processors, associative processors; microprogramming, techniques for increasing primary memory bandwidths; modularization, interleaving, access path widening, cache and associative memories; virtual memory; bus structures; multiprogramming and time-sharing organizations; network principles and protocols, distributed resources.
3 units (3 hrs lec)
Prerequisite: CMSC 131

134 Human-Computer Interaction
Foundations of human interaction; interaction design basics; HCI in the software process; cognitive models and theories; application of concepts and methodologies of software engineering, human factors, and psychology to address ergonomic, cognitive and social factors in the design and evaluation of interactive computer systems.
3 units (3 hrs lec)
Prerequisite: CMSC 126

137 Data Communications and Networking
Network topology, OSI reference model, network applications, network management, and network security.
3 units (2 hrs lec, 3 hrs lab)
Prerequisites: CMSC 125 and CMSC 132

138 Computer Security
Information theory; security models; number theory; confidentiality, integrity, and availability; authentication and authorization; application security; web security; network security; cryptographic primitives; security protocols.
3 units (3 hrs lec)
Prerequisite: CMSC 125 and CMSC 132

140 Advanced Programming
Intermediate programming PL/1 procedures; block structures; ON conditions; recursion; introduction to data structures and program analysis.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMSC 21 and CMSC 57

Computer Science (CMSC)

141 Automata and Language Theory
Finite automata and regular languages; push-down automata and context-free languages; Turing machine and recursively enumerable sets; linear-bounded automata and context-free languages; computability and halting problem; undecidable problems; recursive functions; and computational complexity.
3 units (3 hrs lec)
Prerequisite: CSMC 57

142 Design and Analysis of Algorithms
Algorithm design techniques; use of data structures, divide and conquer, local and global search. Complexity analysis algorithms: asymptotic analysis, worst case analysis and averaged case analysis, recurrences, lower bounds, NP completeness.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CSMC 123

143 Advanced Algorithms
Constraint programming, local search, heuristics, metaheuristics, linear programming, mixed integer programming, genetic algorithms, swarm optimization, approximation algorithms.
3 units (3 hrs lec)
Prerequisite: CSMC 142

151 Systems Analysis and Design
Systems analysis and design: concepts, philosophies, trends, tools, and techniques. Systems development life cycle; structured methodologies; data flow diagrams; entity-relationship diagrams; relational analysis; other design methodologies.
3 units (3 hrs lec)
Prerequisite: CSMC 128

152 Management Information Systems. (MIS)
Fundamental principles of management; information management; general systems model and approach; data processing systems. The MIS approach: executive; marketing; manufacturing; financial and human resource information systems.
3 units (3 hrs lec)
Prerequisite: CSMC 128

153 Accounting and Information Systems (AIS)
Fundamental principles of accounting; programming of accounting modules: general ledger, journal ledger, transaction ledger, accounts receivable, accounts payable, etc.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMSC 21

155 Technopreneurship
The basic principles of managing Information Technology and Software Development business.
3 units (3 hrs lec)
Prerequisite: Senior Standing

156 Mobile Development
Programming technologies, design and development related to mobile applications; accessing device capabilities, industry standards, operating systems and programming for mobile applications.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMSC 128

Computer Science (CMSC)

161 Interactive Computer Graphics

Graphic system software and hardware, 2D drawing algorithms, geometrical transformations, surface modeling, 3D viewing, visible surface determination algorithms, illumination and reflection models, shading models for polygons, color theory, ray tracing. Students write their 3D rendering engine.

3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMSC 57 and CMSC 123

162 3D Computer Graphics and Animation

3D graphics systems software and hardware; 3D modeling texturing, and lighting; animation basics; principles, armatures, constraints, IPO driver, rigging, effects and physical simulation; rendering; compositing, video sequence editing.

3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMSC 123

170 Introduction to Artificial Intelligence

Introduction to the major fields of application of AI: natural language processing; image recognition; pattern recognition; learning. Introduction to AI programming languages: PROLOG, LISP. Search and control strategies; probabilistic reasoning; matching techniques; knowledge and state space representation.

3 units (3 hrs lec)
Prerequisite: CMSC 123

171 Expert Systems and Knowledge Engineering

Expert system shells and architectures; knowledge representation languages; uncertainty handling; techniques of knowledge elicitation and acquisition; rule-based expert systems; knowledge organization and management.

3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMSC 123

172 Computing with Symbolic Expressions

Basic discrete mathematics, sets, functions, and predicates. Functional programming in LISP or PROLOG: function and declarative programming; atoms and lists; list processing by recursive functions; mapping functions; local function binding; data abstraction and evaluation.

3 units (3 hrs lec)
Prerequisite: CMSC 123

173 Data Mining

Fundamental concepts in data mining. Big data and basic statistics; databases and data warehouses; preprocess; data preparation for data mining' patterns association, correlations; classification and prediction; clustering; applications in data mining.

3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMSC 123, Stat 106 or COI (for non-majors)

174 Computer Vision

Introduction to computer vision applications, algorithms, and tools; image processing, feature detection, description and matching, stereo vision, segmentation, object recognition, object classification, convolutional neural networks, moving object detection, tracking.

3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMSC 22

Computer Science (CMSC)

180 Computer Simulation and Modeling
Algorithms and packages for standard graphics; advanced 2-D and 3-D rendering techniques; realism; visualization of scientific data. Use of statistical tools and techniques, knowledge in expert systems and artificial intelligence for data representation and analysis. Problems in other disciplines of science will be chosen as examples to be used for modeling and simulation.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMSC 123

181 Introduction to Parallel Computing
Parallel computer architectures; principles of parallel algorithm design, programming shared- and distributed-memory systems, understanding parallel performance; numerical and non-numerical parallel algorithms; programming models; shared memory, message passing, and global address space languages.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: CMSC 123

182 Scientific Computing
Different methods in numerical computing; introduction to dynamical systems and chaos; computation of fluid dynamics and implementation in programming.
3 units (2 hrs lec, 3 hrs lab)
Prerequisites: CMSC 11, CMSC 57, Math 53 or COI (for non-majors)

190 Special Problem
Individual study of computer-related problem. It can be taken twice as long as the total number of units to be credited to the student's program will not exceed 4 units.
3 units
Prerequisite: COI

192 Ethical and Professional Issues in Computing
Ethical and professional issues, licensing, intellectual property rights, privacy and security issues, cybercrime, business challenge of computer malware, and the impact of computing in business and society
1 unit (1 hr lec)
Prerequisite: Senior Standing

195 Practicum
3 units
Prerequisite: CMSC 129

197 Special Topics
Lecture course in topics of current interest, such as data communications, parallel computation, artificial intelligence, neutral networks.
3 units (3 hrs lec)
Prerequisite: COI

198.1 Special Problem I
Course Description: Research project proposal; design and development of a system prototype.
2 units
Prerequisites: CMSC 195, Comm 12

198.2 Special Problem II
Research project development; implementation, deployment and testing of a system.
2 units
Prerequisite: CMSC 198.1

Mathematics (Math)

11 College Algebra
Linear equations; algebraic and graphical solutions of the quadratic equations; exponents and radicals; complex numbers; binomial expansion; determinants; progressions; theory of equations.
3 units (3 hrs lec)
Prerequisite: None

14 Plane Trigonometry
Logarithms; graphs of the trigonometric functions; the general triangle; solutions of the trigonometric, inverse trigonometric, exponential and logarithmic equations; complex numbers.
3 units (3 hrs lec)
Prerequisite: None

17 Algebra and Trigonometry
Sets and numbers; the algebra of numbers as a logical system; inequalities; absolute values and coordinate systems, functions and graphs; circular, linear, quadratic and polynomial functions; exponential and logarithmic functions; applications of the circular functions to angles.
5 units (5 hrs lec)
Prerequisite: None

18 Precalculus Mathematics
Polynomial functions and their zeros; rational and rational power functions; polynomial and rational inequalities; circular functions and their inverses; exponential and logarithmic functions; hyperbolic functions and their inverses; vectors in two dimensions; matrices and determinants; systems of equations and inequalities; conics; parametric curves; polar and parametric equations
5 units (5 hrs lec)
Prerequisite: None

19 Advanced Algebra
Inequalities, complex numbers, theory of equations, matrices and determinants, sequences and series, mathematical induction, permutation, combination, binomial theorem, introductory number theory.
3 units (3 hrs lec)
Prerequisite: Math 17 or equivalent

20 Euclidean and Non-Euclidean Geometries
Points, lines and planes; polyhedra; orthogonal projection; the pyramid, cylinder, cone and sphere; hyperbolic geometry, elliptic geometry and other non-Euclidean geometries.
3 units (3 hrs lec)
Prerequisite: Math 17 or equivalent

21 Plane and Solid Geometry
Reasoning; points, lines and planes; angles and triangles; proof construction; congruences; geometric inequalities; perpendicularity and parallelism; area theory; similarity; circles and spheres; solids and their volumes.
3 units (3 hrs lec)
Prerequisite: None

42 Elementary Mathematical Methods I in Physics
Applications of College Algebra and Trigonometry to Physics.
4 units (4 hrs lec)
Prerequisite: None

43 Elementary Mathematical Methods II in Physics
Differential and integral calculus as applied to Physics.
3 units (3 hrs lec)
Prerequisite: Math 42

Mathematics (Math)

50 Applied Calculus
Limits; continuity; derivatives of algebraic, exponential and logarithmic functions; applications of derivatives; related rates; differentials; extrema of functions; indeterminate forms; curve sketching; optimization; indefinite integrals; definite integrals; differential equations and their applications.
4 units (4 hrs lec)
Prerequisite: None

52 Analytical Geometry and Calculus I
Straight lines. Functions and graphs; limits and continuity, concept of derivative. Derivatives of algebraic functions; applications to curve sketching, rate, maximum and minimum problems. Second degree curves; polar coordinates.
3 units (3 hrs lec)
Prerequisite: Math 11 and Math 14 or equivalent

53 Calculus I
Limits and continuity; differentiation; derivatives of algebraic and trigonometric functions; extrema of functions; optimization; antidifferentiation; definite integrals; applications of integrals.
4 units (4 hrs lec)
Prerequisite: Math 18

54 Calculus II
Integration techniques; further applications of definite integrals; separable differential equations; infinite sequences and series; calculus with polar and parametric curves; three-dimensional space; vectors; quadric surfaces.
4 units (4 hrs lec)
Prerequisite: Math 53

55 Calculus III
Vector functions and their derivatives and integrals; multivariable functions and their limits and continuity; partial derivatives; directional derivatives; extrema of multivariable functions; cylindrical and spherical coordinates; multiple integrals; line integrals; surface integrals.
4 units (4 hrs lec)
Prerequisite: Math 54

100 Introduction to Calculus
Limits, derivatives; integrals; applications
4 units (4 hrs lec)
Prerequisite: Math 17 or consent

101 Elementary Statistics
Presentation of data; frequency distribution; central tendencies; index numbers, dispersion; normal curve; Poisson curve; correlation; sampling distribution; elements of statistical inference.
4 units (4 hrs lec)
Prerequisite: Math 11 or Math 17

102 Analytical Geometry and Calculus II
Indefinite and definite integrals; applications to plane area, volume, arc length, and area of a surface of revolution. Transcendental functions. Methods of integration.
3 units (3 hrs lec)
Prerequisite: Math 52

103 Analytical Geometry and Calculus III
Parametric equations, vectors, and solid analytical geometry. Partial differentiation; multiples of integrals. Infinite series.
3 units (3 hrs lec)
Prerequisite: Math 102

106 Mathematics for Science Teachers
Selected topics on basic concepts, and methods of Mathematics.
3 units (3 hrs lec)
Prerequisite: Senior Standing

Mathematics (Math)

107 Logic and Set Theory
Mathematical logic and proof techniques; sets and functions; cardinal and ordinal numbers; axiomatic set theory.
3 units (3 hrs lec)
Prerequisite: Math 18

110 Abstract Algebra
Binary operations; groups; rings; fields; integral domain.
3 units (3 hrs lec)
Prerequisite: Math 107

114 Linear Algebra
Vector spaces; linear transformation and matrices; eigenvalues; canonical forms; applications.
3 units (3 hrs lec)
Prerequisite: Math 107 or equivalent

116 Number Theory
An introduction to the fundamental and classical results in number theory, its applications in other fields and some recent development in the field.
3 units (3 hrs lec)
Prerequisite: Math 107, Junior Standing

121 Elementary Differential Equations
Ordinary differential equations. Total differential equations. Partial differential equations of the first and second orders.
3 units (3 hrs lec)
Co-requisite: Math 55

122 Dynamical Systems
Existence and uniqueness theory of ordinary differential equation, equilibrium points and their stability, periodic solutions, Poincare maps, local bifurcations of equilibria, perturbation methods.
3 units (3 hrs lec)
Prerequisite: Math 121

123 Advanced Calculus I
Topology of the real line; limits; continuity; derivatives; Reimann integral; improper integrals.
3 units (3 hrs lec)
Prerequisite: Math 55 or equivalent

125 Introduction to Mathematical Biology
An introduction to the use of continuous and discrete differential equations in investigating biological problems such as in population dynamics and the spread of diseases.
3 units (3 hrs lec)
Prerequisite: Math 114 and Math 121

127 Vector Analysis
Vector algebra and calculus. Invariants. Green's theorem. Stoke's theorem. Gauss's theorem. Applications to geometry and physics.
3 units (3 hrs lec)
Prerequisite: Math 121

128 Complex Analysis I
Functions of a complex variable. Holomorphic functions. Taylor and Laurant's expansions. Residue theory, complex integration.
3 units (3 hrs lec)
Prerequisite: Math 55 or equivalent

135 Combinatorial Mathematics
Basic advanced counting techniques; analysis of discrete mathematical structures and patterns.
3 units (3 hrs lec)
Prerequisite: Math 107

140 Graph Theory and Its Applications
Graph characterizations, operations and algorithms; planarity and colorability; connectivity and traversability; matching and factorization; network applications.
3 units (3 hrs lec)
Prerequisite: Math 107

Mathematics (Math)

143 Modern Geometries and Their Applications
Principles, methods, and applications of non-Euclidean, projective and other geometries.
3 units (3 hrs lec)
Prerequisite: Math 110 and Math 114

144 Advanced Plane Geometry
Critical review of plane geometry; metric and projective properties of plane figures.
3 units (3 hrs lec)
Prerequisite: Math 103

146 Introduction to Topology
Topological spaces, convergence, product and quotient spaces, connectedness and compactness, countability and separation axiom, applications.
3 units (3 hrs lec)
Prerequisite: Math 55 and Math 107

150.1 Theory of Probability I
The sample space. Probability as a set function. Elements of combinatorial analysis. Combination of events. Conditional probability and stochastic independence. Random variables. Distribution functions of random variables. Applications. Special discrete and continuous distributions.
3 units (3 hrs lec)
Prerequisite: Math 101and Math 55 or their equivalents

152 Introduction to Computer Software Application
Hands-on experience on the use of different application softwares.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: COI

153 Computer Programming I
Fundamental concepts and methods of computer programming.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: None

154 Computer Programming II
Statistical and other scientific applications of computer programming.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Math 153

162 Theory of Interest
Measures of interest; annuities; yield rates; extinction of debts by amortization and sinking funds; bonds and other securities.
3 units (3 hrs lec)
Prerequisite: Math 54

165 Financial Derivatives Markets
An introduction to futures, options and related securities with emphasis on arbitrage pricing and risk management.
3 units (3 hrs lec)
Prerequisite: Math 162

171 Elementary Numerical Analysis I
Error analysis; numerical methods for the solutions of equations, simultaneous linear equations, eigenvalues and eigenfunctions; orthogonalization and polynomial approximation.
3 units (3 hrs lec)
Prerequisite: Math 121 or COI

173 Numerical Methods I
Numerical methods for solving roots of single nonlinear equations and systems of linear equations, polynomial interpolation, numerical differentiation and integration.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Math 54, Math 114 and Math 154

Mathematics (Math)

174 Numerical Methods II
Numerical methods for solving ordinary and partial differential equations, spline and least-square approximation, optimization, and selected advanced topics in numerical methods.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Math 55, Math 121 and Math 173

175 Mathematical Modeling
Formulation, analysis, and implementation of mathematical models for a wide range of application areas.
3 units (3 hrs lec)
Prerequisite: Math 174

178 Mathematical Methods in Economics
Mathematical methods applied to elementary economic theory.
3 units (3 hrs lec)
Prerequisite: Econ 11, Math 55, Math 114 and Math 121

183 Linear and Integer Programming
Origin and nature of operations research; linear programming models and formulation, graphical method, simplex method, duality theory, sensitivity analysis; transportation problem, transshipment problem, assignment problem; integer-linear programming model and formulation, branch and bound method, cutting-plane algorithm, implicit enumeration.
3 units (3 hrs lec)
Prerequisite: Math 114

184 Network Analysis and Dynamic Programming
Shortest-route problem, minimal spanning tree problem, maximal-flow problem, network simplex method, project scheduling with PERT-CPM; deterministic and probabilistic dynamic programming applied to resource allocation, equipment replacement, and other related problems; inventory models; Markovian decision processes.
3 units (3 hrs lec)
Prerequisite: Math 183

185 Planar Location and Facility Theory
Median-and-center problems in a plane, one and multi-facility problems, relation of location problems, linear and network optimization.
3 units (3 hrs lec)
Prerequisite: Math 183

186 Nonlinear Optimization
Nonlinear programming models and formulation, graphical approach; classical unconstrained and constrained optimization, nonlinear programming algorithms; analysis of selected nonlinear programming problems such as quadratic programming, stochastic programming, convex programming, geometric programming, and fractional programming.
3 units (3 hrs lec)
Prerequisite: Math 183

195 Practicum
Supervised practical experience in some areas of applied mathematics in an industrial, business, or governmental setting. Students are required to document their work experience and write a report which will be evaluated by their faculty supervisor in consultation with the employers.
3 units (150 hrs.)
Prerequisite: Must have taken at least 30 units of upper division courses.

196 Mathematics Seminar
1 unit
Prerequisite: Senior Standing

197 Special Topics in Mathematics
3 units (3 hrs lec)
Prerequisite: COI

Mathematics (Math)

198.1 Special Problem I
Exploration of research topics; research proposal development.
1 unit
Prerequisite: Math 135, Math 162, Math 175, Math 183, Comm 12

198.2 Special Problem II
Conduct of research; writing and presentation of research results.
2 unit
Prerequisite: Math 198.1

Physics (Phys)

21 Introductory Physics
Introduction to Kinematics, Mechanics, Fluid Dynamics, Heat and Thermodynamics, Waves and Sound, Electricity and Magnetism.
4 units (4 hrs lec)
Prerequisite: None

51 General Physics I
Introduction to mechanics, waves, sound and thermodynamics.
3 units (3 hrs lec)
Prerequisite: Math 17 or equivalent

51.1 General Physics I Laboratory
1 unit (2 hrs lab)
Co-requisite: Phys 51

52 General Physics II
Introduction to electromagnetism, optics, and modern physics.
3 units (3 hrs lec)
Prerequisite: Phys 51

52.1 General Physics II Laboratory
1 unit (2 hrs lab)
Prerequisite: Phys 52

71 Elementary Physics I
Mechanics of particles, rigid bodies, and fluids.
4 units (4 hrs lec)
Prerequisite: None
Co-requisite: Math 53

71.1 Elementary Physics I Laboratory
An elementary Physics laboratory that deals with the concepts in classical mechanics.
1 unit (2 hrs lab)
Prerequisite: Phys 71

72 Elementary Physics II
Electricity and magnetism, wave phenomena, and optics.
4 units (4 hrs lec)
Prerequisite: Phys 71
Co-requisite: Math 54

72.1 Elementary Physics II Laboratory
An elementary Physics laboratory that deals with the concepts in electricity, magnetism, and optics.
1 unit (2 hrs lab)
Prerequisite: Phys 71.1
Co-requisite: Phys 72

73 Elementary Physics III
Thermal physics, relativity, and quantum physics.
4 units (4 hrs lec)
Prerequisite: Phys 72

73.1 Elementary Physics III Laboratory
1 unit (2 hrs lab)
Prerequisite: Phys 72.1
Co-requisite: Phys 73

Physics (Phys)

74 Foundations of Physics I
Vectors, Particle Kinematics and Dynamics, Rotational Motion, Fluids, Temperature and Heat.
4 units (3 hrs lec, 2 hrs lab)
Co-requisite: Math 42

75 Foundations of Physics II
Wave, Motion and Sound, Laws of Electricity and Magnetism, Electric and magnetic Fields, Electric Circuits, Electromagnetic Oscillations, Electromagnetic Fields and Waves.
4 units (3 hrs lec, 2 hrs lab)
Prerequisite: Phys 74
Co-requisite: Math 43

76 Foundations of Physics III
Geometrical and Physical Optics, Special Relativity, Blackbody Radiation, Particle Aspect of Waves, Wave Aspect of Particles, Introduction to Atomic Physics.
4 units (3 hrs lec, 2 hrs lab)
Prerequisite: Phys 75

85 Basic Electronics
Semi-conductors; solid state devices; diodes; transistors; amplifiers, oscillators; logic gotes; analog circuits, digital circuits.
3 units
Prerequisite: Phys 75

115 Mathematical Physics
Transcendental functions; coordinate systems; vector analysis; analytic geometry; Taylor series; matrices and determinants; applications to physics.
3 units (3 hrs lec)
Prerequisite: Math 43

123 Theoretical Mechanics
One- and three-dimensional motion of a particle; Motion of a system of particles; rigid bodies; rotation; statics; gravitation.
3 units (3 hrs lec)
Prerequisite: Phys76
Co-requisite: Phys 115

133 Electromagnetic Theory
Electrostatic fields in vacuo and in di-electric media; magnetostatics; electromagnetic fields of constant and variable currents; Maxwell's equations; Magnetic materials.
3 units (3 hrs lec)
Prerequisite: Phys 76 and Phys 115

141 Intermediate Physics I
Mechanics, heat, sound, and the general properties of matter. (Primarily for education students).
3 units (3 hrs lec)
Prerequisite: Phys 43 and Math 55 or consent

142 Intermediate Physics II
Electricity and magnetism; geometrical and physical optics. (Primarily for education students).
3 units (3 hrs lec)
Prerequisite: Phys 141 or consent

143 Introductory Quantum Mechanics
Quantum theory; Schrodinger's Equation and elementary wave mechanics; Hydrogen Atom; Angular Momentum; Pauli's Principle.
3 units (3 hrs lec)
Prerequisite: Phys 76 and Phys 115

189 Advanced Physics Laboratory
Selected experiments in mechanics, electricity, magnetism, and modern physics.
2 unit (6 hrs lab)
Prerequisite: Senior Standing

Physics (Phys)

196 Physics and Society
The interrelationship between physics, society, civilization, and culture; physics and social change; social functions of physics; physics and national development.
3 units (3 hrs lec)
Prerequisite: COI

198.1 Physics Seminar I
Seminar course in Physics covering the areas of mechanics, electricity, magnetism, and modern physics.
2 units (2 hrs)
Prerequisite: Senior Standing

198.2 Physics Seminar II
Seminar course in Physics covering the areas of electro-magnetic theory, quantum mechanics, and advanced physics.
2 units (2 hrs)
Prerequisite: Senior Standing

Statistics (Stat)

102 Statistical Methods in Research
Types of research; research methodologies; levels of measurement; data collection, organization, presentation, and description; estimation; hypotheses testing; correlation analysis; linear regression analysis
3 units (3 hrs lec)
Prerequisite: None

104 Descriptive Statistics
Statistics; statistical measurement; statistical notations; collection, organization, and presentation of data; measures of central tendency, location, dispersion, skewness, kurtosis; letter values, boxplots and stem and leaf display; measure of association and relationship; rates, ratios, and proportions; construction of index numbers and indicators.
3 units (3 hrs lec)
Prerequisite: None

105 Introduction to Statistical Analysis
Organization and presentation of data; probability functions; random variables; elements of statistical inference; analysis of variance.
3 units (3 hrs lec)
Prerequisite: Math 17

106 Advanced Statistical Analysis
Regression and correlation analysis; non-parametric methods; experimental design; time series analysis.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Stat 105

110 Non-Bayesian Probability
Definitions and properties of events, probability, and random variables; joints, conditional and marginal distributions; some important probability
distributions.
4 units (4 hrs lec)
Prerequisite: Math 154 or equivalent

111 Statistical Methods and Inference
Population and sample; data collection and presentation methods; measures of location and dispersion; sampling estimators and estimation techniques; test of hypothesis.
4 units (4 hrs lec)
Prerequisite: Stat 110

117 Mathematics for Statistics
Principle of logic; methods of proof; fields, sigma field and sequences of sets; the real number system; summation of series; combinatorial analysis.
3 units (3 hrs lec)
Prerequisite: Math 18

Statistics (Stat)

121 Probability Theory I
Elements of probability; random variables; discrete and continuous random variables; probability distributions; special distributions; mathematical expectations.
3 units (3 hrs lec)
Prerequisite: Math 53 and Stat 117
Co-requisite: Math 54

122 Probability Theory II
Joint, marginal, and conditional distributions; independence of several random variables; distributions and expectations of functions of random variables; characterization of F, t, $\chi 2$ distributions; limit theorems.
3 units (3 hrs lec)
Prerequisite: Stat 121

123 Parametric Statistical Inference
Population and sample; statistics and sampling distributions; point and interval estimation; statistical hypothesis testing; application of z, t, $\chi 2$ and F tests.
4 units (3 hrs lec, 3 hrs lab)
Prerequisite: Stat 122

129 Regression and Correlation Analysis
Linear regression model; model selection; regression diagnostics; use of dummy variables; remedial measures.
3 units (3 hrs lec)
Prerequisites: Math 114 and Stat 123

130 Introduction to Experimental Design
Principles of experimental design; completely randomized design; randomized complete block design; Latin-square design; factorial experiments; analysis of variance; transformations.
3 units (3 hrs lec)
Prerequisite: Stat 129

132 Nonparametric Statistical Inference
Levels of measurement; goodness-of-fit tests; sign and signed ranks tests; distribution tests; association tests; tests for independence.
3 units (3 hrs lec)
Prerequisite: Stat 123

133 Introduction to Exploratory Data Analysis
Exploratory data analysis techniques; robust estimators for location and scale parameters.
3 units (3 hrs lec)
Prerequisite: Stat 123

134 Introduction to Bayesian Statistical Inference
Overview and foundations of Bayesian analysis; assessment of prior, posterior, and predictive distributions; Bayesian inference, Bayesian hierarchical models; introduction to empirical bayes.
3 units (3 hrs lec)
Prerequisite: Stat 123

138 Use of Statistical Software Packages
Use of database software. spreadsheet and statistical software packages for data management.
3 units (2 hrs lec, 3 hrs lab)
Prerequisites: Stat 104, Math 153

140 Introduction to Sample Surveys
Designs of surveys; sample designs; estimation of population characteristics; biases and non-sampling errors.
3 units (3 hrs lec)
Prerequisite: Stat 123

141 Multivariate Theory
Multivariate normal distribution; other multivariate distributions; inference on the mean vector; interference on dispersion matrix; comparing two normal populations; multivariate analysis of variance and covariance.
3 units (3 hrs lec)
Prerequisite: Stat 129
Co-requisite: Stat 130

Statistics (Stat)

142 Applied Multivariate Analysis
Principal component analysis; factor analysis; discriminant analysis; cluster analysis; other multivariate techniques.
3 units (3 hrs lec)
Prerequisite: Stat 141

145 Introduction to Time Series Analysis and Forecasting
Classical methods; ARIMA models; Box-Jenkins methods; intervention analysis
3 units (3 hrs lec)
Prerequisite: Stat 129

149 Introduction to Categorical Data Analysis
Categorical data; cross-classification tables; analysis using loglinear, logistic and logit models.
3 units (3 hrs lec)
Prerequisite: Stat 129

150 Survey Operations
Research process; techniques of data measurement; issues of reliability and validity; scale construction; principles of questionnaire design; preparation of questionnaires and interview schedules; data collection; data coding and encoding; data quality control; presentation of research findings.
3 units (3 hrs lec)
Prerequisites: Stat 138, Stat 140 and Comm 12

170 Introduction to Industrial Labor Statistics
Levels of supply and demand of labor force; industrial and occupational classifications; work stoppages; indices of labor-management friction.
3 units (3 hrs lec)
Prerequisite: Stat 122

171 Elementary Economic Statistics
The system of national accounts; input-output analysis.
3 units (3 hrs lec)
Prerequisite: Stat 129

172 Statistical Methods in Fisheries and Agriculture
Planning for and determining appropriate statistical methods for fisheries and agriculture researches.
3 units (3 hrs lec)
Prerequisite: Stat 123

173 Elementary Actuarial Statistics
Annuities, certain sources, and characteristics of mortality tables; life annuities; life insurance; net level reserves.
3 units (3 hrs lec)
Prerequisite: Stat 121

174 Elementary Statistical Quality Control
Construction and analysis of control charts for variables and attributes; process capability; acceptance sampling plans; reliability.
3 units (3 hrs lec)
Prerequisite: Stat 123

175 Introduction to Biostatistics
Descriptive and inferential statistics in the biological and medical sciences, epidemiologic studies, clinical trials; survival analysis.
3 units (3 hrs lec)
Prerequisite: Stat 129

176 Statistical Methods in Market Research
Market research process; design of market research; data collection techniques; data analysis using descriptive and inferential statistics in market research.
3 units (3 hrs lec)
Prerequisite: Stat 123

Statistics (Stat)

177 Introduction to Hierarchical Linear Models
Analysis of the dependencies that exist in clustered, nested or multilevel data using hierarchical linear models (HLM) and hierarchical generalized linear models (HGLM).
3 units (3 hrs lec)
Prerequisite: Stat 130

178 Introduction to Operations Research
Nature of operations research; formulation of problems and construction of models. Linear programming. Network models. Inventory control. Queuing models. Replacement models. Simulation.
3 units (3 hrs lec)
Prerequisite: COI

179 Introduction to Survival Analysis
Basic quantities for survival data; nonparametric inferences for basic survival quantities; semiparametric proportional hazards model; inferences for parametric regression models.
3 units (3 hrs lec)
Prerequisite: Stat 129

180 Introduction to Stochastic Processes
Probability spaces; random variables; definition of stochastic processes; classification of stochastic processes; Markov chains; continuous time Markov chains; renewal processes.
3 units (3 hrs lec)
Prerequisite: Math 121.1 and Stat 122

197 Special Topics in Statistics
3 units (3 hrs lec)
Prerequisite: COI

DIVISION OF SOCIAL SCIENCES

General Education Courses

ETHICS -GE Core

1 Ethics and Moral Reasoning in Everyday Life
The nature and development, sources and frameworks of ethics and moral reasoning and their application to various issues and contexts.
3 units (3 hrs lec)
Prerequisite: None

Kasaysayan (KAS) - GE Core

1 Kasaysayan ng Pilipinas
Ang pampulitika, pang-ekonomiya, panlipunan, at pangkalinangang pag-sulong ng Pilipinas
3 units (3 hrs lec)
Prerequisite: None

SAS - GE Elective

1 Self and Society
Understanding the self by using the various lenses of the social sciences, natural sciences, and the humanities in examining the interaction of the biological, psychological and socio-cultural dimensions in being and behavior and in appreciating personal agency and the emergence of the self in relation to different social contexts.
3 units (3 hrs lec)
Prerequisite: None

SOC SCI - GE Elective

5 **Understanding Gender**
Critical analysis of key concepts, root causes, forms and dimensions of gender relations and their varied manifestation in selected societies
3 units (3 hrs lec)
Prerequisite: None

Undergraduate Courses

Anthropology (Anthro)

1 **General Anthropology**
An introduction to anthropological knowledge with respect to the physical origin of man, his evolution, differentiation, and classification into races and subraces, the nature and structure of culture, the forces and processes involved in cultural change.
3 units (3 hrs lec)
Prerequisite: None

118 **Prehistory of the Philippines**
Theories and problems of the peopling of the Philippines.
3 units (3 hrs lec)
Prerequisite: Anthro 1

129 **Philippine Ethnic Communities**
Ethnography and cultural ecology of indigenous and non-indigenous ethnic groups in contemporary Philippines.
3 units (3 hrs lec)
Prerequisite: Anthro 1

165 **Philippine Folklore**
Oral and traditional literature of the Filipino people and its significance.
3 units (3 hrs lec)
Prerequisite: None

181 **Social Anthropology**
Concepts, theories, and present-day implications
3 units (3 hrs lec)
Prerequisite: None

188 **Culture Change**
Theories, methods and problems involved in culture change, factors relating to the stability, growth and change in non-western areas of the contemporary world.
3 units (3 hrs lec)
Prerequisite: Anthro 1 or consent

Community Development (CD)

100 **Introduction to Community Development**
Concepts, perspectives, approaches, methods, and programs including issues and challenges in community development in the Philippines and in other developing country.
3 units (3 hrs lec)
Prerequisite: None

101 **Philippine Society and Community Development**
Analysis of the Philippines economic, socio-cultural, and political structures and processes and their impact on community development.
3 units (3 hrs lec)
Prerequisite: CD 100 or COI

Community Development (CD)

110 Development Perspectives
Conceptions of development and poverty, evolution of societies from traditional to modern, alternative development paradigms, and concurrent influences on development theory including resilience, sustainability, inclusivity, and trusteeship.
3 units (3 hrs lec)
Prerequisite: None

112 Development Policies and Programs for the Basic Sectors
Analysis of national development policies and programs and their impacts to the basic sectors.
3 units (3 hrs lec)
Prerequisite: CD 101 or COI

116 Gender Analysis in Community Development
Gender and development concepts, perspectives, analytical frameworks, and tools to analyze community development issues using gender analysis frameworks for gender responsive planning, implementation and mainstreaming.
3 units (3 hrs lec)
Prerequisite: None

120 Community Organization and Mobilization
Theoretical and historical foundations of community organizing in the Philippines with focus on concepts, perspectives, approaches and processes in harnessing people's participation for social change.
3 units (3 hrs lec)
Prerequisite: CD 100 or COI

124 Innovative Strategies in Community Education
Concepts, principles, strategies, and processes in community education with emphasis on design, organization, conduct and evaluation of community education programs.
3 units (3 hrs lec)
Prerequisite: CD 120 or COI

126 Community and Organizational Development
Concepts, methods, tools, processes, issues, typologies of interventions, competencies, values and ethics in organizational development as a strategy from community organizing.
3 units (3 hrs lec)
Prerequisite: CD 120 or COI

134 Social Marketing and Community Development
Concepts, principles and strategies of social marketing from community development to facilitate behavior change for social transformation.
3 units (3 hrs lec)
Prerequisite: CD 120 or COI

136 Resource Generation for Development
International frameworks on development aid and national policies, programs, and strategies for resource generation by the government, the civil society, and local communities.
3 units (3 hrs lec)
Prerequisite: CD 120, Econ 11

140 Development Planning and Governance
Participatory social development planning with focus on planning frameworks, guidelines, structures, mandates, and tools withing the context of local government.
3 units (3 hrs lec)
Prerequisite: CD 120 or COI

142 Participatory Project Development and Management
Concepts, principles, strategies and tools in participatory project development and management.
3 units (3 hrs lec)
Prerequisite: CD 140 or COI

Community Development (CD)

143 Participatory Monitoring and Evaluation
Participatory methods in monitoring and evaluation, with emphasis on the role of multiple stakeholders in planning, collecting, interpreting, communicating, and using information for collective learning and continuous growth.
3 units (3 hrs lec)
Prerequisite: CD 142 or COI

151 Community Governance and Global Change
Forms of community governance in the context of global change and challenges.
3 units (3 hrs lec)
Prerequisite: Pol Sci 14

152 Community-Based Natural Resources Management
Concepts, policies, and strategies in community-based natural resources management with emphasis on coastal and marine resources.
3 units (3 hrs lec)
Prerequisite: CD 140 or COI

156 Disaster and Climate Resilience in Community Settings
Basic Concepts, perspectives, frameworks and policies on disaster risk reduction and climate change adaptation; typologies of risks and hazards; and inclusive community-based strategies for safety and resilience.
3 units (3 hrs lec)
Prerequisite: CD 140 or COI

180 Introductory Supervised Fieldwork
Preliminary field immersion course with selected sector/ community in partnership with an accredited agency to evolve theory through the practice of CD skills.
3 units (3 hrs lec)
Prerequisites: CD 124, CD 126, CD 136, CD 143

181 Integrated Fieldwork Instruction Program
Placement of students with selected sector/community in partnership with an accredited agency to carry our short-term community development programs.
3 units (3 hrs lec)
Prerequisite: 21 units of CD core courses including CD 135

197 Special Topics in Community Development
Analysis of development frameworks polices, plans, programs or other “issues of the day” in Community Development. May be taken twice provided the topics are different and shall be indicated for records purposes.
3 units (3 hrs lec)
Prerequisite: Senior Standing

199.1 Community Development Research I
Research Proposal writing course using methods and processes in social science research, efficient literature review, research framework development, sampling and data collection.
3 units (3 hrs lec)
Prerequisite: Stat 102

199.2 Community Development Research II
Implementation of research project using community development analytical frameworks, approaches, and tools.
3 units (3 hrs lec)
Prerequisite: CD 199.1

Economics (Econ)

11 Introductory Economics
Basic principles, economic institutions; the national economy in a development setting.
3 units (3 hrs lec)
Prerequisite: Math 11 or 17

Economics (Econ)

12 Basics in Health Economics
Demand and Supply, and the role of the government in the health care market; cost and benefits of health care; health financing; evaluating health care interventions.
3 units (3 hrs lec)
Prerequisite: None

101 Macroeconomics
National income, employment, savings, and investment; simple dynamic models.
3 units (3 hrs lec)
Prerequisites: Econ 11, Math 50

102 Microeconomics
Behavior of the consumer, the firm, the industry; allocation of resources.
3 units (3 hrs lec)
Prerequisite: Econ 11, Math 50

106 Elements of Mathematical Economics
Mathematical approaches to elementary economic theory.
3 units (3 hrs lec)
Prerequisite: Econ 101, Econ 102

109 History of Economic Doctrines
Physiological processes in microorganisms including a study of structure, energy, production, macromolecular biosynthesis, and nutrition and growth.
3 units (3 hrs lec)
Prerequisite: Econ 101, Econ 102

111 Introductory Economic History
Economic change in Europe and selected countries.
3 units (3 hrs lec)
Prerequisite: Econ 101

115 Philippine Economic History
Economic change in the Philippines, with emphasis on conditions since 1900.
3 units (3 hrs lec)
Prerequisite: None

121 Money and Banking
Theory and policy problems concerning money credit and financial institutions.
3 units (3 hrs lec)
Prerequisite: Econ 101

131 Econometrics
Representation of economic phenomenon in terms of elementary mathematical and statistical models.
3 units (3 hrs lec)
Prerequisites: Econ 101, Econ 102, Stat 102

132 Introduction to Time Series Econometrics
Introduction to the theory and application of time series analysis in Economics
3 units (3 hrs lec)
Prerequisite: Econ 131

133 Introduction to Discrete Choice Models and Panel Data Econometrics
Binary Choice; Ordered and Multinomial Logit and Probit; Two-Period Panel Data Analysis; Fixed and Random Effects Estimation
3 units (3 hrs lec)
Prerequisite: Econ 131

141 International Economics
International trade and capital movements; survey of international economic institutions.
3 units (3 hrs lec)
Prerequisite: Econ 101

142 International Trade Policies
Problems and policies in international commerce; tariffs and controls; international agreements and organizations.
3 units (3 hrs lec)
Prerequisite: Econ 141

Economics (Econ)

151 Public Economics
Market failure; collective choice; theory of government expenditures and taxation.
3 units (3 hrs lec)
Prerequisites: Econ 101 and Econ 102

153 Project Evaluation
Discounted cash flow analysis; social opportunity cost pricing; applications to public sector projects with case studies; post-evaluation techniques.
3 units (3 hrs lec)
Prerequisites: Econ 101 and Econ 102

154 Introduction to Impact Evaluation
Impact evaluation methods; Analysis of Counterfactual; Econometric Methods of Impact Assessment; Sample Size Determination
3 units (3 hrs lec)
Prerequisites: Econ 106 and Econ 131

161 Industrial Organization
Firm and industry behavior under different market conditions; public policies toward business.
3 units (3 hrs lec)
Prerequisite: Econ 102 or consent

171 Economics of Agriculture
Problems and policies in the agricultural sector.
3 units (3 hrs lec)
Prerequisite: Econ 102

172 Resource and Environmental Economics
Introduction to the analysis of problems and management of natural resources; environmental problems and policies.
3 units (3 hrs lec)
Prerequisite: Econ 101 and Econ 102

173 Aquaculture Economics
Economic analysis of the aquaculture sector, utilization of aquaculture resources; production, consumption, and distribution of aquaculture products; problems, policies, and programs for the aquaculture sector.
3 units (3 hrs lec)
Prerequisite: Econ 102

174 Fisheries Economics
Micro and macroeconomic analysis of the fisheries sector; utilization of fisheries resources; production, consumption and distribution of fish and fisheries production: problems; policies, and programs for the fisheries industry.
3 units (3 hrs lec)
Prerequisite: Econ 101 and Econ 102

175 Economics of Fisheries Management, Regulation and Policy
Economic aspects and analysis of alternative fisheries management arrangements; fisheries regulation and management; fisheries policy.
3 units (3 hrs lec)
Prerequisite: Econ 174

176 Marketing of Agricultural and Fisheries Products
Marketing systems for agricultural and fisheries products; market structure and channels; market demand and supply; market conduct and performance.
3 units (3 hrs lec)
Prerequisites: Econ 101 and Econ 102

177 Economic Valuation of Natural Resources and Environment
Concepts and elementary theories in economic valuation of natural resources and the environment; total economic value; valuation approaches and methods.
3 units (3 hrs lec)
Prerequisite: Econ 172

Economics (Econ)

178 The Economics of Climate Change
Science and Economics of Climate Change; Climate damage assessment; Adaptation, mitigation, and policy instruments
3 units (3 hrs lec)
Prerequisites: Econ 101and Econ 102

179 Introduction to Economics of Ecosystems and Biodiversity
Application of Economic analysis on the use of biodiversity and ecosystem services.
3 units (3 hrs lec)
Prerequisite: Econ 172

181 Labor Economics
Determinants of wage levels and wage structure; employment; non-wage aspects of employment; aspects of human capital theory.
3 units (3 hrs lec)
Prerequisite: Econ 101 and Econ 102

182 Health Economics
Health Care Market; Market Failures in the Health Sector; Health Care Financing; Economic Evaluation in the Health Sector.
3 units (3 hrs lec)
Prerequisite: Econ 101 and Econ 102

191 Development Economics
Theories and problems of growth and development; survey of the experience in low-income and high-income countries.
3 units (3 hrs lec)
Prerequisite: Econ 101and Econ 102

192 Economic Analysis of Poverty and Inequality
Trends, theory, and measurement of poverty and inequality; economic analysis of policies on poverty and inequality
3 units (3 hrs lec)
Prerequisite: Econ 191

193 The Economics of Rural and Urban Poverty
Economic principles as applied to poverty measurement and issues on rural and urban poverty.
3 units (3 hrs lec)
Prerequisite: Econ 101 and Econ 102

195 Economic Geography
Economic principles as applied to the dynamics of disparate regional development.
3 units (3 hrs lec)
Prerequisite: Econ 101 and Econ 102

196 Urban and Regional Economics
Introduction to location theory; the urban economy; regional income theory; regional interdependence.
3 units (3 hrs lec)
Prerequisite: Econ 101 and Econ 102

197 Special Topics in Economics
(Topics to be indicated for records purposes)
3 units (3 hrs lec)
Prerequisite: Consent

198 Seminar in Economics
Student-led discussion on research in Economics
1 unit (3 hrs lec)
Prerequisite: Econ 106 and Econ 131

199 Research Methods in Economics
Survey of theory and methods in Economics Research
3 units (3 hrs lec)
Prerequisite: Econ 106, Econ 131, and Comm 12

199.1 Economic Research I
Methods and approaches in economics research; preparation of a research proposal.
3 units (3 hrs lec)
Prerequisite: Econ 199

Economics (Econ)

199.2 Economics Research II
Conduct of economics research project; data collection and analysis; research results presentation; writing of economics research.
3 units (3 hrs lec)
Prerequisite: Econ 199.1

History (Hist)

109 Introduction to the Study of History
History as a discipline with focus on historical sources, concepts, methodology and writing of history.
3 units (3 hrs lec)
Prerequisite: None

110 Colonial Philippines I
The Philippines under Spain
3 units (3 hrs lec)
Prerequisite: Hist 109

112 Colonial Philippines II
The Philippines under United States and Japan.
3 units (3 hrs lec)
Prerequisite: Hist 109

113 Maritime History of the Philippines
Philippine history using a maritime perspective, covering precolonial Austronesian maritime heritage up to contemporary issues of insularity.
3 units (3 hrs lec)
Prerequisite: Hist 109

114 Cultural History of the Philippines
The literary, artistic, and intellectual history of the Philippines, from the Spanish period to the present.
3 units (3 hrs lec)
Prerequisite: Hist 109

115 Philippine Revolution
The Philippine Revolution and the Philippine-American War.
3 units (3 hrs lec)
Prerequisite: Hist 109

116 Philippine Nationalism
The growth and development of nationalism in the Philippines.
3 units (3 hrs lec)
Prerequisite: Hist 109

118 Diplomatic History of the Philippines 1946-1986
Foreign relations of the Third Philippine Republic from the end of WWII up to the People Power Revolution
3 units (3 hrs lec)
Prerequisite: Hist 109

119 Philippine Historiography
Development and practice of history as a discipline in the Philippines with focus on sources, perspectives, and issues.
3 units (3 hrs lec)
Prerequisite: Hist 109

120 Introduction to World Civilization
The historical development of world civilizations from ancient times to the present with emphasis on the growth and influence of basic ideals and institutions which have shaped mankind and the chief political, economic, social, and cultural movements.
3 units (3 hrs lec)
Prerequisite: Hist 109

121 Ancient and Medieval History
Greece, Rome and Medieval Europe.
3 units (3 hrs lec)
Prerequisite: Hist 109

History (Hist)

122 Modern Europe
From the 16th century to the post-World War II period.
3 units (3 hrs lec)
Prerequisite: Hist 109

125 History of England
English history from earliest to the close of the reign of Queen Victoria.
3 units (3 hrs lec)
Prerequisite: Hist 109

127 History of Modern Russia
A study of the political and socio-economic development in Russia from the middle part of the 19th century to the present.
3 units (3 hrs lec)
Prerequisite: Hist 109

129 World Historiography
Survey of historical philosophies, writing, perspectives, and issues around the world from the classical to the modern times.
3 units (3 hrs lec)
Prerequisite: Hist 109

151 Modern East Asia
The history of China, Korea, and Japan since 1800.
3 units (3 hrs lec)
Prerequisite: Hist 109

152 Modern South Asia
The history of the Indian subcontinent from the break-up to the Mogul Empire through the establishment of the British raj to the Union of India and the establishment of the Republic of Pakistan.
3 units (3 hrs lec)
Prerequisite: Hist 109

153 Modern West Asia
Tradition, change and modernization in West Asia from the decline of the Ottoman Empire and the rise of successor states to the present.
3 units (3 hrs lec)
Prerequisite: Hist 109

154 History of Southeast Asia
The history of Burma, Thailand, Vietnam, Laos, Cambodia, Malaya, Indonesia, Singapore, and the Philippines, with emphasis on the post-colonial period.
3 units (3 hrs lec)
Prerequisite: Hist 109

156 Political and Diplomatic History of East Asia
The early foreign intercourse of China, Japan, and Korea with the West; the treaty settlements with China and Japan, the Korean Question, the Sino-Japanese war, the partition of China and the international aspect of the Boxer Uprising, the Russo-Japanese Conflict, the Manchurian Question, East Asia up to the present.
3 units (3 hrs lec)
Prerequisite: None

166 History of the United States I
The colonial and revolutionary periods and the political, social, economic, and cultural developments of the United States through the Civil War.
3 units (3 hrs lec)
Prerequisite: Hist 109

167 History of the United States II
The political, social, economic, and cultural developments from the Reconstruction period to the present.
3 units (3 hrs lec)
Prerequisite: Hist 109

History (Hist)

168 History of the Latin Americas
The history of the Central and South Americas with emphasis on post-colonial period.
3 units (3 hrs lec)
Prerequisite: Hist 109

171 African History
The history of African States with emphasis on the struggles of the African peoples to become independent from colonial rule.
3 units (3 hrs lec)
Prerequisite: None

195 Practicum in History
On the job training (OJT) and exposure in relevant work environments such as libraries, archives, data repositories, museums, law firms and historical and cultural organizations.
3 units (3 hrs lec)
Prerequisite: Junior Standing and Hist 119

199.1 Historical Research I
Development and writing of a research proposal in history with emphasis on historical research methods.
3 units (3 hrs lec)
Prerequisite: Comm 12, Stat 102, and Hist 195

199.2 Historical Research II
Conduct, writing and presentation of historical research.
3 units (3 hrs lec)
Prerequisite: Hist 199.1

Philosophy (Philo)

11 Logic
Techniques and formal deduction within the scope of sentential and predicate logic.
3 units (3 hrs lec)
Prerequisite: None

160.1 Philosophy of Natural Science
An introduction to the Philosophy of science with emphasis on the nature of explanation/prediction, laws, and theory in the natural sciences.
3 units (3 hrs lec)
Prerequisite: Senior Standing and consent

160.2 Philosophy of Social Sciences
An introduction to the Philosophy of Science with emphasis on the nature of explanation/prediction, laws, and theory in the social sciences.
3 units (3 hrs lec)
Prerequisite: Senior Standing

171 Ethics
Problems and theories of moral values.
3 units (3 hrs lec)
Prerequisite: None

Philippine Institutions (PI)

100 The Life and Works of Jose Rizal
The significance of the life and writings of Rizal in the life of the Filipino people.
3 units (3 hrs lec)
Prerequisite: Senior Standing

Political Science (Pol Sci)

11 Introduction to Political Science
Concepts, theories, and principles of political science; types of political systems; development of political institutions and processes.
3 units (3 hrs lec)
Prerequisite: None

14 Philippine Government and Politics
Development, organization and operation of the Philippine political system, with emphasis on the present.
3 units (3 hrs lec)
Prerequisite: None

101 Fundamentals in Political Science
Concepts, theories, principles, and debates around the politics of public choice or contested decisions with collective implications.
3 units (3 hrs lec)
Prerequisite: None

102 Philippine Politics and Governance
Philosophy, actors, institutions, context, and dynamics of Philippine politics from pre-colonial era to contemporary period.
3 units (3 hrs lec)
Prerequisite: None

110 Research Methods in Political Science
Research design; surveys, polls, focus group; use of statistics in political science; comparative method, case study, interviewing, documentary, archival and discourse analysis
3 units (3 hrs lec)
Prerequisites: Pol Sci 101, Pol Sci 102, Stat 102, and Junior Standing

140 Introduction to Comparative Politics
Introductory course on Comparative Politics, which covers theories, concepts, and methods and their application across country cases.
3 units (3 hrs lec)
Prerequisites: Pol Sci 101 and Pol Sci 102

141 State Formation
Bellicist and non-bellicist theories of state formations; war, anarchy, and the rise of development of the state; economic development and state formation; history and problem of state formation in the third world context.
3 units (3 hrs lec)
Prerequisite: Pol Sci 140

142 Democratization
Definition of democracy and the process of democratization; political culture, and economic factors shaping democracy transition from authoritarian to democratic regimes; democratic consolidation and danger of authoritarian relapse, rule of law and liberal values.
3 units (3 hrs lec)
Prerequisite: Pol Sci 140

143 Non-Democratic Regimes
Types of non-democratic regimes; military regime, one party rule, personalistic rule, bureaucratic authoritarianism; collapse and transition of authoritarian regime; how non-democratic regimes endure.
3 units (3 hrs lec)
Prerequisite: Pol Sci 140

144 Civil-Military Relations
Issues, debates, and theories of civil-military relations; determinants and outcomes of civilian control over the military in democratic, non-democratic and developed and developing contexts
3 units (3 hrs lec)
Prerequisite: Pol Sci 140

Political Science (Pol Sci)

145 Comparative Conflict Studies
Theories, concepts, and methods in the comparative study of the nature, dynamics and outcomes of violent or forceful contestations of power conflicts within the state.
3 units (3 hrs lec)
Prerequisite: Pol Sci 140

146 Electoral and Party Systems
Comparative course on electoral and party systems in both developed and developing state contexts; their function in the political system, particularly how they shape the aggregation and articulation of interests and the control of governmental power and public policy.
3 units (3 hrs lec)
Prerequisite: Pol Sci 140

147 Comparative Constitutional Design
Comparative course on the actors and institutions involved in the dynamics of constitutional design in both developed and developing state contexts; vertical and horizontal divisions of power and implications to development, democratization and political stability.
3 units (3 hrs lec)
Prerequisite: Pol Sci 140

148 Selected Themes in Comparative Politics
Problem-driven issues or themes in contemporary Comparative Politics. Issues or themes can include the following topics: area studies, gender, religion, comparative economic systems
3 units (3 hrs lec)
Prerequisite: Pol Sci 140

149 Comparative Politics of Development
The theory, process and dynamics of political development and the relationship of socio-ecological development and political development
3 units (3 hrs lec)
Prerequisite: Pol Sci 140

150 Philippine Public Policy and Administration
Theories, principles, practices and challenges of Philippine public policy and administration; providing theoretical, historical, behavioral, and institutional overview, analysis and evaluation of the policy-making process, administration, and dynamics in the Philippines. .
3 units (3 hrs lec)
Prerequisites: Pol Sci 101 and Pol Sci 102

151 Philippine Health and Public Policy
Overview of Philippine policy responses to public health issues and their implications on people's health situations
3 units (3 hrs lec)
Prerequisite: Pol Sci 150; COI (for non-majors)

152 Welfare Policy and Administration
Principles, structures, processes and actors in social welfare and administration in the Philippines and their implications on poverty and other social security concerns.
3 units (3 hrs lec)
Prerequisite: Pol Sci 150

153 Environmental Policy and Administration
Principles, processes, tools and practices of environmental policy and administration that have implications to sustainable development (i.e., public welfare and economic growth, environmental conservation/protection, and social equity) in the Philippines.
3 units (3 hrs lec)
Prerequisite: Pol Sci 150; COI (for non-majors)

Political Science (Pol Sci)

154 National Security Policy and Administration
Theories, principles, processes, frameworks and practices of security policy and administration in the Philippines with emphasis on national security determinants and outcomes.
3 units (3 hrs lec)
Prerequisite: Pol Sci 150

155 Philippine Local Government Policy and Administration
Introduction to the interface between local government policy and administration in the Philippines, dealing with issues of decentralization, local administration, public service, and social welfare.
3 units (3 hrs lec)
Prerequisite: Pol Sci 150; COI (for non-majors)

156 Ethics in Public Service
Questions, issues and debates on ethics and accountability in the Philippine public service
3 units (3 hrs lec)
Prerequisite: Pol Sci 150

158 Selected Themes in Public Policy and Administration
Problem-driven issues or themes in contemporary Philippine public policy and administration. Issues or themes can include the following topics: understanding the bureaucracy, public budget and finance, environmental management and development, gender and public policy, urban development
3 units (3 hrs lec)
Prerequisite: Pol Sci 150

160 Political Culture, Behavior, Movement and Dynamics
Theories and methods on individual and collective political behavior, within the context of culture; values, beliefs, attitudes, ideological formation, and concepts of power, that inform political participation and dynamics.
3 units (3 hrs lec)
Prerequisite: Pol Sci 101, Pol Sci 102

161 Politics and the Middle Class
The development and the consequences of class in politics with a focus on the middle class and democracy; class formation, class relations, the relationship between class and political change, violence, revolution, democratization.
3 units (3 hrs lec)
Prerequisite: Pol Sci 160

163 Political Behavior: Processes and Movements
Belief systems; nature and development of political processes and movements.
3 units (3 hrs lec)
Prerequisite: Pol Sci 160

164 Identity Politics
Nationalism and other processes in constructing identity; dynamics, consequences, and strategies in resolving identity conflicts.
3 units (3 hrs lec)
Prerequisite: Pol Sci 160

165 Revolutions
Key theories, frameworks, questions, and issues in the study of revolutions.
3 units (3 hrs lec)
Prerequisite: Pol Sci 160

166 Political Ideologies
Key theories, frameworks, questions, and debates in the study of political ideologies as worldviews and as determinants of individual and collective behavior
3 units (3 hrs lec)
Prerequisite: Pol Sci 160

Political Science (Pol Sci)

167 Networks and Epistemic Communities
Collective and social aspects of knowledge, agency, and decision-making and the role of networks and epistemic communities in domestic and global politics
3 units (3 hrs lec)
Prerequisite: Pol Sci 160

168 Selected Themes in Political Culture, Behavior, Movement and Dynamics
Problem-driven issues or themes in Political Culture, Behavior, Movement and Dynamics
3 units (3 hrs lec)
Prerequisite: Pol Sci 160

169 Voting Behavior
How and why people vote the way they do; Columbia school, Michigan School, retrospective voting, economic voting; civicness and rational actor approach; valence; patronage and clientelism
3 units (3 hrs lec)
Prerequisite: Pol Sci 160

170 Comparative Western Politics
Comparative study of political systems of UK, France, USSR, US and Switzerland.
3 units (3 hrs lec)
Prerequisites: Pol Sci 11 and Pol Sci 14

171 Comparative Politics of Capitalist Systems
Comparative politics focusing attention on the political culture, processes, and institutions of states, which adhere to the capitalist system.
3 units (3 hrs lec)
Prerequisites: Pol Sci 11, Pol Sci 14

172 Government and Politics of Selected European States
Political systems of the United Kingdom, France, Italy, East and West Germany and the Union of Soviet Socialist Republic.
3 units (3 hrs lec)
Prerequisites: Pol Sci 11, and Pol Sci 14 or consent

174 Government and Politics of Latin America
Comparison of the nature and dynamics of politics in selected Latin American countries.
3 units (3 hrs lec)
Prerequisites: Pol Sci 11, Pol Sci 14

175 Political Systems of Israel and Arab States
3 units (3 hrs lec)
Prerequisites: Pol Sci 11, Pol Sci 14

176 African Political Systems
Political systems of African States.
3 units (3 hrs lec)
Prerequisites: Pol Sci 11, Pol Sci 14

177 Government and Politics of Asia I
Political systems of Japan, the People's Republic of China, North Korea, Nationalist China and the Republic of South Korea.
3 units (3 hrs lec)
Prerequisites: Pol Sci 11 and Pol Sci 14 or consent

178 Government and Politics of Asia II
Political systems of Burma, Thailand, Laos, Cambodia, Vietnam, Malaysia, Singapore and Indonesia.
3 units (3 hrs lec)
Prerequisites: Pol Sci 11 and Pol Sci 14 or consent

180 International Relations
Interplay on political forces in the global system; national power, national interest and goals, and settlement of nternational disputes; the dynamics between state and non-state actors
3 units (3 hrs lec)
Prerequisites: Pol Sci 101 and Pol Sci 102

Political Science (Pol Sci)

181 War and Peace
Theory of war and peace; historical trend in interstate conflict; levels of analysis in explaining war and peace; human nature and war; realist theories of war, balance of power, hegemonic theories; societal level of war and peace, democratic peace theory; Marxist theory
3 units (3 hrs lec)
Prerequisite: Pol Sci 180

182 Foreign Policy
Actors and institutions in foreign policy formulation; theories, models and debates and the dynamics of the pursuit of national interest
3 units (3 hrs lec)
Prerequisite: Pol Sci 180

183 International Political Economy
Fundamentals in international political and economic analysis; analysis of the workings of the global economy and the interaction of political and economic forces in shaping the global order.
3 units (3 hrs lec)
Prerequisites: Pol Sci 180 and Econ 11

184 International Organizations
Surveys the historical and theoretical foundations for the creation of international organizations, including their contributions to international relations; potentials and limitations of international organizations in the current global order.
3 units (3 hrs lec)
Prerequisite: Pol Sci 180

185 Public International Law
Nature, development, sources, principles, and problems of international law and its role in the development of a world community; selected cases.
3 units (3 hrs lec)
Prerequisite: Pol Sci 180

187 Regionalism: EU and ASEAN
Survey of the historical and theoretical foundations for the creation of regional organizations in Southeast Asia and Europe; potentials and limitations of regional organizations in the current global order.
3 units (3 hrs lec)
Prerequisite: Pol Sci 180

188 Selected Themes in International Relations
Problem-driven issues or themes in contemporary International Relations.
3 units (3 hrs lec)
Prerequisite: Pol Sci 180

190 Introduction to Political Theory
Political ideas in relation to practice, political analysis and political theory; human nature, relationship between individual, the state and society; power, legitimacy, law, justice, and obligation; freedom, social welfare, property and utopia.
3 units (3 hrs lec)
Prerequisite: Pol Sci 101, Pol Sci 102, and Junior Standing

191 Pol Sci 191 Asian Political Thought
Main current of Asian political thought.
3 units (3 hrs lec)
Prerequisite: Pol Sci 190

192 Ancient and Medieval Political Theory
Political thought from Plato to Machiavelli.
3 units (3 hrs lec)
Prerequisite: Pol Sci 190

Political Science (Pol Sci)

193 Modern Political Theory
Political thought after Machiavelli, with emphasis on the contemporary.
3 units (3 hrs lec)
Prerequisite: Pol Sci 190

194 Contemporary Political Theory
Main currents, urgent problems, major debates, and selected influential thinkers in contemporary political theory.
3 units (3 hrs lec)
Prerequisite: Pol Sci 190

195 Practicum in Political Science
Internship in government offices and civil society organizations with faculty supervision (minimum of 200 practicum hours with 9 hours of class instruction).
3 units (3 hrs lec)
Prerequisite: Pol Sci 190 and Junior Standing

196 Philippine Political Thought
Main currents of Philippine political thought.
3 units (3 hrs lec)
Prerequisite: Pol Sci 190

198 Selected Themes in Political Theory
Problem-driven issues or themes in ancient, medieval and contemporary political philosophy or in the history of political theory.
3 units (3 hrs lec)
Prerequisite: Pol Sci 190

199 Research in Political Science
Approaches and methods of research in systematic politics
3 units
Prerequisite: Junior Standing

199.1 Research in Political Science I
Theories, principles, frameworks, and methods in designing and formulating a research project in Political Science
3 units (3 hrs lec)
Prerequisite: Pol Sci 110 and Senior Standing

199.2 Research in Political Science II
Supervised implementation of research proposal in Political Science with emphasis on empirical verification or analytical findings
3 units (3 hrs lec)
Prerequisite: Pol Sci 199.1

Psychology (Psych)

11 Principles of Psychology
Principles of the science of psychology.
3 units (3 hrs lec)
Prerequisite: None

101 General Psychology
The empirical and conceptual foundations of psychology in its main fields. Primarily for students who desire an intensive preparation for the more advanced courses in psychology.
3 units (3 hrs lec)
Prerequisite: None

108 Filipino Psychology
3 units (3 hrs lec)
Prerequisite: Psych 101

109 Cultural Psychology
Overview of theory and research in cultural psychology organized around the areas of development and socialization, identity and social relationships, gender, emotion, morality, and physical and mental health in light of cultural variations.
3 units (3 hrs lec)
Prerequisite: Psych 101

Psychology (Psych)

110 Psychological Statistics
Statistical techniques in design analysis, and interpretation of psychological studies.
5 units (5 hrs lec)
Prerequisite: Psych 101

115 Experimental Psychology
Principles of experimental inference: experimental design in behavior research.
5 units (3 hrs lec, 6 hrs lab)
Prerequisites: Psych 11 or Psych 101 and Psych 110.

116 Qualitative Methods in Psychology
Introduction to current qualitative theory, methods, and practice in psychological research. Examines the epistemological, conceptual, and political foundations of, as well as issues in, qualitative research.
3 units (3 hrs lec)
Prerequisite: Psych 101

118 Field Methods in Psychology
The principles and practice of psychological research in natural environments including systematic observation, unobtrusive measures, interviewing and field experiments.
3 units (3 hrs lec)
Prerequisite: 6 units of psychology

130 Biological Psychology
Basic concepts and findings in neuroscience with special emphasis on brain-body relationship, brain-behavior relationship, and mind-behavior relationship.
3 units (3 hrs lec)
Prerequisite: Psych 101

135 Perception
Principles of perception in the major sense modalities; methods of investigation.
3 units (3 hrs lec)
Prerequisites: Psych 11 or Psych 101, and Psych 115, or consent

140 Behavior Analysis
Basic behavioral process in terms of experimental learning theory.
3 units (3 hrs lec)
Prerequisite: Psych 11 or Psych 101, or written consent

145 Psychology of Language
3 units (3 hrs lec)
Prerequisite: Psych 140 or consent

148 Cognitive Psychology
Information-processing approach to studying perception, attention, memory, language, representation, problem-solving, reasoning, judgment and decision making.
3 units (3 hrs lec)
Prerequisite: Psych 101

150 Theories of Personality
Systematic approaches to the understanding of personality formation and dynamics.
3 units (3 hrs lec)
Prerequisite: Psych 11 or Psych 101, or written consent

155 Abnormal Psychology
3 units (3 hrs lec)
Prerequisite: Psych 140 or consent

162 Psychological Assessment
Theories and methods in the development, evaluation, and utilization of psychological tests and measures.
5 units (3 lec, 6 lab)
Prerequisite: Psych 110, Psych 150

Psychology (Psych)

170 Developmental Psychology.
Factors which influence the development of the person from prenatal period to late adulthood. Analysis of characteristics and capacities within each period and within each developmental mode; physical, cognitive and psychosocial

3 units (3 hrs lec)
Prerequisite: Psych 101

171 Child Psychology.
A systematic study of the behavior of normal children with emphasis on socialization and personality development.

3 units (3 hrs lec)
Prerequisite: Psych 11 or Psych 101, and written consent

180 Social Psychology.
Experimental investigation of group behavior, emotions, motivations and personality dynamics in social behavior and social learning, and perception in small groups and in cultural contexts.

3 units (3 hrs lec)
Prerequisite: Junior Standing

182 Group Processes.
Theories and methods for comprehending, analyzing, using and evaluating basic processes in group interaction.

3 units (3 hrs lec)
Prerequisite: Consent

183 Psychology of Interpersonal and Group Communication.
Communication as a focal variable permeating social psychological phenomena such as a group structure processes, attitude change.

3 units (3 hrs lec)
Prerequisites: Psych 11 or Psych 101, Psych 180, and Comm 3

185 Industrial/Organizational Psychology.
Application of the knowledge from the theories and methods of Psychology to practical human problems in organization, definition and measurement of performance, prediction of performance, facilitation of performance (training, etc.), remuneration of performance and the organizational and social context of work.

3 units (3 hrs lec)
Prerequisite: Psych 101 and Psych 162

186 Design and Administration of Training Programs.
Perspectives on the fundamentals of the training process including underlying learning theories and training needs assessment, design, development and evaluation.

3 units (3 hrs lec)
Prerequisite: Psych 185

188 LGBT Psychology
Contemporary theorizing and empirical research in psychological science related to the lives and experiences of lesbian, gay, bisexual, and transgender (LGBT) individuals, couples, families and communities in Filipino and global contexts.

3 units (3 hrs lec)
Prerequisite: Psych 180

191 Disaster and Mental Health
An overview of the impact of disasters on individual, families and communities, with special focus on the impact of disasters on mental health and principles in providing psychosocial support for survivors.

3 units (3 hrs lec)
Prerequisites: Psych 118, Psych 155, and Psych 180

Psychology (Psych)

195 Practicum in Psychology
On-the-job training in the different areas of psychology (e.g., corporate offices, government and non-government agencies, schools, hospitals and private clinics, communities, research laboratories, etc.) where student can put into practice the psychological competencies that they have acquired from their various courses.
3 units (150 hours)
Prerequisites: Psych 150, Psych 155, Psych 162, Psych 180, and Psych 185

197 Special Topics in Psychology
May be taken twice as long as the topics are different (List of Special Topics: Positive Psychology, Counseling Psychology, Health Psychology, Sports Psychology, Psychology of Aging, Community Psychology, Service Learning in Psychology, or any other Special Topics course approved by the Division).
3 units (3 hrs lec)
Prerequisite: None

199.1 Research in Psychology I
Introduction to the various methods of research in Psychology through directed research activities.
3 units
Prerequisites: Psych 110, Psych 115, and Senior Standing

199.2 Research in Psychology II
Conduct of psychology research project; data collection and analysis; research results presentation; writing of psychology research project.
3 units
Prerequisites: Psych 199.1 and Senior Standing

Social Science (Soc Sci)

101 Social Science Statistics
Descriptive statistics, sampling, statistical inference (estimation and tests of hypotheses) applied to the social sciences.
3 units (3 hrs lec)
Prerequisite: Math 11

105 Gender Issues in Philippine Society
Gender concepts, issues, and concerns in Philippine society.
3 units (3 hrs lec)
Prerequisite: Junior Standing

199.1 Social Science Research I
Strategies and techniques of social science research, includes planning and formulation of research design.
3 units (3 hrs lec)
Prerequisites: Soc Sci 101 and Senior Standing

199.2 Social Science Research II
Research into social science issues and problems leading to empirical verifications or analytical findings.
3 units (3 hrs lec)
Prerequisite: Soc Sci 199.1 or Consent of the Division

Sociology (Socio)

11 Introductory Sociology
The nature, scope, and basic concepts of sociology as an approach to the study of society with particular application to Philippine conditions.
3 units (3 hrs lec)
Prerequisite: None

Sociology (Socio)

101 General Sociology
Theoretical concerns of the fields of sociology and the various techniques in the study of social realities.
3 units (3 hrs lec)
Prerequisite: None

102 Social Organization
Analysis of the main forms of social organization in simple and complex societies; principles of integration and disintegration of social groups.
3 units (3 hrs lec)
Prerequisite: Socio 11 or Socio 101 or equivalent

103 The Family
Theories and researches on the family as a social institution.
3 units (3 hrs lec)
Prerequisite: Socio 11 or Socio 101 or equivalent

114 The Philippine Contemporary Social Issues
A critical discussion of contemporary social issues in the Philippines using sociological perspective, theories, and social science research methods.
3 units (3 hrs lec)
Prerequisite: Socio 11 or Socio 101 or equivalent

122 Rural Sociology
Comparative studies of rural life.
3 units (3 hrs lec)
Prerequisite: Socio 11 or Socio 101 or equivalent

126 Urban Sociology
Comparative studies of urban communities; nature and consequences of urbanization.
3 units (3 hrs lec)
Prerequisite: Socio 11 or Socio 101 or equivalent

140 Socialization and Group Interaction
Analysis of socialization as a process, social interaction in and between groups and aspects of collective behavior.
3 units (3 hrs lec)
Prerequisite: Socio 11 or Socio 101 or equivalent.

142 Sociology of Deviant Behavior
Analysis of departure from model societal patterns and the relevant group processes including mechanisms of social control.
3 units (3 hrs lec)
Prerequisite: Socio 11 or Socio 101 or equivalent

145 Collective Behavior
Studies in mass behavior, social movements, and political action.
3 units (3 hrs lec)
Prerequisite: Socio 11 or Socio 101 or equivalent.

149 Race and Ethnic Relations
The nature and problems of racial and ethnic contacts. Study of intersocietal majority-minority relations, group conflict, prejudice and cooperation.
3 units (3 hrs lec)
Prerequisite: Socio 11 or Socio 101 or equivalent

160 Society and Population
Description and analysis of population aggregates; world population growth, population problems, and theories; the inter-relation of population and social structure.
3 units (3 hrs lec)
Prerequisite: Socio 11 or Socio 101 or equivalent.

Sociology (Socio)

165 Human Ecology
Principles and methods of ecology applied to the study of the interaction of man, environment, and technology.
3 units (3 hrs lec)
Prerequisite: Socio 11 or Socio 101 or equivalent

167 Environmental Sociology
An analysis of the environmental issues using sociological perspective and examination of the relationships of social institutions and the environment.
3 units (3 hrs lec)
Prerequisite: Socio 101

181 Quantitative Methods in Social Research
Introduction to the principles and methods of quantitative research; the different techniques and skills in generating, handling and analyzing quantitative data.
3 units (3 hrs lec)
Prerequisite: Stat 102, Socio 101 or COI (for non-majors)

182 Qualitative Methods in Social Research
Introduction to the principles and methods of qualitative social research; the different techniques and skills of generating, handling, and analyzing qualitative data.
3 units (3 hrs lec)
Prerequisite: Socio 101 or COI (for non-majors)

183 Survey Methods of Social Research
Questionnaire construction, research design, data analysis and interpretation.
3 units (3 hrs lec)
Prerequisite: Socio 181

193 Sociological Theories I
The major classical social theorists and their work.
3 units (3 hrs lec)
Prerequisite: Socio 101

194 Sociological Theories II
The works of major contemporary sociologists.
3 units (3 hrs lec)
Prerequisite: Socio 193

195 Sociological Theories
Background and trends in sociological thought from contemporary to the present.
3 units (3 hrs lec)
Prerequisite: Socio 101 or equivalent.

197 Special Topics in Sociology
Specially developed occasional courses exploring variety of theoretical and substantive areas within the field of Sociology.
3 units (3 hrs lec)
Prerequisite: Socio 101 or COI (for non-majors)

199 Methods of Sociological Research
Survey of and introduction to various methods of sociological research.
3 units (3 hrs lec)
Prerequisites: Socio 101 and Socio190 or Senior Standing and a course in statistics

199.1 Sociological Research I
Development of an implementable research proposal, including formulation of research problem and objectives, development of review of related literature and theoretical and conceptual frameworks and designing a research methodology.
3 units (3 hrs lec)
Prerequisites: Socio 182, Socio 183, and Comm 12

Sociology (Socio)

199.2 Sociological Research II
Integrative course in which students undertake an approved research proposal including the conduct of data colle3ction and analysis, research results presentation and writing of research paper.

3 units (3 hrs lec)
Prerequisite: Socio 199.1

Visayan Studies (VS)

101 Visayan History, Society and Culture.
Multi-disciplinary studies on Visayan society and culture.

3 units (3 hrs lec)
Prerequisite: Junior standing

DEPARTMENT OF PHYSICAL EDUCATION

Undergraduate Courses

Physical Education (PE)

1 F*oundation of Physical Fitness*
A course required of all college freshmen for one semester, to acquaint them of the benefits derived from regular physical activities as well as to enable them to design their own personal fitness program.

2 units (2 hrs lec)
Prerequisite: None

2 Elective Physical Education Activities for Beginners
Choice of: Aerobic Dance, Archery, Arnis, Badminton, Ballet Fitness, Baseball, Basketball, Beach Volleyball, Beginner's Ballet, Bowling, Camping, Cheerdancing, Football, Futsal, Gymnastics, Handball, International Folk Dance, Lawn Tennis, Line Dance, Modern Contemporary Dance, Modern Jazz, Muay Thai, Netball, Philippine Folk Dance, Philippine Games, Popular Ballroom, Sepaktakraw, Social Dance, Social Recreation, Softball, Swimming,Table Tennis, Track and Field, Ultimate Frisbee, Volleyball, Wushu, Yoga

2 units (2 hrs lec and practice)
Prerequisite: None

3 Elective Physical Education Activities for Advanced Students
Choice of: Advanced Arnis, Advanced Badminton, Advanced Basketball, Advanced Beach Volleyball, Advanced Football, Advanced Futsal, Advanced Line Dance, Advanced Sepaktakraw, Advanced Social Dance, Advanced Softball, Advanced Swimming, Advanced Table Tennis, Advanced Volleyball.

2 units (2 hrs lec and practice)
Prerequisite: Equivalent PE 2

BACHELOR OF ARTS IN COMMUNICATION AND MEDIA STUDIES

First Year First Semester

Course No.	Course Title	Units
GE Core 1		3
GE Core 2		3
GE Elective 1		3
CMS 21	Foundations of Media Writing	3
CMS 31	Effective Oral Skills for Media Communication	3
CMS 100	History of Media Communication	3
NSTP 1		(2)
PE 1	Foundations of Physical Fitness	(3)
		18

First Year Second Semester

Course No.	Course Title	Units
CMS Elective		3
CMS Elective		3
GE Core 3		3
GE Core 4		3
GE Elective 2		3
CMS 101	Introduction to Media Communication	3
NSTP 2		(2)
PE		(3)
		18

Second Year First Semester

Course No.	Course Title	Units
CMS Elective		3
CMS Elective		3
GE Core 5		3
GE Core 6		3
GE Core 7		3
CMS 102	Communication and Media Theories	3
PE		(2)
		18

Second Year Second Semester

Course No.	Course Title	Units
CMS Elective		3
GE Elective 3		3
GE Elective 4		3
GE Elective 5		3
CMS 103	Media-Related Laws and Codes	3
CMS 105	Technologies in Media Communication	3
PE		(2)
		18

Third Year First Semester

Course No.	Course Title	Units
CMS Elective		3
CMS Elective		3
CMS Elective		3
CMS 104	Media and the Community	3
CMS 107	Fundamentals of Communication Planning	3
CMS 190	Digital Media Composition for Production	3
		18

Third Year Second Semester

Course No.	Course Title	Units
Free elective		3
CMS Elective		3
CMS Elective		3
CMS 110	Development Media	3
CMS 194	Media Appreciation and Criticism	3
CMS 197	Communication Research Methods	3
		18

Third Year Midyear

Course No.	Course Title	Units
CMS 195	Media Internship	3
		3

Fourth Year First Semester

Course No.	Course Title	Units
Free Elective		3
CMS Elective		3
CMS 192	Media Writing for Specific Purposes	3
CMS 198	Contemporary Issues in Media Communication	3
CMS 199.1	Research or Creative Work in Communication and Media Studies I	3
		15

Fourth Year Second Semester

Course No.	Course Title	Units
Free Elective		3
CMS Elective		3
CMS 199.2	Research or Creative Work in Communication in Media Studies II	3
Comm 11	Professional Communication	3
PI 100	The Life and Works of Jose Rizal	3
		15

TOTAL NUMBER OF UNITS **141 units**

BACHELOR OF ARTS (COMMUNITY DEVELOPMENT)

First Year First Semester

Course No.	Course Title	Units
GE Core 1		3
GE Core 2		3
GE Core 3		3
GE Elective 1		3
GE Elective 2		3
CD 100	Introduction to CD	3
PE 1	Foundations of Physical Fitness	(2)
NSTP		(3)
		18

First Year Second Semester

Course No.	Course Title	Units
GE Core 4		3
GE Core 5		3
GE Core 6		3
Econ 11	Introductory Economics	3
CD 101	Philippine Society & CD	3
CD 110	Development Perspectives	3
PE 2/3	Philippine Folk Dance	(2)
NSTP		(3)
		18

Second Year First Semester

Course No.	Course Title	Units
GE Core 7	SY FS Course 1 Title	3
Comm 12	Technical Communication	3
Elective 1	SY FS Course 3 Title	3
CD 112	Development Policies and Programs for the Basic Sectors	3
CD 116	Gender Analysis in CD	3
CD 120	Community Organizing and Mobilization	3
PE 2/3	Swimming	(2)
		18

Second Year Second Semester

Course No.	Course Title	Units
GE Elective 3		3
Stat 102	Statistical Methods in Research	3
Elective 2	SY SS Course 3 Title	3
CD 124	Innovative Strategies in Community Education	3
CD 126	›mmunity and Organizational Development	3
CD 140	Development Planning and Governance	3
PE 2/3		(2)
		18

Third Year First Semester

Course No.	Course Title	Units
GE Elective 4		3
Elective 3		3
CD 134	Social Marketing and CD	3
CD 136	Resource Generation for Development	3
CD 142	Participatory Project Development and Management	3
CD 152	Community-Based Natural Resources Management	3
		18

Third Year Second Semester

Course No.	Course Title	Units
Elective 4		3
CD 143	Participatory Monitoring and Evaluation	3
CD 156	Disaster and Climate Resilience in Community Settings	3
CD 180	Introductory Supervised Fieldwork	3
CD 199.1	Research Methods	3
		18

Third Year Midyear

Course No.	Course Title	Units
CD 181	Integrated Fieldwork Instruction	3
		3

Fourth Year First Semester

Course No.	Course Title	Units
GE Elective 5		3
Elective 5		3
Elective 6		3
Elective 7		3
CD 197	Special Topics in CD	3
		18

Fourth Year Second Semester

Course No.	Course Title	Units
Elective 8	FY SS Course 1 Title	3
Elective 9	FY SS Course 2 Title	3
Elective 10	FY SS Course 3 Title	3
PI 100	The Life and Works of Jose Rizal	3
CD 199.2	Research Project in CD	3
		15

TOTAL NUMBER OF UNITS **141 units**

NOTE:

* Sixty-three (63) units of CD Major courses. Thirty-six (36) units of GE courses: 7 required GE courses and 5 GE electives. Student can opt to take 30 units of courses in one area of specialization for her/his second major, or 30 units of combined courses in other areas of specialization such as in History, Psychology, Political Science or Sociology.

- 3 units of Philippine Studies in any domain (e.g. Hist 1, Lit 1)

BACHELOR OF ARTS (HISTORY)

First Year First Semester

Course No.	Course Title	Units
GE Core 1		3
GE Elective 1		3
Language Course 1		3
GE Elective 2		3
Econ 11	Introductory Economics	3
Hist 109	Introduction to the Study of History	3
PE 1	Foundations of Physical Fitness	(2)
NSTP		(3)
		18

First Year Second Semester

Course No.	Course Title	Units
Language Course 2		3
GE Core 2		3
GE Elective 4		3
GE Elective 3		3
Hist 120	Introduction to World Civilization	3
GE Core 3		3
PE 2	Philippine Folk Dance	(2)
NSTP		(3)
		18

Second Year First Semester

Course No.	Course Title	Units
GE Elective 5		3
GE Core 4		3
Hist 113	Maritime History of the Philippines	3
Qualified Elective 1		3
Hist 114	Cultural History of the Philippines	3
Language Course 3		3
PE		(2)
		18

Second Year Second Semester

Course No.	Course Title	Units
GE Core 5		3
Hist 116	Philippine Nationalism	3
Stat 102	Statistical Tools for Research	3
Language Course 4		3
Qualified Elective 2		3
PE		(2)
		15

Third Year First Semester

Course No.	Course Title	Units
Qualified Elective 3		3
Qualified Elective 4		3
Comm 12	Technical Communication	3
Hist 119	Philippine Historiography	3
History Elective 1		3
VS 101	Visayan History, Society and Culture	3
		18

Third Year Second Semester

Course No.	Course Title	Units
GE Core 6		3
Hist 122	Modern Europe	3
Qualified Elective 5		3
Qualified Elective 6		3
Hist 129	World Historiography	3
History Elective 2		3
		18

Third Year Midyear

Course No.	Course Title	Units
Hist 195	Practicum in History	3
		3

Fourth Year First Semester

Course No.	Course Title	Units
GE Core 7		3
Qualified Elective 7		3
History Elective 3		3
Qualified Elective 8		3
PI 100	The Life and Works of Jose Rizal	3
Hist 199.1	Historical Research II	3
		18

Fourth Year Second Semester

Course No.	Course Title	Units
Hist 154	History of Southeast Asia	3
History Elective 4		3
Qualified Elective 9		3
Qualified Elective 10		3
Hist 199.2	Historical Research II	3
		15

TOTAL NUMBER OF UNITS **141 units**

BACHELOR OF ARTS IN LITERATURE

First Year First Semester

Course No.	Course Title	Units
GE Core 1		3
GE Core 2		3
GE Elective 1		3
CS 101	Introduction to Cultural Studies	3
Lit 100	Introduction to Literature	3
NSTP		(3)
PE 1	Foundations of Physical Fitness	(2)
		15

First Year Second Semester

Course No.	Course Title	Units
Filipino Elective		3
GE Core 3		3
GE Elective 2		3
CW 101	Introduction to Creative Writing	3
Lit 103	Literary Theory and Criticism	3
Lit 130	Philippine Literature of the Waters	3
NSTP		(3)
PE		(2)
		18

Second Year First Semester

Course No.	Course Title	Units
GE Core 4		3
GE Elective 3		3
Lit 104	Philippine Literary Criticism	3
Lit 105	Literature and New Media	3
Lit 110	Philippine Literature 1	3
Lit 120	Literature of Asia	3
PE		(2)
		18

Second Year Second Semester

Course No.	Course Title	Units
Language Elective		3
GE Core 5		3
GE Elective 4		3
CW 111	Creative Writing (Poetry)	3
Lit 101	Introduction to Literary Research	3
Lit 111	Philippine Literature 2	3
PE		(2)
		18

Third Year First Semester

Course No.	Course Title	Units
Language Elective		3
GE Core 6		3
GE Elective 5		3
CS 102	Issues in Literary and Cultural Studies	3
CW 112	Creative Writing (Short Story)	3
Lit 112	Philippine Literature 3	3
		18

Third Year Second Semester

Course No.	Course Title	Units
Major elective		3
GE Core 7		3
Comm 11	Professional Communication	3
Lit 102	Introduction to Literary Translation	3
Lit 121	Literatures of the America	3
Lit 199	Research Methods	3
		18

Third Year Midyear

Course No.	Course Title	Units
Lit 195	Literature Internship	3
		3

Fourth Year First Semester

Course No.	Course Title	Units
Free Elective		3
Major Elective		3
Lit 122	Literatures of Africa and Oceania	3
Lit 123	Literatures of Europe	3
Lit 200	Thesis	3
		15

Fourth Year Second Semester

Course No.	Course Title	Units
Free Elective		3
Major elective		3
Major Elective		3
Major Elective		3
PI 100	The Life and Works of Jose Rizal	3
Lit 190	Approaches to Teaching Literature	3
		18

TOTAL NUMBER OF UNITS **141 units**

BACHELOR OF ARTS IN POLITICAL SCIENCE

First Year First Semester

Course No.	Course Title	Units
Pol Sci 101	Fundamentals in Political Science	3
GE Core 1		3
GE Core 2		3
Econ 11	Introductory Economics	3
GE Core 3		3
Language Course		3
PE 1	Foundations of Physical Fitness	(2)
NSTP		(3)
		18

First Year Second Semester

Course No.	Course Title	Units
Pol Sci 102	Philippine Politics and Governance	3
Comm 12	Technical Communication	3
GE Core Course 4		3
GE Core Course 5		3
GE Core Course 6		3
Language Course		3
PE		(2)
NSTP		(3)
		18

Second Year First Semester

Course No.	Course Title	Units
Pol Sci 150	Philippine Public Policy and Administration	3
Pol Sci 160	Political Culture, Behavior, Movement and Dynamics	3
Qualified Elective 1		3
GE Core Course 7		3
GE Elective 1		3
GE Elective 2		3
PE		(2)
		18

Second Year Second Semester

Course No.	Course Title	Units
Pol Sci 140	Introduction to Comparative Politics	3
Pol Sci Elective 1		3
Stat 102	Statistical Methods in Research	3
Pol Sci Elective 2		3
GE Elective 3		3
Qualified Elective 2		3
PE		(2)
		18

Third Year First Semester

Course No.	Course Title	Units
Pol Sci 180	International Relations	3
Pol Sci Elective 3		3
Pol Sci Elective 4		3
GE Elective 4		3
Qualified Elective 3		3
Qualified Elective 4		3
		18

Third Year Second Semester

Course No.	Course Title	Units
Pol Sci 190	Introduction to Political Theory	3
Pol Sci 110	Research Methods in Political Science	3
Qualified Elective 5		3
Pol Sci Elective 5		3
Pol Sci Elective 6		3
GE Elective 5		3
		18

Third Year Midyear

Course No.	Course Title	Units
Pol Sci 195	Practicum in Political Science	3
		3

Fourth Year First Semester

Course No.	Course Title	Units
Pol Sci 199.1	Research in Political Science I	3
Free Elective		3
Pol Sci Elective 7		3
Pol Sci Elective 8		3
Pol Sci Elective 9		3
Qualified Elective 6		3
		18

Fourth Year Second Semester

Course No.	Course Title	Units
Pol Sci 199.2	Research in Political Science II	3
P.I. 100	The Life and Works of Jose Rizal	3
Pol Sci Elective 10		3
Pol Sci Elective 11		3
Qualified Elective 7		3
		15

TOTAL NUMBER OF UNITS **144 units**

BACHELOR OF ARTS IN PSYCHOLOGY

First Year First Semester

Course No.	Course Title	Units
GE Core 1		3
GE Core 2		3
GE Core 3		3
GE Core 4		3
Psych 101	General Psychology	3
GE Elective 1		3
PE 1	Foundations of Physical Fitness	(2)
NSTP		(3)
		18

First Year Second Semester

Course No.	Course Title	Units
GE Core 5		3
MGT 101	Introduction to Management	3
Psych 108	Filipino Psychology	3
Psych 110	Psychological Statistics	5
Psych 140	Behavior Analysis	3
PE		(2)
NSTP		(3)
		17

Second Year First Semester

Course No.	Course Title	Units
GE Core 6		3
Psych 115	Experimental Psychology	5
Psych 150	Theories of Personality	3
Psych Elective 1		3
Psych Elective 2		3
PE		(2)
		17

Second Year Second Semester

Course No.	Course Title	Units
GE Core 7		3
Psych 118	Field Methods in Psychology	3
Psych 130	Biological Psychology	3
Psych 162	Psychological Assessment	5
Qualified Elective 1		3
PE		(2)
		17

Third Year First Semester

Course No.	Course Title	Units
GE Elective 2		3
Psych 155	Abnormal Psychology	3
Psych 180	Social Psychology	3
Psych Elective 3		3
Psych Elective 4		3
Qualified Elective 2		3
Qualified Elective 3		3
		21

Third Year Second Semester

Course No.	Course Title	Units
GE Elective 3		3
Psych 148	Cognitive Psychology	3
Psych 170	Developmental Psychology	3
Psych 185	Industrial/Organizational Psychology	3
Psych Elective 5		3
Qualified Elective 4		3
		18

Third Year Midyear

Course No.	Course Title	Units
Psych 195*	Practicum in Psychology	3
		3

Fourth Year First Semester

Course No.	Course Title	Units
GE Elective 4		3
Psych 199.1	Research in Psychology I	3
Psych Elective 6		3
Qualified Elective 5		3
Qualified Elective 6		3
PI 100	The Life and Works of Jose Rizal	3
		18

Fourth Year Second Semester

Course No.	Course Title	Units
GE Elective 5		3
Psych 199.2	Research in Psychology II	3
Psych Elective 7		3
Psych Elective 8**		3
Qualified Elective 7		3
Qualified Elective 8		3
		18

TOTAL NUMBER OF UNITS **144 units**

* Psych 195 (Practicum in Psychology) is counted as a Psych Elective Course. Students who opt to take this course will be deloaded with one Psych Elective course (equivalent to 3 units) on the second semester of their fourth year in the program.

** Students will no longer take Psych Elective 8 if they have taken Psych 195 (Practicum in Psychology) during the midyear of their third year in the program.

BACHELOR OF ARTS (SOCIOLOGY)

First Year First Semester

Course No.	Course Title	Units
GE Core 1		3
GE Core 2		3
GE Core 3		3
Econ 11	Introductory Economics	3
Socio 101	General Sociology	3
PE 1	Foundations of Physical Fitness	(2)
NSTP		(3)
		15

First Year Second Semester

Course No.	Course Title	Units
GE Core 4		3
GE Core 5		3
GE Elective 1		3
GE Elective 2		3
Socio 114	Philippine Contemporary Social Issues	3
Socio 122	Rural Sociology	3
PE 2		(2)
NSTP		(3)
		18

Second Year First Semester

Course No.	Course Title	Units
GE Core 6		3
GE Elective 3		3
Stat 102	Statistical Methods in Research	3
Socio 126	Urban Sociology	3
Socio Elective 1		3
Qualified Elective 1		3
PE		(2)
		18

Second Year Second Semester

Course No.	Course Title	Units
GE Core 7		3
Comm 12	Technical Communication	3
Socio 102	Social Organization	3
Socio 160	Society and Population	3
Socio Elective 2		3
Qualified Elective 2		3
PE		(2)
		18

Third Year First Semester

Course No.	Course Title	Units
GE Elective 4		3
Socio 181	Quantitative Methods in Social Research	3
Socio 182	Qualitative Methods in Social Research	3
Socio 193	Sociological Theories I	3
Qualified Elective 3		3
Qualified Elective 4		3
		18

Third Year Second Semester

Course No.	Course Title	Units
GE Elective 5		3
Socio 183	Survey Methods of Social Research	3
Socio 194	Sociological Theories II	3
Socio Elective 3		3
Socio Elective 4		3
Qualified Elective 5		3
		18

Fourth Year First Semester

Course No.	Course Title	Units
Socio 199.1	Sociological Research I	3
Socio 197	Special Topics in Sociology	3
PI 100	The Life and Works of Rizal	3
Qualified Elective 6		3
Qualified Elective 7		3
		15

Fourth Year Second Semester

Course No.	Course Title	Units
Socio 199.2	Sociological Research II	3
Socio Elective 5		3
Qualified Elective 8		3
Qualified Elective 9		3
Qualified Elective 10		3
		15

TOTAL NUMBER OF UNITS **135 units**

BACHELOR OF SCIENCE IN APPLIED MATHEMATICS

First Year First Semester

Course No.	Course Title	Units
GE Core 1		3
GE Core 2		3
Econ 11	Introductory Economics	3
Math 18	Precalculus Mathematics	5
Math 153	Computer Programming I	3
NSTP 1		(3)
PE 1	Foundations of Physical Fitness	(2)
		18

First Year Second Semester

Course No.	Course Title	Units
GE Core 3		3
Math 53	Calculus I	4
Math 107	Logic and Set Theory	3
Math 154	Computer Programming II	3
Phys 71	Elementary Physics I	4
Phys 71.1	Elementary Physics Laboratory	1
NSTP 2		(3)
PE		(2)
		18

Second Year First Semester

Course No.	Course Title	Units
GE Core 4		3
Math 54	Calculus II	4
Math 110	Abstract Algebra	3
Math 114	Linear Algebra	3
Math 135	Combinatorial Mathematics	3
PE		(2)
		16

Second Year Second Semester

Course No.	Course Title	Units
GE Core 5		3
GE Elective 1		3
Math 55	Calculus III	4
Math 121	Elementary Differential Equations	3
Math 162	Theory of Interest	3
Math 173	Numerical Methods I	3
PE 3		(2)
		19

Third Year First Semester

Course No.	Course Title	Units
GE Core 6		3
GE Elective 2		3
Math Elective		3
Math 174	Numerical Methods II	3
Math 183	Linear and Integer Programming	3
Stat 110	Non-Bayesian Probability	4
		19

Third Year Second Semester

Course No.	Course Title	Units
Math Elective		3
GE Core 7		3
Comm 12	Technical Communication	3
Math 175	Mathematical Modeling	3
Stat 111	Statistical Methods and Inference	4
		16

Third Year Midyear

Course No.	Course Title	Units
Math 195	Practicum	3
		3

Fourth Year First Semester

Course No.	Course Title	Units
Elective		3
GE Elective 3		3
GE elective 4		3
Qualified Elective		3
Math 123	Advanced Calculus	3
Math 198.1	Special Problem I	1
		16

Fourth Year Second Semester

Course No.	Course Title	Units
Elective		3
GE Elective 5		3
Qualified Elective		3
Math 128	Complex Analysis I	3
Math 198.2	Special Problem II	2
PI 100	The Life and Works of Jose Rizal	3
		17

TOTAL NUMBER OF UNITS **141 units**

BACHELOR OF SCIENCE IN BIOLOGY

First Year First Semester

Course No.	Course Title	Units
GE Core 1		3
GE Core 2		3
Phys 21	Introductory Physics	4
Phys 21.1	Introductory Physics Laboratory	1
Chem 23	Inorganic Analytical Chemistry	3
Chem 23.1	Inorganic Analytical Chemistry Laboratory	2
Bio 14	Integrative Biology	5
PE 1	Foundations of Physical Fitness	(2)
NSTP		(3)
		21

First Year Second Semester

Course No.	Course Title	Units
GE Core 3		3
GE Elective 1		3
Bio 180	Statistical Methods in Biology	3
Chem 31	Elementary Organic Chemistry	3
Chem 31.1	Elementary Organic Chemistry Laboratory	2
Bot 111	Plant Morphoanatomy and Diversity	3
Bot 111.1	Plant Morphoanatomy and Diversity Laboratory	2
PE 2	Swimming	(2)
NSTP		(3)
		19

Second Year First Semester

Course No.	Course Title	Units
GE Core 4		3
GE Elective 2		3
Zoo 102	Comparative Anatomy of Vertebrates	3
Zoo 102.1	Comparative Anatomy of Vertebrates Laboratory	2
Chem 40	Elementary Biochemistry	3
Chem 40.1	Elementary Biochemistry Laboratory	2
Zoo 111	Invertebrate Zoology	3
Zoo 111.1	Invertebrate Zoology Laboratory	2
PE		(2)
		21

Second Year Second Semester

Course No.	Course Title	Units
GE Core 5		3
GE Elective 3		3
Bio 160	General Ecology	3
Bio 160.1	General Ecology Laboratory	2
Bio 152	Principles of Molecular Biology and Biotechnology	4
Bio 120	General Microbiology	3
Bio 120.1	General Microbiology Laboratory	2
PE		(2)
		20

Second Year Midyear

Course No.	Course Title	Units
Bio 162	Tropical Coasts: Biodiversity, Ecology and Conservation	4
OR		
MCB 150	Microbial Ecology	3
		3-4

Third Year First Semester

Course No.	Course Title	Units
GE Core 6		3
GE Elective 4		3
GE Core 7		3
Zoo 120	Animal Physiology	3
Zoo 120.1	Animal Physiology Laboratory	2
Bio 140	Elementary Genetics	3
Bio 140.1	Elementary Genetics Laboratory	1
Elective		3
		21

Third Year Second Semester

Course No.	Course Title	Units
GE Elective 5		3
Qualified Elective *		3
Bot 121	Elementary Plant Physiology	5
Zoo 131	Introduction to Developmental Biology of Animals	3
Zoo 131.1	Introduction to Developmental Biology of Animals Laboratory	2
Bio 189	Technical Writing in the Life Sciences	3
		19

* If Bio 195 (Practicum in Biology), must enroll in Midyear of Year 3

Fourth Year First Semester

Course No.	Course Title	Units
PI 100	The Life and Works of Jose Rizal	3
Bio 191	Biological Evolution	3
Bio 199.1	Research in Biology I	3
Qualified Elective		3
Qualified Elective		3
Elective		3
		18

Fourth Year Second Semester

Course No.	Course Title	Units
Bio 196	Seminar in Biology	1
Bio 199.2	Research in Biology II	3
Qualified Elective		5
Qualified Elective		3
Qualified Elective		3
		15

TOTAL NUMBER OF UNITS **157-158 units**

BACHELOR OF SCIENCE IN CHEMISTRY

First Year First Semester

Course No.	Course Title	Units
Chem 16	General Chemistry I	3
Chem 16.1	General Chemistry I Laboratory	2
Math 18	Introduction to Calculus	5
GE Core 1	FY FS Course 4 Title	3
GE Core 2	FY FS Course 5 Title	3
GE Core 3	FY FS Course 6 Title	3
PE 1	Foundations of Physical Fitness	(2)
NSTP		(3)
		19

First Year Second Semester

Course No.	Course Title	Units
Chem 17	General Chemistry II	3
Chem 17.1	General Chemistry II Laboratory	2
Phys 71	Elementary Physics I	4
Phys 71.1	Elementary Physics I Laboratory	1
Math 53	Calculus I	4
GE Elective 1		3
GE Elective 2		3
PE		(2)
NSTP		(3)
		20

Second Year First Semester

Course No.	Course Title	Units
Chem 28	Analytical Chemistry I	3
Chem 28.1	Analytical Chemistry I Laboratory	2
Math 54	Calculus II	4
Phys 72	Elementary Physics II	4
Phys 72.1	Elementary Physics II Laboratory	1
GE Core 4		3
GE Elective 3		3
PE		(2)
		20

Second Year Second Semester

Course No.	Course Title	Units
Chem 33	Organic Chemistry I	3
Chem 33.1	Organic Chemistry I Laboratory	2
Chem 126	Analytical Chemistry II	3
Chem 126.1	Analytical Chemistry II Laboratory	2
Math 55	Calculus III	4
Stat 102	Statistical Methods in Research	3
PE		(2)
		17

Third Year First Semester

Course No.	Course Title	Units
Chem 156	Physical Chemistry I	3
Chem 156.1	Physical Chemistry I Laboratory	2
Chem 34	Organic Chemistry II	3
Chem 34.1	Organic Chemistry II Laboratory	2
Chem 127	Analytical Chemistry III	3
Chem 127.1	Analytical Chemistry III Laboratory	1
GE Core 5		3
GE Core 6		3
		20

Third Year Second Semester

Course No.	Course Title	Units
Chem 112	Inorganic Chemistry I	3
Chem 157	Physical Chemistry II	3
Chem 157.1	Physical Chemistry II Laboratory	2
Chem 145	Biochemistry I	3
Chem 145.1	Biochemistry I Laboratory	2
Chem 35	Organic Chemistry III	3
Comm 12	Technical Communication	3
		19

Third Year Midyear

Course No.	Course Title	Units
Chem 195	Practicum	3
		3

Fourth Year First Semester

Course No.	Course Title	Units
Chem 158	Physical Chemistry III	3
Chem 200.1	Undergraduate Thesis I	2
Chem 146	Biochemistry II	3
Chem 196	Seminar	1
Elective 1 (Cluster B)	FY FS Course 5 Title	3
GE Elective 4	FY FS Course 6 Title	3
PI 100	The Life and Works of Jose Rizal	3
		18

Fourth Year Second Semester

Course No.	Course Title	Units
Chem 113	Inorganic Chemistry II	3
Chem 200.2	Undergraduate Thesis II	2
Elective 2 (Cluster A)		3
Elective 3 (Cluster A/B)		3
GE Core 7		3
GE Elective 5		3
		17

TOTAL NUMBER OF UNITS **153 units**

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

First Year First Semester

Course No.	Course Title	Units
GE Core 1		3
GE Core 2		3
CMSC 10	Introduction to Computing	1
CMSC 11	Introduction to Computer Science	3
CMSC 56	Discrete Mathematical Structure in Computer Science 1	3
Math 18	Precalculus Mathematics	5
NSTP 1		(3)
PE I	Foundation of Physical Fitness	(2)
		18

First Year Second Semester

Course No.	Course Title	Units
GE Core 3		3
GE Core 4		3
GE Core 5		3
CMSC 21	Fundamentals of Programming	3
CMSC 57	Discrete Mathematical Structure in Computer Science 2	3
Math 53	Calculus 1	4
NSTP 2		(3)
PE		(2))
		19

Second Year First Semester

Course No.	Course Title	Units
GE Core 6		3
CMSC 22	Fundamentals of Object-oriented Programming	3
CMSC 123	Data Structures	3
Math 54	Calculus II	4
Phys 71	Elementary Physics I	4
Phys 71.1	Elementary Physics Laboratory	1
PE		(2)
		18

Second Year Second Semester

Course No.	Course Title	Units
GE Core 7		3
GE Elective 1		3
CMSC 126	Web Programming	3
CMSC 127	Database System	3
CMSC 130	Logic, Design and Digital Computer Circuits	4
CMSC 142	Design and Analysis of Algorithms	3
PE		(2)
		19

Third Year First Semester

Course No.	Course Title	Units
CMSC 124	Design and Implementation of Programming Languages	3
CMSC 128	Software Engineering 1	3
CMSC 131	Introduction to Computer Organization and Machine Level Programming	3
CMSC 134	Human-Computer Interaction	3
CMSC 141	Automata and Language Theory	3
Stat 105	Introduction to Statistical Analysis	3
		18

Third Year Second Semester

Course No.	Course Title	Units
Computer Science Elective		3
Comm 12	Technical Communication	3
CMSC 125	Operating System	3
CMSC 129	Software Engineering 2	3
CMSC 132	Computer Architecture	3
Stat 106	Advanced Statistical Analysis	3
		18

Third Year Midyear

Course No.	Course Title	Units
CMSC 195	Practicum	3
		3

Fourth Year First Semester

Course No.	Course Title	Units
CMSC Elective		3
CMSC Elective		3
GE Elective 2		3
GE Elective 3		3
CMSC 137	Data Communication and Networking	3
CMSC 192	Ethical and Professional Issues in Computing	1
CMSC 198.1	Special Problem I	2
		18

Fourth Year Second Semester

Course No.	Course Title	Units
CMSC Elective		3
CMSC Elective		3
GE Elective 4		3
GE Elective 5		3
CMSC 198.2	Special Problem II	2
PI 100	The Life and Works of Jose Rizal	3
		17

TOTAL NUMBER OF UNITS **148 units**

BACHELOR OF SCIENCE IN ECONOMICS

First Year First Semester

Course No.	Course Title	Units
Econ 11	Introductory Economics	3
Math 50	Applied Calculus	4
GE Core 1		3
GE Core 2		3
GE Elective 1		3
PE 1	Foundations of Physical Fitness	(2)
NSTP		(3)
		16

First Year Second Semester

Course No.	Course Title	Units
Econ 101	Macroeconomics	3
Econ 102	Microeconomics	3
GE Core 3		3
GE Elective 2		3
GE Elective 3		3
GE Elective 4		
PE 2		(2)
NSTP		(3)
		18

Second Year First Semester

Course No.	Course Title	Units
Econ 106	Elements of Mathematical Economics	3
Econ 172	Resource and Environmental Economics	3
Stat 102	Statistical Methods in Research	3
Acctg 1	Foundation of Management Accounting	3
GE Core 4		3
Elective 1		3
PE 2/3		(2)
		18

Second Year Second Semester

Course No.	Course Title	Units
Econ 191	Development Economics	3
Econ 131	Econometrics	4
Econ 151	Public Economics	3
GE Core 5		3
Econ Elective 1		3
Elective 2		3
PE 2/3		(2)
		19

Third Year First Semester

Course No.	Course Title	Units
Econ 174	Fisheries Economics	3
Econ 121	Money and Banking	3
Comm 12	Technical Communication	3
Econ Elective 2		3
Econ Elective 3		3
GE Core 6		3
		18

Third Year Second Semester

Course No.	Course Title	Units
Econ 199	Research Methods in Economics	3
Econ 173	Aquaculture Economics	3
Econ 141	International Economics	3
Econ 198	Seminar in Economics	1
Econ Elective 4		3
Elective 3		3
GE Core 7		3
		19

Fourth Year First Semester

Course No.	Course Title	Units
Econ 199.1	Economic Research I	3
Econ 109	History of Economic Doctrines	3
Econ Elective 5		3
GE Elective 5		3
Elective 4		3
Elective 5		3
		18

Fourth Year Second Semester

Course No.	Course Title	Units
Econ 199.2	Economics Research II	3
Econ 115	Philippine Economic History	3
PI 100	The Life and Works of Jose Rizal	3
Econ Elective 6		3
Elective 6		3
		15

TOTAL NUMBER OF UNITS **141 units**

BACHELOR OF SCIENCE IN PUBLIC HEALTH

First Year First Semester

Course No.	Course Title	Units
GE Core 1		3
GE Core 2		3
GE Core 3		3
Bio 14	Integrative Biology	5
Chem 23	Inorganic Analytical Chemistry	3
Chem 23.1	Inorganic Chemistry Laboratory	2
PE 1	Foundations of Physical Fitness	(2)
NSTP		(3)
		19

First Year Second Semester

Course No.	Course Title	Units
GE Core 4		3
GE Elective 1		3
Chem 31	Elementary Organic Chemistry	3
Chem 31.1	Elementary Organic Chemistry Laboratory	2
Zoo 102	Comparative Anatomy of Vertebrates	3
Zoo 102.1	Comparative Anatomy of Vertebrates Laboratory	2
PH 101	Health Challenges in Island Contexts	3
PE		(2)
NSTP		(3)
		19

Second Year First Semester

Course No.	Course Title	Units
GE Core 5		3
GE Elective 2		3
PH 160	Global Health and Development	3
PH 151	Principles of Microbiology	4
PH 161	Human Biochemistry	4
Qualified Elective 1		3
PE 2		(2)
		20

Second Year Second Semester

Course No.	Course Title	Units
GE Core 6		3
GE Elective 3		3
GE Elective 4		3
PH 120	Human Anatomy and Physiology	5
PH 162	Nutrition	3
Qualified Elective 2		3
PE		(2)
		20

Third Year First Semester

Course No.	Course Title	Units
GE Elective 5		3
PH 141	Biostatistics for Public Health	4
PH 122	General Pathology	5
PH 152	Medical and Public Health Microbiology	5
PH 166	Clinical Chemistry	4
		21

Third Year Second Semester

Course No.	Course Title	Units
GE Core 7		3
PH 180	Epidemiology	4
PH 173	Medical Parasitology and Entomology	5
PH 175	Environmental and Occupational Health	3
Qualified Elective 3		3
Qualified Elective 4		1-3
		19-21

Third Year Midyear

Course No.	Course Title	Units
Qualified Elective 5		3
Qualified Elective 6		3
		3

Fourth Year First Semester

Course No.	Course Title	Units
Bio 189	Technical Writing in the Life Sciences	3
Qualified Elective 7		2-3
PH 187	Public Health Education and Promotion	3
PH 188	Public Health Policy and Administration	3
PI 100	The Life and Works of Jose Rizal	3
Language Elective		3
		17-18

Fourth Year Second Semester

Course No.	Course Title	Units
PH 195	Public Health Practice	5
PH 196	Seminar	1
PH 199	Special Studies and Research	3
		9

TOTAL NUMBER OF UNITS **150-153**

BACHELOR OF SCIENCE IN STATISTICS

First Year First Semester

Course No.	Course Title	Units
GE Core 1		3
GE Core 2		3
Math 18	Precalculus Mathematics	5
Math 153	Computer Programming I	3
Stat 104	Descriptive Statistics	3
NSTP		(3)
PE 1	Foundations of Physical Fitness	(2)
		17

First Year Second Semester

Course No.	Course Title	Units
Free Elective		3
GE Core 3		3
GE Elective 1		3
Math 53	Calculus 1	4
Stat 117	Mathematics for Statistics	3
NSTP		(3)
PE		(2)
		16

Second Year First Semester

Course No.	Course Title	Units
Free Elective		3
GE Core 4		3
GE Elective 2		3
Math 54	Calculus II	4
Stat 121	Probability Theory I	3
PE		(2)
		16

Second Year Second Semester

Course No.	Course Title	Units
GE Core 5		3
GE Core 6		3
GE Elective 3		3
Math 55	Calculus III	4
Stat 122	Probability Theory II	3
Stat 138	Use of Statistical Software Packages	3
PE		(2)
		19

Third Year First Semester

Course No.	Course Title	Units
CS/Math Elective		3
GE Elective 4		3
GE Elective 5		3
Comm 12	Technical Communication	3
Math 114	Linear Algebra	3
Stat 123	Parametric Statistical Inference	4
		19

Third Year Second Semester

Course No.	Course Title	Units
Statistics Elective		3
GE Core 7		3
Stat 129	Regression and Correlation Analysis	3
Stat 133	Introduction to Exploratory Data Analysis	3
Stat 134	Introduction to Bayesian Statistical Inference	3
Stat 140	Introduction to Sample Survey	3
		18

Fourth Year First Semester

Course No.	Course Title	Units
Statistics Elective		3
Statistics Elective		3
Stat 130	Introduction to Experimental Designs	3
Stat 132	Nonparametric Statistical Inference	3
Stat 141	Multivariate Theory	3
Stat 145	Introduction to Time Series Analysis and Forecasting	3
		18

Fourth Year Second Semester

Course No.	Course Title	Units
CS/Math Elective		3
Statistical Elective		3
PI 100	The Life and Works of Jose Rizal	3
Stat 142	Applied Multivariate Analysis	3
Stat 149	Introduction to Categorical Data	3
Stat 150	Survey Operations	3
		18

TOTAL NUMBER OF UNITS **141 units**

COLLEGE OF FISHERIES AND OCEAN SCIENCES

In 1946, the Commonwealth Government of the Philippines established the Philippine School of Fisheries by virtue of Commonwealth Act No. 718 (e). The Philippine School of Fisheries, later renamed Philippine Institute of Fisheries Technology (PIFT), was placed under the supervision of the Bureau of Fisheries, Department of Agriculture and Natural Resources (DANR).

In January 1957, under the Reorganization Act (R.A. No. 997) and upon approval of then President Ramon Magsaysay, supervision of PIFT was handed from the DANR to the University of the Philippines. Upon the recommendation of the U.P. President Vicente G. Sinco, the Board of Regents approved the reorganization of the PIFT into the College of Fisheries on 10 April 1958. In the latter part of 1962, the college was transferred to its new home at Albert Hall in the U.P. Diliman campus from its then location in Port Area, Manila.

During the academic year 1975-76, the College of Fisheries and the U.P. College Iloilo began to offer fisheries curricular programs in Iloilo. Four years later on 31 May 1979, the Board of Regents approved the establishment of the U.P. in the Visayas (UPV) with the College of Fisheries as its nucleus and with its campus in Miagao, Iloilo. In June of the same year, the Board also formalized the fisheries academic offerings in Iloilo as the College of Fisheries Program in Iloilo.

The BSF program of UPV is one of the earliest fisheries academic programs in the country. The original BSF program of the College of Fisheries of the University of the Philippines Diliman had 4 major disciplines – Marine Fisheries, Inland Fisheries, Fish Processing Technology, and Fisheries Education. In January 1978, the 4th major became Fisheries Business Management.

Executive Order No. 628, signed by President Ferdinand E. Marcos on 01 October 1980, officially created the UPV as an autonomous unit of the U.P. System and it gave way to the eventual transfer of the College to Miagao. The Fisheries Education Loan Project, sponsored by the World Bank, funded the development of the College in its new site. The College was finally transferred to its present home in the UPV campus in Miagao in May 1988. The Board of Regents approved the renaming of the College into the College of Fisheries and Ocean Sciences (CFOS) during its 1144th meeting on August 31, 2000.

CFOS abolished the BSF major disciplines in 2004 and adopted a more integrated curriculum that provides knowledge and competencies in all aspects of fisheries. The BSF program is now jointly offered by the Institutes of Aquaculture (IA), Fish Processing and Technology (IFPT), Fisheries Policy and Development Studies (IFPDS), and Marine Fisheries and Oceanology (IMFO). The most recent revision of the BSF program curriculum was approved by the UPV University Council (UC) on 20 October 2017, which was consequently approved for implementation on 28 September 2020.

The BS Fisheries (BSF) program of the College of Fisheries and Ocean Sciences is also the first degree program of UP Visayas that received the prestigious ASEAN University Network Quality Assurance (AUN-QA) Certification. The CFOS received the result of the AUN-QA accreditation of the BSF program on 12 January 2023. The report stated that the BSF has fulfilled the requirements of the AUN-QA criterion and has successfully passed the online assessment rated at the program level.

VISION

A world-class institution in the fields of fisheries and aquatic sciences

MISSION

- Provide quality education in the field of fisheries and aquatic sciences;
- Conduct cutting edge and relevant researches in the fields of fisheries and aquatic sciences;
- Lead in the formulation and implementation of effective extension programs; and
- Advocate for policy directions in the utilization and management of fisheries and aquatic resources

ACADEMIC PROGRAMS

Undergraduate Program

Bachelor of Science in Fisheries

BACHELOR OF SCIENCE IN FISHERIES

General Education Elective Course

Aquatic Science (Aqua Sci)

1 **People and the Aquatic World**
The dynamic interaction between people and the aquatic environments
3 units (3 hrs lec)
Prerequisite: None

Undergraduate Courses

Fisheries (Fish)

100 **Introduction to Fisheries Science**
Foundations of marine fisheries, aquaculture, fish processing technology and fisheries management
3 units (3 hrs lec)
Prerequisite: None

101 **Aquatic Fauna and Flora**
Biology of aquatic organisms, their distribution and evolution
4 units (2 hrs lec, 6 hrs lab)
Prerequisite: Bio 14

102 **Ichthyology**
Morphology, anatomy, systematics and distribution of fishes, their interrelationships with other aquatic biota
4 units (2 hrs lec, 6 hrs lab)
Prerequisite: Bio 14

104 **Introduction to Fisheries Entrepreneurship**
The study of the theory and practice of Entrepreneurship, including the strategies and application of the various management tasks and concerns in planning and managing a fisheries business.
3 units (3 hrs lec)
Prerequisite: None

106 **Aquatic Ecology**
Fundamentals of ecology and the study of different aquatic ecosystems.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Chem 23

107 **Aquatic Invertebrates**
Morphology, anatomy, and systematics of aquatic invertebrates their biology and interrelationships with other aquatic biota.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Fish 101

Fisheries (Fish)

109 Physiology of Aquatic Organisms
Physiology and life history of fishes and aquatic invertebrates.
3units (2 hrs lec, 3 hrs lab)
Prerequisite: Fish 102

110 Fisheries Organic Chemistry
Principles of organic chemistry and their application to fisheries.
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: Chem 23

111 Phycology
Morphology, physiology, systematics and distribution of aquatic plants, their role and interrelationships with other aquatic organisms.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: None

114 Inland Fishing Gears.
Materials, construction and operation of gears used in inland Fisheries.
2 units (1 hr. lec, 3 hrs. lab)
Prerequisites: Math 14, Fish 101

115 Nutrition of Aquatic Animals
Principles of nutrition; nutrient requirements; ration formulation and practical feeding of selected finfishes and shellfish.
3 units (1 hr lec, 6 hrs lab)
Prerequisites: Fish 120, Fish 109

116 Hatchery Management
Application of the principles of reproductive and larvae physiology of aquatic organisms in the design, construction and management of hatchery facilities.
3 units (1 hr lec, 6 hrs lab)
Prerequisites: Fish 109, Fish 125

117 Health Management in Aquaculture
Biology of Pathogens and study of other disease causative agents of aquaculture organisms and their prevention and control.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Fish 102

118 Fisheries Laws, Policies and Institutions
National and international laws and treaties, policies and institutions related to the exploitation, protection and conservation of fishery and maritime resources.
3 units (3 hrs lec)
Prerequisite: None

119 Fisheries Engineering
Applications of engineering principles to fisheries.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Phys 21, Fish 125

120 Fisheries Biochemistry
Chemistry of carbohydrates, lipids, proteins and enzymes with emphasis on fish and fishery products.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Fish 110

124 Fisheries Extension
Introduction to extension, its philosophy and role in fisheries including approaches, strategies and methods.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: None

125 Aquaculture Technologies
Principles and methods of aquaculture and application of other sciences (physical, chemical, biotechnological, medical) to cultivation of aquatic organisms; recent development in aquaculture.
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: None

Fisheries (Fish)

126 Fundamentals of Aquaculture.
Principles, methods and practices of aquaculture.
3 units (3 hrs lec)
Prerequisite: None

127 Fundamentals of Capture Fisheries.
Introduction to principles, methods and practices in capture fisheries.
3 units (3 hrs lec)
Prerequisite: None

128 Fundamentals of Post Harvest Fisheries.
Methods of fish preservation/processing, quality control, packaging and marketing of fish and fishery products; Fish post harvest waste management.
3 units (3 hrs lec)
Prerequisite: None

129 Aquatic Resources and Ecology.
Fundamentals of ecology and management of exploited aquatic resources and ecosystem.
3 units (3 hrs lec)
Prerequisite: None

131 Aquatic Ecosystems Health and Management
Assessment and monitoring of aquatic ecosystems health through the use of ecological indicators and ecological risk analysis to properly manage and sustain aquatic ecosystems.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Fish 110

133 Aquatic Ecosystems.
The study of different aquatic environments, and their chemical, physical, geological and biological components.
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: Chem 23

134 GIS and Remote Sensing for Fisheries
Geographic information systems and remote sensing applied to fisheries and ocean sciences
3 units (3 hrs lec)
Prerequisite: None

137 Fish Capture Technology
Overview of Philippine capture fisheries, classification of fishing gears' materials for fishing gear; development of fishing gear technology.
3 units (2 hrs lec, 3 hrs lab/ field exposure)
Prerequisite: Fish 101, Fish 102, and Math 50

140 Fish Stock Assessment
Methods in assessing the size and status of fish stocks.
3 units (3 hrs lec)
Prerequisite: Math 50, Fish 102, and Fish 137

147 Fish Genetics
Principles of cellular and molecular genetics of fish and other aquatic animals and plants to include breeding and other genetic applications.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Fish 102, Fish 120

148 Fisheries Post Harvest Technologies.
Handling, cold storage, curing and canning of fish and fishery products.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: None

Fisheries (Fish)

150 Fisheries Management
Key concepts in fisheries and ocean resource management including studies of coastal communities, governance, fish stock assessment methods and its application in fisheries management.
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: Fish 106

151 Fishery Product Development and Value Addition
Developing and value adding in fish and fishery products, including marketing, packaging and shell-life determination
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Fish 156

154 Fishery Microbiology
Bacteria, yeast, molds and parasites associated with fish, their characteristics and importance to fisheries
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Fish 101

155 Chemical Evaluation of Water and Aquatic Products
Chemical composition and standard methods of analysis of the aquatic environment and fishery products
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Fish 156, Chem 23, and Fish 110

156 Fisheries Post Harvest Technologies
Handling, cold storage, curing and canning of fish and fishery products.
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: Fish 154

159 Fish Plant Management
Total quality management application to fish processing plants
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Fish 156

160 Fish Handling and Preservation of Fish
Handling of live fish and low temperature preservation of fish and fishery products
3 units (2 hrs lec, 3 hrs lab)
Prerequisites: Fish 156, Fish 154

167 Actual Fishing
Practical application of the principles and methods of fishing: issues related to fishing; measures to mitigate the impacts of fishing gears.
3 units (1 hr lec, 6 hrs lab)
Prerequisite: Fish 137

169 Fisheries Biotechnology
Fundamentals of biotechnology and its application in the field of fisheries.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Fish 147

171 Food Engineering Application in Fisheries
Principles of food engineering relevant to fish processing operations and their applications
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Fish 156

175 Coastal Resource Management
Introduction to the coastal environment, its resources and uses; resource issues resulting primarily from human activities; the various role players in resource management; the interdisciplinary and multi-sectoral resource management strategies at the local, national and global scale.
3 units (3 hrs lec)
Prerequisite: Fish 106

Fisheries (Fish)

176 Community-Based Coastal Resource Management
Introduction to management of coastal resources by the community members and other primary stakeholders with emphasis on community organization process.
3 units (3 hrs lec)
Prerequisite: Fish 106

177 Ocean Resource Utilization and Conservation
Introduction to ocean resources, concepts in its utilization and conservation
3 units (3 hrs lec)
Prerequisite: Fish 106, Fish 137

180 General Oceanography
Relationships of the oceans and the atmosphere, and their combined influence on chemical and biological processes.
3 units (3 units lec)
Prerequisite: Phys 21, Chem 11

181 Oceanography and Limnology
The study of the geology, chemistry and physics of different aquatic environments and their influence on life and other environmental processes.
3 units (3 hrs lec)
Prerequisite: Chem 23
Co-requisite: Math 50

182 Field Oceanography
Oceanographic research methods, instrumentation, and analysis.
2 units (6 hrs lab)
Prerequisite: Fish 181

185 Navigation and Seamanship
Basic skills in seamanship and navigation; safety at sea for fisheries applications.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Math 50, Fish 137

191 Philippine Fishing Grounds
General survey of Philippine fishing grounds, including the status of fisheries resources and their utilization
2 units (2 hrs lec)
Prerequisite: None

195 Practicum
3 units
Prerequisite: Senior Standing

196 Methods of Research
Introduction to research design, proposal and report writing and analyses of data.
3 units (3 hrs lec)
Prerequisite: Junior Standing

197 Special Topics in Fisheries
Areas/aspects of fisheries of special interest to undergraduate students.
3 units (3 hrs lec)
Prerequisite: Senior Standing

198 Special Problem
3 units
Prerequisite: Senior Standing

200* Undergraduate Thesis
4 units
Prerequisite: Senior Standing

***** Students can take Fish 200 once in the first semester (4 units) or twice (2 units each). This can also be taken as early as the midyear of the third year.

BACHELOR OF SCIENCE IN FISHERIES

First Year First Semester

Course No.	Course Title	Units
GE Core 1		3
GE Core 2		3
Fish 100	Introduction to Fisheries Science	3
Phys 21	Introductory Physics	4
Bio 14	Integrative Biology	5
PE 1	Foundations of Physical Fitness	(2)
NSTP	National Service Training Program	(3)
		18

First Year Second Semester

Course No.	Course Title	Units
GE Core 3		3
GE Elective 1		3
Chem 23	Inorganic Analytical Chemistry	3
Chem 23.1	Inorganic Analytical Chemistry Laboratory	2
Fish 101	Aquatic Fauna and Flora	4
Fish 102	Ichthyology	4
PE 2	Swimming	(2)
NSTP		(3)
		19

Second Year First Semester

Course No.	Course Title	Units
GE Core 4		3
GE Elective 2		3
Fish 106	Aquatic Ecology	3
Fish 154	Fisheries Microbiology	3
Fish 181	Oceanography and Limnology	3
Math 50	Applied Calculus	4
PE		(2)
		19

Second Year Second Semester

Course No.	Course Title	Units
GE Elective 3		3
Fish 125	Aquaculture Technologies	5
Fish 137	Fish Capture Technology	3
Fish 156	Fisheries Post Harvest Technologies	5
Fish 175	Coastal Resource Management	3
PE		(2)
		19

Third Year First Semester

Course No.	Course Title	Units
GE Core 5		3
GE Elective 4		3
Fish 110	Fisheries Organic Chemistry	5
Fish 119	Fisheries Engineering	3
Elective 1		3
Elective 2		3
		20

Third Year Second Semester

Course No.	Course Title	Units
GE Core 6		3
GE Elective 5		3
Stat 102	Statistical Methods in Research	3
Fish 117	Health Management in Aquaculture	3
Fish 120	Fisheries Biochemistry	3
Fish 196	Methods of Research	3
Elective 3		3
		21

Third Year Midyear

Course No.	Course Title	Units
Fish 195	Practicum	3
		3

Fourth Year First Semester

Course No.	Course Title	Units
GE Core 7		3
Fish 104	Introduction to Fisheries Entrepreneurship	3
Fish 109	Physiology of Aquatic Organism	3
Fish 147	Fish Genetics	3
Elective 4		3
Fish 200*	Undergraduate Thesis	2-4
		17-19

Fourth Year Second Semester

Course No.	Course Title	Units
PI 100	The Life and Works of Jose Rizal	3
Fish 118	Fisheries Laws, Policies and Institutions	3
Fish 124	Fisheries Extension	3
Fish 150	Fisheries Management	5
Elective 5		2-4
Fish 200*	Undergraduate Thesis	2
		16-20

TOTAL NUMBER OF UNITS **154-156 units**

* Students can take Fish 200 once in the first semester (4 units) or twice (2 units each). This can also be taken as early as the midyear of the third year.

COLLEGE OF MANAGEMENT

In response to a profound need for quality management education in Visayas, the Board of Regents of the University of the Philippines System established the School of Development Management (SDM) in the University of the Philippines in the Visayas (UPV) on 22 December 1981. SDM absorbed and expanded the programs of the former Division of Management of the UPV College of Arts and Sciences. After ten successful years of operation, the SDM was elevated into a college and was renamed as the College of Management by the Board of Regents during its 1044th meeting on 22 October 1991.

VISION

A globally competitive center of education in management and governance, research, and public service.

MISSION

To provide quality education, research and public service programs in the fields of business management, public administration and governance, and urban and regional planning in pursuit of UPV's thrusts towards sustainable development.

CORE VALUES

- Nationalism
- Integrity
- Service
- Excellence

Academic Programs

Undergraduate Programs

1. Bachelor of Science in Accountancy
2. Bachelor of Science in Business Administration (Marketing)
3. Bachelor of Science in Management

ADMISSION AND RETENTION POLICIES

Bachelor of Science in Accountancy

Admission Policy

Students from other UP units may be admitted, provided that they have completed at least 30 academic units based on the rules of the University and they have obtained a GWA of 1.75 or better.

Students from other universities and colleges may be admitted, provided that they have met all requirements for admission under the University policy and College general guidelines for transferees. They must not have incurred a grade of 5.0 in any subject taken.

Retention Policy

To be retained in the program, a student must maintain a GWA of 2.5 or better in all subjects taken in the UP System and must have a grade of 2.0 or better in BA 99.1, BA 99.2, BA 114.1, and BA 114.2. [Approved by the University Council, 20 July 2002]

DEPARMENT OF ACCOUNTING

Undergraduate Courses

Accounting (Acctg)

1 **Fundamentals of Management Accounting**
Accounting concepts and principles applied to service, merchandising, and manufacturing operations; partnerships and corporations; the analysis, interpretation and uses of accounting data for management.
3 units (3 hrs lec)
Prerequisite: Sophomore standing

Business Administration (BA)

99.1 **Fundamental Accounting Theory and Practice I**
Fundamental accounting theory and terminology with reference to accounting practice and management's use of accounting data.
3 units (3 hrs lec)
Prerequisite: None

99.2 **Fundamental Accounting Theory and Practice II**
Continuation of Fundamentals of Accounting Theory & Practice I
3 units (3 hrs lec)
Prerequisite: BA 99.1

101 **Introduction to Business Management**
The concepts and principles of behavior in business organizations.
3 units (3 hrs lec)
Prerequisite: None

104 **Organizational Behavior**
Principles and techniques of business organization and management. An introduction to case problem solving.
3 units (3 hrs lec)
Prerequisite: BA 101

114.1 **Accounting Theory and Practice I**
Accounting theory and the problems in the application of generally accepted accounting principles concerning asset accounts and the income statement.
6 units (6 hrs lec)
Prerequisite: BA 99.2

114.2 **Accounting Theory and Practice II**
Continuation of Fundamental Accounting Theory and Practice I, (to include liabilities, owner's equity and special topics.
6 units (6 hrs lec)
Prerequisite: BA 114.1

115 **Management Accounting**
Uses of accounting information for managerial planning and control.
3 units (3 hrs lec)
Prerequisite: BA 99.2

116 **Cost Accounting**
Principles of cost determination and control, job-order cost, process cost, standard cost system, budgetary control, analysis and uses of cost data.
6 units (6 hrs lec)
Prerequisite: BA 114.2

117 **Managerial Cost Accounting and Control**
Specialized topics in cost accounting for planning and control.
3 units (3 hrs lec)
Prerequisite: BA 116

118.1 **Advanced Accounting I**
Application of advanced accounting concepts to specific business activities such as partnerships, corporate liquidation, reorganization for financially distressed corporations, home office and branch operations, sales agency accounting and special sales transactions.
6 units (6 hrs lec)
Prerequisite: BA 114.2

Business Administration (BA)

118.2 Advanced Accounting II
Application of advances accounting concepts to specific business activities such as combined corporate entities and consolidations and other special topics such as non-profit organizations and foreign currency transactions.
6 units (6 hrs lec)
Prerequisite: BA 118.1

119 Special Topics in Accounting Theory
A historical study of accounting theory and a critical evaluation of recent developments and trends in accounting thought.
3 units (3 hrs lec)
Prerequisite: Graduating

120.1 Audit Theory
Theories involved in the independent examination of accounts, standards and procedures; audit programs; preparation of audit reports and internal audit. This course introduces the basic concepts underlying audit and other assurance services.
3 units (3 hrs lec)
Prerequisite: BA 116 and BA 118.2

120.2 Audit Practice
Application of theories involved in the independent examination of accounts, standards, and procedures; audit programs and working papers; preparation of audit reports and internal audit.
6 units (6 hrs lec)
Prerequisite: BA 118.2, BA 120.1, and Senior Standing

122 Government Accounting and Auditing: Theory and Practice
This course will apply government accounting and auditing theory to various government subdivisions like the barangay, the local and the national government and their specific activities.
3 units (3 hrs lec)
Prerequisite: BA 114.2

125 Management Information Systems
Information dimensions of decision-making process, identification, evaluation, modification and integration of information flows into management information systems.
3 units (3 hrs lec)
Prerequisite: Senior Standing (106 units completed)

127 Tax Accounting I
The application of the income tax law and regulations in the determination of the tax liabilities of individual, estates and trusts, partnerships and corporations.
3 units (3 hrs lec)
Prerequisite: BA 114.2

128 Tax Accounting II
The application of laws and regulations governing estate inheritance and gift, business, and miscellaneous taxes in the determination of tax liabilities.
3 units (3 hrs lec)
Prerequisite: BA 116 and BA 127

129 Management Services
The management of consulting firm; preparation of feasibility studies; marketing, technical and financial aspects; project evaluation.
3 units (3 hrs lec)
Prerequisite: BA 117, BA 142, BA 187, and Senior Standing

141 Business Finance I
Introduction to the principles governing financial enterprises with emphasis on short-term planning and management of working capital.
3 units (3 hrs lec)
Prerequisite: None for BSA; BA 115 for BSBA (Marketing)

145 Investment Management
Investment principles and practices, with special emphasis on security analysis and portfolio management in the Philippine context.
3 units (3 hrs lec)
Prerequisite: None

Business Administration (BA)

161 Law on Business Transactions
General nature of law**,** obligations, contracts, natural obligations and all other related laws.
3 units (3 hrs lec)
Prerequisite: Junior Standing

162 Law on Business Associations
Partnerships, corporations, cooperatives, Securities Regulation Code, Corporate Rehabilitation, Laws on insolvency, civil code provision on the order of preference and concurrence of credit.
3 units (3 hrs lec)
Prerequisite: BA 161

164 Negotiable Instruments and Banking Related Laws
Negotiable Instruments; All pertinent banking and related special laws.
3 units (3 hrs lec)
Prerequisite: BA 161

167 Sales and Bailments and other Special Laws
Study of laws governing sales, agency, loan, deposit, guaranty, pledge, real and chattel mortgages, their nature, concepts, the specific rights and obligations of the parties, and the means of extinguishing these contracts.
3 units (3 hrs lec)
Prerequisite: BA 161

170 Introduction to Marketing Management
Marketing principles, concepts, process, and tools that guide analysis of the marketing environment, market segmentation, target market identification, product positioning, crafting of customer driven marketing strategy and building profitable customer relationships.
3 units (3 hrs lec)
Prerequisite: BA 101 for BSA; Junior Standing for BSBA (Marketing)

171 Advanced Marketing Management
Developing and managing marketing strategies and programs based on analyses of marketing situations. Emphasis will be placed on product differentiation and positioning, the marketing mix and marketing control measures.
3 units (3 hrs lec)
Prerequisite: BA 170 or Mgt 170

172 Integrated Marketing Communications
The contemporary elements of the marketing communications mix covering advertising, sales promotion, public-oriented promotions, public relations, exhibitions and trade shows.
6 units (6 hrs lec)
Prerequisite: BA 171

173 Supply Chain Management
Fundamentals of logistics within supply chain structure.
3 units (3 hrs lec)
Prerequisites: BA 170 and Mktg 171

174 Marketing Research
A survey of the techniques used in marketing research. Selected problems in the analysis of sales records, sales forecasting, estimating sales potentials, sampling consumer demand, determining the factors which influence demand for specific goods.
3 units (3 hrs lec)
Prerequisite: BA 170 and BA 171

175 International Marketing
Problems and policies with emphasis analysis and export feasibilities, foreign trade promotion, export-import procedures and requirements, all considered from the Philippine perspective.
3 units (3 hrs lec)
Prerequisite: Senior Standing

176 Sales Management
Problems and policies in the management of the sales force of both manufacturing and commercial enterprises.
3 units (3 hrs lec)
Prerequisites: BA 170 and Mktg 171

Business Administration (BA)

178 Seminar in Marketing Management
Emerging concepts, theories, and tools in marketing and marketing management as well as developments in the marketing environment.
3 units (3 hrs lec)
Prerequisite: Senior Standing

179 Law and Marketing
Laws governing marketing operations and transactions applicable in the local and export markets.
3 units (3 hrs lec)
Prerequisite: Senior Standing

181 Management Science
The use of management science/operations research (MS/OS) in analysis of business problems concerning production, marketing, personnel and finance.
3 units (3 hrs lec)
Prerequisites: Math 50 and Stat 102

183.1 Introduction to Information Technology
Basic computer concepts and principles; historical evolution of hardware and software; knowledge and skill in word processing, spreadsheet, presentation software and internet tools.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: None

183.2 Basic Programming and Database Management
Program logic, flowcharting and basic programming; preparation and processing of database and building different types of databases that are used in business.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: BA 183.1

184.1 Computer-based Accounting Systems
Design and installation of manual and computerized accounting system units and computerized bookkeeping.
3 units (2 hrs lec, 3 hrs lab)
Prerequisites: BA 183.2, BA 114.2, and BA 117

184.2 Audit of Computer-based Accounting System
The use of computers on the system of internal control and on the auditor's study and evaluation of internal control.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: BA 184.1

187 Operations Management
Principles, procedures and techniques in the design, operation, and improvement of production systems.
3 units (3 hrs lec)
Prerequisites: BA 181and BA 101

190 Strategic Management
Integration of the different management functional areas discussed and taken up from the point of view of general and top management with focus on formulation, execution, control, and review of business strategies.
3 units (3 hrs lec)
Prerequisite: Senior Standing

195.1 Public Accounting Practice I
Integrated audit.
3 units (3 hrs lec)
Prerequisites: BA 120.1 and BA 128

195.2 Public Accounting Practice II
Internship to provide students with working knowledge in the practice of accountancy.
3 units (3 hrs lec)
Prerequisite: BA 195.1

196 Seminar in Accounting
Discussion of recent developments in the practice of accountancy.
3 units (3 hrs lec)
Prerequisite: Senior Standing

199 Business Research
3 to 6 units
Prerequisite: Graduating

Business Administration (BA)

199.1 Business Research I
Methods and applications of social science research in the field of business and management with emphasis in the preparation of a research proposal that addresses knowledge gaps in business and management.
3 units (3 hrs lec)
Prerequisites: Comm 11 and Stat 102

199.2 Business Research II
Conduct of research in the field of business and management including data collection, analysis, interpretation, and the write-up of the research report.
3 units (3 hrs lec)
Prerequisite: BA 199.1

Marketing (Mktg)

171 Consumer Behavior
Principles, concepts, and models for a comprehensive understanding of the consumer behavior.
3 units (3 hrs lec)
Prerequisite: Junior Standing

172.1 Integrated Marketing Communications I
Principles, concepts, and tools in Integrated Marketing Communications (IMC) with emphasis on traditional marketing and use of traditional media.
3 units (3 hrs lec)
Prerequisites: BA 170 and Mktg 171

172.2 Integrated Marketing Communications II
Principles, concepts and tools in Integrated Marketing Communications (IMC) with emphasis on non-traditional marketing and use of non-traditional media.
3 units (3 hrs lec)
Prerequisite: Mktg 172.1

176 Brand Management
Concepts and techniques to build, measure and manage and sustain brand equity.
3 units (3 hrs lec)
Prerequisites: BA 170 and Mktg 171

177 Customer Relationship Management
Combination of organizational strategy, information systems, business processes and technology on providing better customer service and establishing strong, loyal relationships with customers and prospects.
3 units (3 hrs lec)
Prerequisite: Senior Standing

180 Social Entrepreneurship
Opportunity recognition, business models, function, traits and behaviors of social entrepreneurs, human resource management, marketing, performance measurement, growth, and scaling to finance in social enterprises, as well as the impact of social entrepreneurship in general.
3 units (3 hrs lec)
Prerequisite: None

185 Fundamentals of Business Analytics
Data management techniques, tools and methods designed to investigate business performance, industry and market trends.
3 units (2 hrs lec, 3 hrs lab)
Prerequisites: BA 183.1, BA 183.2, BA 101, and BA 170

188 Retail and Merchandizing
Principles, concepts, and tools that guide organizations in sales, retail, and merchandise management.
3 units (3 hrs lec)
Prerequisites: BA 170 and Mktg 171

189 Business Statistics
Application of statistical concepts and tools in business setting, specifically in business decision situations.
3 units (3 hrs lec)
Prerequisites: Math 50, Stat 102, BA 183.2, BA 101, and BA 170

Marketing (Mktg)

195 **Marketing Practicum**
Field work component for senior standing students pursuing a BS Business Administration (Marketing) degree.
3 units (3 hrs lec)
Prerequisite: Junior Standing

199.1 **Marketing Research I**
Principles and techniques of marketing research with emphasis on the role of research in decision-making and planning for a research project.
3 units (3 hrs lec)
Prerequisite: BA 170, Mktg 171, and Stat 102

199.2 **Marketing Research II**
Principles and techniques of marketing research with emphasis on the implementation of the marketing research proposal-from data collection, report generation and presentation.
3 units (3 hrs lec)
Prerequisite: Mktg 199.1

DEPARMENT OF MANAGEMENT

Undergraduate Courses

Management (Mgt)

101 **Introduction to Management**
Study of the theories, concepts and principles in organization and management.
3 units (3 hrs lec)
Prerequisite: None

102 **Environment of Management**
Interrelationships between and among the micro and macro environment of the managers of the firm, its management, and that of the business enterprises in the Philippines.
3 units (3 hrs lec)
Prerequisite: Mgt 101

104 **Organizational Behavior**
Theories and concepts on human behavior in organizations; the dynamics of individual and intergroup relationships in organizations.
3 units (3 hrs lec)
Prerequisite: None

115 **Management Accounting**
Uses of accounting information for managerial planning and control.
3 units (3 hrs lec)
Prerequisites: BA 99.2 and Econ 11

121 **Human Resource Management**
Factors and objectives which shape personnel policies of employers and practices which implement these policies.
3 units (3 hrs lec)
Prerequisite: Mgt 101

141 **Financial Management I**
Financial management principles for short and long range planning.
3 units (3 hrs lec)
Prerequisite: Mgt 115

142 **Financial Management II**
Long-range planning and management of the long-term financial position of a business organization; capitalization and liquidation.
3 units (3 hrs lec)
Prerequisite: Mgt 141

Management (Mgt)

147 **Fundamentals of Taxation**
General principles and characteristics of taxation
3 units (3 hrs lec)
Prerequisite: BA 99.2

148 **Special Topics in Finance**
3 units (3 hrs lec)
Prerequisite: Mgt 141 or COI

160 **Law and Business**
Basic concepts of governmental promotion and regulation of business through law and how they affect business decisions.
3 units (3 hrs lec)
Prerequisite: Junior Standing

161 **Law on Business Transactions**
General nature of law**,** obligations, contracts, natural obligations, and all other related laws.
3 units (3 hrs lec)
Prerequisite: None

162 **Law on Business Organizations and Labor**
Single proprietorships, partnerships, corporations, cooperatives, Securities Act, laws on insolvency, civil code provision on the order of preference and concurrence or credits; labor code.
3 units (3 hrs lec)
Prerequisite: Mgt 161

168 **Special Topics in Business Law**
3 units (3 hrs lec)
Prerequisite: Mgt 160 or BA 160 or consent

170 **Introduction to Marketing Management**
Marketing institutions; marketing policies and methods for products and services in a variety of manufacturing and service industries.
3 units (3 hrs lec)
Prerequisite: Junior Standing

173 **Marketing Management**
Marketing management from the point of view of the firm, covers other tools available or used by the marketing units of the firm: promotion, advertising, channels of distribution, marketing research, marketing planning and control and the marketing organization.
3 units (3 hrs lec)
Prerequisite: Mgt 170

174 **Marketing Research**
A survey of the techniques used in marketing research. Selected problems in the analysis of sales records, sales forecasting, estimating sales potentials, sampling consumer demand, determining the factors which influence demand for specific goods.
3 units (3 hrs lec)
Prerequisite: Mgt 170

178 **Special Topics in Marketing**
3 units (3 hrs lec)
Prerequisite: Mgt 170 or BA 170 or consent.

181 **Management Science**
The use of management science/operations research (MS / OR) in the analysis of business problems concerning production, marketing, human resources and finance.
3 units (3 hrs lec)
Prerequisites: Math 50 and Stat 102

Management (Mgt)

183 **Introduction to Information Systems**
An introduction to computer and information systems, network and telecommunications basics; Internet basics; foundations of information systems in management; and using IT for strategic advantage.
3 units. (2 hrs lec, 3 hrs lab)
Prerequisite: Mgt 101

186 **Management of Information Systems and Technology**
Strategic application of information systems and technology for effective managerial decision-making and policy formulation and implementation; and effective management of technological advances in planning and control.
3 units
(2 hrs lec, 3 hrs lab)
Prerequisite: BA 183.1

187 **Operations Management**
Principles, procedures, and techniques in the design, operation, and improvement of production systems.
3 units (3 hrs lec)
Prerequisite: Mgt 181

190 **Strategic Management**
Integration of the different management functional areas are discussed and taken up from the point of view of general and top management with focus on the formulation, execution, control and review of business strategies.
3 units (3 hrs lec)
Prerequisite: Senior Standing

191 **Enterprise Planning and Development**
Activities and dynamics involved in planning and developing a new enterprise.
3 units (3 hrs lec)
Prerequisite: Senior Standing

192 **Management of Small Business**
Management of small business focuses on the practical aspect of successfully launching and managing a small business.
3 units (3 hrs lec)
Prerequisite: Mgt 191

193 **Enterprise Management Practice**
Fieldwork or hands-on component of the BS Management program designed to relate management theories, principles and best practices learned in class to the actual operations of a small business or enterprise.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Mgt 192

195 **Management Practice**
Fieldwork component to provide senior students with opportunities to relate management theories and principles learned in class to the actual operations of a private/public organization.
3 units (200 hours internship work)
Prerequisite: Senior Standing

197 **Special Topics in Management**
Selected topics, contemporary issues and problems in managing private and public entities.
3 units (3 hrs lec)
Prerequisite: Senior Standing

199 **Management Research**
3-6 units
Prerequisite: Senior Standing.

199.1 **Management Research I**
Methods and applications of social science research in the field of management with emphasis on the preparation of a research proposal that addresses knowledge gaps in management.
3 units (3 hrs lec)
Prerequisite: None

Management (Mgt)

199.2 **Management Research II**
Social science research in the field of management with emphasis on the major steps undertaking research from data generation, analysis and interpretation, and write-up of the report to presentation of results and research evaluation.
3 units (3 hrs lec)
Prerequisite: Mgt 199.1

Plan

101 **Introduction to Urban Planning**
Concepts and frameworks in urban and regional planning.
3 units (3 hrs lec)
Prerequisite: None

Public Management (PM)

101 **The Philippine Administrative System**
The general structure of the Philippine bureaucracy; its principal operating features, including the personnel system, the financial system, central tendencies in decision-making and national-local relations; and major problem areas.
3 units (3 hrs lec)
Prerequisite: None

113 **Administrative Communication**
Theoretical knowledge, verbal and written techniques applicable to the business domain.
3 units (3 hrs lec)
Prerequisite: None

135 **Public Fiscal Administration**
The organization and procedure of efficient fiscal management including purchasing, tax administration, expenditure, control, auditing and debt management.
3 units (3 hrs lec)
Prerequisite: PM 101

140 **Program Administration**
Planning, implementation, monitoring and evaluation of development programs.
3 units (3 hrs lec)
Prerequisites: PM 101 and Junior Standing

141 **Public Administration and Economic Order**
Consideration of the economic goals of the as indicated by legislation, economic plans, and declared public policies; the principal methods of governmental control over the economic order; and the role of administration in the implementation of these policies and control.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: PM 101

142 **Politics & Administration**
The administrative process in its political setting; the formal and informal influences on the bureaucracy.
3 units (3 hrs lec)
Prerequisite: PM 101

146 **Administrative Law**
An examination of those basic principles of law with which the administrator should be familiar; judicial restraints on administrative process, judicial enforcement of administrative decisions and legal remedies against administrative action.
3 units (3 hrs lec)
Prerequisite: None

151 **Local Government and Administration**
The local government system in the Philippines, its administrative organizations and operations.
3 units (3 hrs lec)
Prerequisite: None

Public Management (PM)

171 **Public Administration and Social Change**
The interaction of administrative and social factors in Filipino national development, the social constraints on administrative behaviour.
3 units (3 hrs lec)
Prerequisites: Mgt 104 and PM 101

Cooperative Management (CM)

102 **Introduction to Cooperatives**
Concepts, scope, principles and, laws of cooperatives.
3 units (3 hrs lec)
Prerequisite: None

196 **Practicum**
3 units
Prerequisite: None

197 **Special Topics in Cooperatives**
Issues and problems in cooperative organization, management, and development.
3 units (3 hrs lec)
Prerequisite: Senior Standing

Information Technology (IT)

101 **Introduction to Computer Systems**
Introduction to computer systems, software systems and computer organization; the use of computer-based productivity tools
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: None

102 **Fundamentals of Programming**
Expansion and development of materials introduced in IT 101; systematic program development; data structure and file processing; graphical user interface concepts; database system concepts.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: IT 101

127 **Database Management System**
Database management system; data definition and manipulation language; principal database systems and query languages.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: IT 101

152 **Management Information System**
Role of MIS in decision-making process of management; includes identification, evaluation, modification and integration of information flows into MIS.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: IT 102

197 **Special Topics in Information Technology**
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: IT 102, Senior Standing

BACHELOR OF SCIENCE IN ACCOUNTANCY

First Year First Semester

Course No.	Course Title	Units
GE Core 1		3
GE Core 2		3
Stat 102	Statistical Methods in Research	3
BA 101	Introduction to Business Management	3
BA 99.1	Fundamental Accounting Theory and Practice I	3
Econ 11	Introductory Economics	3
PE 1	Foundations of Physical Fitness	(2)
NSTP		(3)
		18

First Year Second Semester

Course No.	Course Title	Units
GE Core 3		3
GE Core 4		3
GE Core 5		3
Math 50	Applied Calculus	4
BA 183.1	Introduction to Information Technology	3
BA 99.2	Fundamental Accounting Theory and Practice II	3
PE 2		(2)
NSTP		(3)
		19

Second Year First Semester

Course No.	Course Title	Units
GE CORE 6		3
Econ 101	Macroeconomics	3
BA 183.2	Basic Programming and Database Management	3
BA 114.1	Accounting Theory and Practice I	6
BA 104	Organizational Behavior	3
PE 2		(2)
		18

Second Year Second Semester

Course No.	Course Title	Units
GE Core 7		3
Comm 11	Professional Communication	3
Econ 102	Microeconomics	3
BA 170	Introduction to Marketing Management	3
BA 114.2	Accounting Theory and Practice II	6
BA 181	Management Science	3
PE 3		(2)
		21

Third Year First Semester

Course No.	Course Title	Units
GE Elect 1	GE Elective 1	3
GE Elect 2	GE Elective 2	3
GE Elect 3	GE Elective 3	3
BA 116	Cost Accounting	6
BA 161	Law on Business Transactions	3
BA 187	Operations Management	3
		21

Third Year Second Semester

Course No.	Course Title	Units
GE Elect 4	GE Elective 4	3
GE Elect 5	GE Elective 5	3
BA 118.1	Advanced Accounting I	6
BA 162	Law on Business Associations	3
BA 141	Business Finance I	3
BA 117	Management Accounting and Control	3
		21

Fourth Year First Semester

Course No.	Course Title	Units
BA 142	Business Finance II	3
BA 118.2	Advanced Accounting II	6
BA 164	Negotiable Instruments and Banking Related Laws	3
BA 127	Tax Accounting I	3
BA 199.1	Business Research I	3
BA 122	Government Accounting and Auditing: Theory and Practice	3
		21

Fourth Year Second Semester

Course No.	Course Title	Units
PI 100	The Life and Works of Jose Rizal	3
BA 199.2	Business Research II	3
BA 167	Sales and Bailments and Other Special Laws	3
BA 128	Tax Accounting II	3
BA 145	Investment Management	3
BA 120.1	Audit Theory	3
BA 184.1	Computer-based Accounting Systems	3

21

Fourth Year Midyear

Course No.	Course Title	Units
BA 195.1	Public Accounting Practice I	3
		3

Fifth Year First Semester

Course No.	Course Title	Units
BA 196	Seminar in Accounting	3
BA 195.2	Public Accounting Practice II	3
BA 120.2	Audit Practice	6
BA 184.2	Audit of Computer-based Accounting Systems	3
BA 190	Strategic Management	3
BA 129	Management Services	3
		21

TOTAL NUMBER OF UNITS **184 units**

BACHELOR OF SCIENCE IN MANAGEMENT

First Year First Semester

Course No.	Course Title	Units
GE Core 1		3
GE Core 2		3
GE Elective 1		3
BA 99.1	Fundamental Accounting Theory and Practice I	3
Mgt 101	Introduction to Management	3
PM 101	The Philippine Administrative System	3
PE 1	Foundations of Physical Fitness	(2)
NSTP		(3)
		18

First Year Second Semester

Course No.	Course Title	Units
GE Core 3		3
GE Core 4		3
GE Elective 2		3
GE Elective 3		3
BA 99.2	Fundamental Accounting Theory and Practice II	3
Econ 11	Introductory Economics	3
PE 2		(2)
NSTP		(3)
		18

Second Year First Semester

Course No.	Course Title	Units
Mgt 147	Fundamentals of Taxation	3
Comm 12	Technical Communication	3
Math 50	Applied Calculus	4
Mgt 115	Management Accounting	3
Mgt 170	Introduction to Marketing Management	3
BA 183.1	Introduction to Information Technology	3
PE 2		(2)
		19

Second Year Second Semester

Course No.	Course Title	Units
GE Core 5		3
Stat 102	Statistical Methods in Research	3
Mgt 104	Organizational Behavior	3
Mgt 141	Financial Management I	3
Mgt 173	Marketing Management	3
BA 183.2	Basic Programming and Database Management	3
PE 3		(2)
		18

Third Year First Semester

Course No.	Course Title	Units
Mgt 121	Human Resource Management	3
Mgt 142	Financial Management II	3
Mgt 161	Law on Business Transactions	3
Mgt 181	Management Science	3
Econ 101	Macroeconomics	3
Qualified Elective 1		3
		18

Third Year Second Semester

Course No.	Course Title	Units
GE Core 6		3
Mgt 186	Management of Information Systems and Technology	3
Mgt 162	Law on Business Organizations and Labor	3
Mgt 187	Operations Management	3
Econ 102	Microeconomics	3
Qualified Elective 2		3
		18

Third Year Midyear

Course No.	Course Title	Units
Mgt 195	Management Practice	3
		3

Fourth Year First Semester

Course No.	Course Title	Units
GE Core 7		3
GE Elective 4		3
Mgt 190	Strategic Management	3
Mgt 191	Enterprise Planning and Development	3
Mgt 199.1	Management Research I	3
PI 100	The Life and Works of Jose Rizal	3
		18

Fourth Year Second Semester

Course No.	Course Title	Units
GE Elective 5		3
Elective		3
Mgt 199.2	Management Research II	3
Mgt 192	Management of Small Business	3
Mgt 197	Special Topics in Management	3
		3
		15

TOTAL NUMBER OF UNITS **145 units**

Qualified Electives/Electives

Course No.	Course Title	Units
Fish 104	Introduction to Fish Entrepreneurship	3
Mgt 174	Marketing Research	3
Mgt 193	Enterprise Management Practice	3
Plan 101	Introduction to Urban and Regional Planning	3
PM 135	Public Fiscal Administration	3
PM 142	Politics and Administration	3
PM 151	Local Government and Administration	3

ELECTIVES

Qualified Elective – any course number that is 100 or above in Business Administration (BA), Management (Mgt), Marketing (Mktg), or other courses approved by the program adviser, provided that the prerequisite/s of the chosen courses is/are satisfied. ***(6 Units)***

Elective – Any course from any area or disciple approved by the program adviser, provided that the prerequisite/s of the chosen course is/are satisfied. ***(3 units)***

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION (MARKETING)

First Year First Semester

Course No.	Course Title	Units
GE Core 1 (Comm 10)	Critical Perspective in Communication	3
GE Core 2		3
GE Core 3		3
Math 50	Applied Calculus	4
BA 99.1	Fundamental Accounting Theory and Practice I	3
BA 183.1	Introduction to Information Technology	3
PE 1	Foundations of Physical Fitness	(2)
NSTP		(3)
		19

First Year Second Semester

Course No.	Course Title	Units
GE Core 4		3
GE Core 5		3
Comm 11	Professional Communication	3
Econ 11	Introductory Economics	3
BA 99.2	Fundamental Accounting Theory and Practice II	3
BA 183.2	Basic Programming and Database Management	3
PE 2		(2)
NSTP		(3)
		18

Second Year First Semester

Course No.	Course Title	Units
GE Core 6		3
GE Core 7		3
GE Elective 1		3
GE Elective 2		3
Stat 102	Statistical Methods in Research	3
Econ 102	Microeconomics	3
PE 2		(2)
		18

Second Year Second Semester

Course No.	Course Title	Units
GE Elective 3		3
GE Elective 4		3
Econ 101	Macroeconomics	3
BA 181	Management Science	3
BA 115	Management Accounting	3
BA 101	Introduction to Business Management	3
PE 3		(2)
		18

Third Year First Semester

Course No.	Course Title	Units
GE Elective 5		3
Elective		3
BA 170	Introduction to Marketing Management	3
BA 104	Organizational Behavior	3
BA 141	Business Finance I	3
Mktg 171	Consumer Behavior	3
		18

Third Year Second Semester

Course No.	Course Title	Units
BA 187	Operation Management	3
BA 142	Business Finance II	3
BA 173	Supply Chain Management	3
BA 176	Sales Management	3
Mktg 172.1	Integrated Marketing Communications I	3
Mktg 176	Brand Management	3
		18

Third Year Midyear

Course No.	Course Title	Units
Mktg 195	Marketing Practicum	3
		3

Fourth Year First Semester

Course No.	Course Title	Units
BA 179	Law and Marketing	3
BA 175	International Marketing	3
Mktg 172.2	Integrated Marketing Communications II	3
Mktg 177	Customer Relationship Management	3
Mktg 199.1	Marketing Research I	3
		15

Fourth Year Second Semester

Course No.	Course Title	Units
Elective 2		3
PI 100	The Life and Works of Jose Rizal	3
BA 190	Strategic Management	3
BA 178	Seminar in Marketing Management	3
Mktg 199.2	Marketing Research II	3
		15

TOTAL NUMBER OF UNITS **142 units**

Qualified Marketing Electives

Course No.	Course Title	Units
Mktg 180	Social Entrepreneurship	3
Mktg 185	Fundamentals of Business Analytics	3
Mktg 188	Retail and Merchandising	3
Mktg 189	Business Statistics	3

SCHOOL OF TECHNOLOGY

The School of Technology (SOTECH), formerly the School of Technology and Environmental Resources (STER), was established on 29 March 1984 as the fifth degree-granting unit of the U.P. in the Visayas. It was formally operationalized on 17 February 1986 with the transfer of the Food Technology program, along with its faculty, from the College of Arts and Sciences.

On 22 April 1993 the name of the School was changed from STER to SOTECH. Along with this change of name was a modification of its mandate for it to become more responsive to the needs of the region and nation.

VISION

To be a lead institution in food, environment, and engineering, complementary to the mandate of the University of the Philippines Visayas.

MISSION

To produce globally-competitive leaders and innovators, generate and transfer environment-friendly and ridge-to-reef appropriate technologies, and advocate for and contribute to sustainable development.

Undergraduate Programs

1. Bachelor of Science in Chemical Engineering
2. Bachelor of Science in Food Technology

ADMISSION AND RETENTION POLICIES

Bachelor of Science in Chemical Engineering

Admission of New First Year Students

Existing rules on the admission of beginning freshmen shall apply.

Admission of Shiftees from Other UPV Colleges and Transferees from Other Units of the UP System

Shiftees and transferees will be accepted during the first and second semesters. The applicant must:

1. submit a letter of application for admission, together with the True Copy of Grades, stating the reason(s) for shifting/ transferring
2. have completed at least 30 academic units which should include Math 18, or equivalent
3. not have incurred grades of "5", unremoved "4", or uncompleted "INC" during the semester prior to application for transfer or shift
4. have a Math/Chem/Physics Weighted Average (MCPWA) of 2.0 or better, excluding GE courses

Admission of Transferees from Other Universities/Colleges

Existing rules on admission of transferees from other universities/colleges shall apply. Transferees will be accepted only during the first semester. The applicant must:

1. submit a letter of application and accomplished application form (U.P. Form 3.1) stating the reason(s) for transferring at least one (1) month before registration. An official Copy of Grades or Transcript of Records from each university/college attended should be attached to the application form
2. have completed at least 33 academic units, which should include Math 18 or its equivalent

3. complete 50% or more of the units required under the BSChE program in the University
4. not have incurred grades of "5", unremoved "4", or uncompleted "INC" in all academic courses for all semesters enrolled in the university/college where he/she comes from
5. have a General Weighted Average (GWA) of 2.0 or better in all courses creditable to BSChE
6. have a MCPWA of 1.75 or better.

Admission of Applicants to the Program as a Second Baccalaureate Degree

Existing rules on admission of baccalaureate degree holders who are applying for a second baccalaureate degree shall apply. Applicants will be accepted only during the first semester. The applicant must:

1. submit a letter of application and accomplished application form (U.P. Form 3.1) stating the reason(s) for enrolling in BSChE at least one (1) month before registration. An official Copy of Grades or Transcript of Records should be attached to the application form.
2. complete at least 36 units of those required under the BSChE program in the University
3. have a General Weighted Average (GWA) of 2.0 or better in all courses creditable to the BSChE program
4. have a MPCWA of 1.75 or better

Retention Policies

Scholastic standing of students shall be evaluated at the end of every semester and existing rules on scholastic delinquency shall be applied. First Year and Second Year students will be retained in the program provided that they do not have a grade below 3.0 in Math, Physics and Chemistry courses.

SCHOOL OF TECHNOLOGY

Undergraduate Courses

Chemical Engineering (ChE)

101 Introduction to the Chemical Engineering Profession
An introductory course on the chemical engineering profession; history and emerging trends in various fields of chemical engineering; roles of chemical engineers in the development of society; overview of fundamental topics in chemical engineering
2 units (2 hrs lec)
Prerequisite: None

102 Introduction to Chemical Engineering Calculations
Problem-solving techniques. Principles of equilibrium as applied to unit operations and thermodynamics. Elementary mass and energy balances
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Chem 23 and Math 18

103 Industrial Stoichiometry
Analysis of industrial processes: gaseous, liquid and solid fuels, sulfur and nitrogen compounds, lime and cement
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: ChE 102

104 Mathematical Methods in Chemical Engineering
Mathematical treatment of problems in chemical engineering; introduction to ordinary differential equations, Fourier series, Laplace transformations and vector analysis
3 units (3 hrs lec)
Co-requisite: Math 55

Chemical Engineering (ChE)

105 Computer Applications in Chemical Engineering
Concepts and methods of programming for stored program digital computation; computer solutions of engineering problems. Individual projects
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: Math 53

122 Chemical Engineering Thermodynamics I
Applications of the first and second laws of thermodynamics; thermodynamic properties of fluids
3 units (3 hrs lec)
Prerequisite: ChE 102
Co-requisite: Math 55

123 Chemical Engineering Thermodynamics II
Thermodynamics of flow processes. Power cycles, refrigeration and liquefaction processes. Thermodynamic properties of homogeneous mixtures. Phase and chemical reaction equilibria
3 units (3 hrs lec)
Prerequisite: ChE 122

127 Chemical Reaction Engineering
Kinetics of homogeneous and heterogeneous reactions; analysis of various chemical reactors; catalysis; application of kinetics and thermodynamics to selected unit processes
4 units (3 hrs lec, 3 hrs lab)
Prerequisite: ChE 123, ChE 130, and Chem 31

129 Fluid Mechanics and Momentum Transfer
Fundamentals of fluid mechanics and momentum transfer; application of principles of momentum transfer to process equipment design; mass, energy and momentum balances applied in compressible or incompressible fluid flow; steady or unsteady flow and metering of fluid flow pertinent in the design of process equipment and piping networks
3 units (3 hrs lec)
Prerequisite: ChE 102 and Math 55

130 Heat Transfer
Fourier heat transport equation and its applications; heat flow by conduction, convection, and radiation; design and process analysis of heat transfer equipment
3 units (3 hrs lec)
Prerequisite: ChE 102 and Math 55

132 Separation Processes 1
Principles of mass transport and its application in unimolecular and equimolar counter diffusion; unified treatment of stagewise operations, design of multistage equipment
4 units (3 hrs lec, 3 hrs lab)
Prerequisite: ChE 129 and ChE 123

133 Separation Process II
Applications of the principles of separation and rate processes to the design of heat and mass transfer equipment
3 units (3 hrs lec)
Prerequisite: ChE 130 and ChE 132

134 Particle Technology
Treatment of particles and powders with emphasis on sedimentation, centrifugation, filtration, screening, fluidization, materials handling
3 units (3 hrs lec)
Prerequisite: ChE 129

135 Chemical Engineering Laboratory I
Experimental study on thermodynamics, momentum and heat transfer in certain unit operations and processes
2 units (6 hrs lab)
Prerequisite: ChE 123, ChE 129, ChE 130, and Chem 23.1

136 Chemical Engineering Laboratory II
Continuation of ChE 135. Experimental study on separation processes, particle technology, process control and reaction engineering
2 units (6 hrs lab)
Prerequisite: ChE 133, ChE 134, ChE 171, and ChE 172

Chemical Engineering (ChE)

141 Plant Design I
The design of an industrial plant, including the necessary processes and equipment design and sizing; emphasis on the economic factors
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: ChE 127 and ChE 132

142 Plant Design II
Continuation of ChE 141
3 units (1 hr lec, 6 hrs lab)
Prerequisite: ChE 141

145 Chemical Process Industries
Unit processes and operations in the inorganic and organic chemical industries; non-conventional energy sources; case studies
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: ChE 141, ChE 133, ChE 134, and Chem 31

171 Introduction to Biochemical Engineering
Basic microbiology and biochemistry; enzyme and fermentation kinetics; continuous culture; mass transfer in biological system
3 units (3 hrs lec)
Prerequisite: ChE 127 and Chem 31

172 Chemical Process Dynamics and Control
Introduction to process dynamics and simple chemical systems; process simulation and control
3 units (3 hrs lec)
Prerequisite: ChE 102, ChE 104, and ChE 105

173 Industrial Pollution Control
Types, sources and harmful effects of industrial pollutants; measurements of pollution parameters; concepts of pollution prevention emphasized in environmental management systems, environmental impact assessments and risk assessment
3 units (3 hrs lec)
Prerequisite: Chem 31

174 Biochemical Engineering Laboratory
Elementary experiments in biochemical engineering
2 units (6 hrs lab)
Prerequisite: ChE 171

175 Laws, Ethics, Health and Process Safety for Chemical Engineers
Relevant national laws and ethical standards on the professional practice of chemical engineering in the Philippines, health, environment and safety in relation to the industrial field including government regulations and audit and inspection standards
3 units (3 hrs lec)
Prerequisite: 4th Year Standing

181 Bioprocess Engineering
Material and energy balances of cell culture; physical processes; Reactions and Reactors
3 units (3 hrs lec)
Prerequisite: ChE 171 or Consent of Instructor

182 Bioreactor Design
Basics of reactor design, reactor engineering, macrokinetics particle level, reactor level
3 units (3 hrs lec)
Prerequisite: ChE 171 or Consent of Instructor

183 Fermentation Technology
Principles of fermentation, microbial growth kinetics, design of fermenter, media formulation, unit operations in fermentation, economics of fermentation technology
3 units (3 hrs lec)
Prerequisite: ChE 171 or Consent of Instructor

Chemical Engineering (ChE)

195 Practicum
An industry practice in any plant involving any unit process and/or operations, pollution control and abatement processes or operations, or industry-based projects to solve specific concerns in Chemical Engineering
5 units (240 hours)
Prerequisite: ChE 133, ChE 134, and ChE 135

197 Special Topics
3 units (3 hrs lec)
Prerequisite: Consent of Instructor

198 Special Problems
3 units (3 hrs lec)
Prerequisite: Consent of Instructor

199.1 Chemical Engineering Research I
Conceptualization and proposal preparation for chemical engineering projects; research tools and statistical methods relevant to the implementation of the research work
3 units (3 hrs lec)
Prerequisite: 3rd Year Standing

199.2 Chemical Engineering Research II
Continuation of Chemical Engineering Research 1; research project implementation
3 units (1 hr lec, 6 hrs lab)
Prerequisite: ChE 199.1

Electrical Engineering (EE)

6 Essentials of Electrical Engineering I
Fundamentals of electric and magnetic circuits. Analysis of DC and AC circuits. DC machines. Introduction to transformers and to electronics
4 units (3 hrs lec, 3 hrs lab)
Prerequisite: Math 54 and Phys 72

Engineering Sciences (ES)

1 Engineering Drawing
Technical sketching, lettering, instrumental drawing. Multiview projections. Pictorial drawing. Conventions and dimensioning. Graphs and charts
2 units (6 hrs lab)
Prerequisite: 3rd Year Standing

10 Mechanics of Rigid Bodies
Fundamental principles of mechanics and their applications to simple engineering problems involving static and dynamic systems
4 units (3 hrs lec, 3 hrs lab)
Prerequisite: Phys 71 and Math 54

13 Mechanics of Deformable Bodies
Analysis and design of structural and machine elements, such as tension and compression members, shafts, beams and columns, based on equilibrium and material properties. Elementary stress and strain analysis. Riveted and welded connections. Members of two or more materials.
3 units (3 hrs lec)
Prerequisite: ES 10

Environmental Resource Management (ERM)

100 Introduction to Environmental Resource Management
Ecosystem structures, functions, dynamics and modules. Concepts and applications in environmental management.
4 units (2 hrs lec, 6 hrs lab)
Prerequisite: None

Environmental Resource Management (ERM)

108 Community Mobilization for Environmental Resource Management.

Development framework, people's participation and empowerment, gender and environment, methods and techniques in community mobilization, and participatory project management.

3 units (3 hrs lec)
Prerequisite: None

110 Methods in Environmental Resource Management

Principles and techniques of environmental resource management. .

3 units (3 hrs lec)
Prerequisite: None

114 Environmental Policies, Legislations and Strategies

Existing environmental policies, laws, their implementation and limitations.

2 units (2 hrs lec)
Prerequisite: None

116 Natural Resource and Environmental Economics

Economic theory concerned with the economic use of natural resources along with the physical, biological, economic and institutional factors that affect the condition of and control over the utilization of such resources.

3 units (2 hrs lec, 3 hrs lab)
Prerequisite: None

125 Environmental Pollution

Nature, composition, causes, effects and control of pollution.

3 units (3 hrs lec)
Prerequisite: None

128 Waste Management

Nature, composition, quantity of solid, liquid and gaseous wastes by residential, commercial and industrial establishments, disposal, recycling and treatment methods and management.

3 units (3 hrs lec)
Prerequisite: None

129 Environmental Process Technology

Principles of environmental unit operations and processes; theory and design of treatment units, with emphasis on physical and chemical treatment of waters.

4 units (3 hrs lec, 3 hrs lab)
Prerequisite: None

130 Coastal Anthropology

Study of human activity in a single or multi-ecological zone where fishing and fishing-related activities are undertaken.

3 units (3 hrs lec)
Prerequisite: None

131 Coastal Processes

Physical, chemical, biological, and geological processes affecting coastal dynamics and production.

3 units (3 hrs lec)
Prerequisite: None

135 Coastal Fisheries and Management

Resource allocation, management, conservation, utilization of coastal environment for coastal fisheries production.

3 units (3 hrs lec)
Prerequisite: None

140 Land Resource Management

Land classification, principles and practices of conservation, approaches to watershed conservation with emphasis on the upland.

4 units (3 hrs lec, 3 hrs lab)
Prerequisite: None

Environmental Resource Management (ERM)

143 Freshwater Ecosystem

Components, organization and dynamics of the freshwater ecosystem.

3 units (2 hrs lec, 3 hrs lab)
Prerequisite: ERM 100 or its equivalent

145 Water Resource Management

Water impounding technology, hydrology, water quality management in the watershed.

3 units (2 hrs lec, 3 hrs lab)
Prerequisite: None

198 Special Problem

3 units
Prerequisite: Completion of 15 units core courses and/or consent of program adviser.

Environmental Science (EnS)

11 Introduction to Technology and Environment

Principles of environmental and technological developments, perspective and scenario of ecology, energy and materials, population and socio-economic factors, air and water quality and management, environmental wastes and its management

3 units (3 hrs lec)
Prerequisite: 3rd Year Standing

110 Waste Management in Industries

Sources, types, quantities and characteristics of wastes generated by industries; waste management approaches suitable to the industrial environment with emphasis on waste minimization and end-of-the-pipe treatment schemes, disposal alternatives; legal and social dimensions of industrial waste management; emphasis on food and related industries.

3 units (3 hrs lec)
Prerequisite: 4th Year Standing or Consent of Instructor

Food Technology (FT)

11 Introduction to Food Technology

Introduction to food science and technology with emphasis on sources and processing of foods, work/job opportunities of food technologists, responsibilities of food technologists to man and society

1 unit (1 hr lec)
Prerequisite: None

14 Principles of Food Preparation

Fundamental principles of food preparation. Basic recipes are prepared with a focus on their use in meals.

3 units (2 hrs lec, 3 hrs lab)
Prerequisite: None

15 Introduction to Food Microbiology

Fundamental principles in microbiology, classification, characterization, properties and identification of microorganisms; culture and staining techniques

4 units (2 hrs lec, 6 hrs lab)
Prerequisite: Bio 14 and FT 11

100 Food Microbiology

Morphology and physiology of microorganisms in relation to food preservation and food spoilage, microbiological analysis and evaluation of the safety and wholesomeness of foods

5 units (3 hrs lec, 6 hrs lab)
Prerequisite: FT 15 and Chem 16

Food Technology (FT)

101 Statistical Methods in Food Research I
Basic concepts of statistics and probability, descriptive statistics, discrete and continuous random variables and some of their common distributions, estimation techniques, test of hypothesis.
3 units (3 hrs lec)
Prerequisites: FT 11 and Math 11 or equivalent

102 Statistical Methods in Food Research II
Experimental research designs, certain non-parametric tests, applications of research designs to food problems.
3 units (3 hrs lec)
Prerequisites: FT 101

110 Food Processing I
Principles of food preservation; low-temperature preservation, minimal processing, dehydration, and fermentation technology
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: FT 100

111 Food Processing II
Thermal processing, irradiation, and use of chemical additives in food processing/preservation, packaging for thermally processed foods
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: FT 110

122 Quality Assurance in Food Industries
Principles of food quality assurance; specifications and standards of food quality; methods of evaluation and monitoring of food processing and quality - raw material, in-process, and finished product assessment
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: FT 111 and Stat 102

123 Food Packaging Technology
Physical, microbiological, chemical, and functional characteristics of food packaging material and packages as basic factors in commercial food production
3 units (3 hrs lec)
Prerequisite: FT 111

125 Sensory Evaluation
Principles and methods of sensory evaluation, its importance and applications in quality assurance, food research and food production/processing and marketing
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: FT 111 and Stat 102

130 Food Chemistry I
Proteins, carbohydrates and lipids in foods - classes, properties, metabolism and reactions
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: Chem 31 and FT 110

131 Food Chemistry II
Food pigments, flavor compounds, vitamins, and other secondary components of food - classes, properties, metabolism, development, and changes during handling, processing and storage. Changes in proteins, carbohydrates and lipids during processing and storage.
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: FT 130 and FT 111

141 Food Analysis
Principles and techniques of physical and chemical methods of analyses as applied to food and food products
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: Chem 28 and FT 131

150 Food Engineering
Unit operation principles and their applications in food processing: material and energy balances, fluid mechanics, theory and applications of heat transfer, simultaneous heat and mass transfer
5 units (3 hrs lec, 6 hrs lab)
Prerequisite: Math 50, Phys 21, and FT 111

151 Food Engineering II
Unit operation principles and their applications in food processing: unit operations involving simultaneous heat and mass transfer, contact-equilibrium separation processes, size reduction and mixing.
4 units (3 hrs lec, 3 hrs lab)
Prerequisite: FT 150

Food Technology (FT)

154 **Food Enterprise Management**
Introduction to the theories and values of entrepreneurship and the practices in food enterprise development and management
3 units (3 hrs lec)
Prerequisite: FT 122

160 **Computer Applications in Food Technology**
Software applications for word processing, data organization and analysis, and presentation, with emphasis on food technology applications.
3 units (2 hrs lec, 3 hrs lab)
Prerequisite: COI

161 **Baking Science**
Fundamental principles of baking - history, basic ingredients, process and types - and measures to assess quality of bakery products
3 units (3 hrs lec)
Prerequisite: FT 110

162 **GIS and Remote Sensing for Food and Environment**
Application of Geographic Information System (GIS) and remote sensing in food technology and environmental science
3 units (3 hrs lec)
Prerequisite: Senior Standing

175 **Food Safety**
Causes, symptoms and prevention of food-borne illnesses, food hazards and toxicants, good manufacturing practices (GMP), sanitation standard operating procedures (SSOP) and hazards analysis and critical control points (HACCP) in industries
3 units (3 hrs lec)
Prerequisite: FT 122

180 **Postharvest Technology of Agricultural and Fishery Produce**
Fundamental principles in handling fresh produce; maturity indices and freshness indicators of agricultural and fishery products
3 units (3 hrs lec)
Prerequisite: FT 130

190 **Undergraduate Seminar**
Special topics related to food science and technology
1 unit (1 hr)
Prerequisite: 3rd Year Standing

195 **Internship in Industries**
6 units (288 hours)
Prerequisite: FT 122, FT 125, and FT 131

197 **Methods in Food Research**
Basic concepts, techniques, and methods of research in food science and technology
3 units (3 hrs lec)
Prerequisite: FT 122, FT 125, and FT 131

200 **Undergraduate Thesis**
3 units
Prerequisite: FT 141 and FT 197

BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

First Year First Semester

Course No.	Course Title	Units
Math 18	Precalculus Mathematics	5
Chem 23	Inorganic Analytical Chemistry	3
Chem 23.1	Inorganic Analytical Chemistry Laboratory	2
ChE 101	Introduction to the Chemical Engineering Profession	2
GE Core 1		3
GE Core 2		3
GE Core 3		3
PE 1	Foundations of Physical Fitness	(2)
NSTP 1		(3)
		21

First Year Second Semester

Course No.	Course Title	Units
Math 53	Calculus I	4
Phys 71	Elementary Physics I	4
Phys 71.1	Elementary Physics I Laboratory	1
Chem 31	Elementary Organic Chemistry	3
Chem 31.1	Elementary Organic Chemistry Laboratory	2
ChE 102	Introduction to Chemical Engineering Calculations	3
GE Core 4		3
PE		(2)
NSTP 2		(3)
		20

First Year Midyear

Course No.	Course Title	Units
Math 54	Calculus II	4
		4

Second Year First Semester

Course No.	Course Title	Units
Math 55	Calculus III	4
ChE 103	Industrial Stoichiometry	3
ChE 104	Mathematical Methods in Chemical Engineering	3
ChE 105	Computer Applications in Chemical Engineering	3
ChE 122	Chemical Engineering Thermodynamics I	3
GE Core 5		3
PE		(2)
		19

Second Year Second Semester

Course No.	Course Title	Units
Phys 72	Elementary Physics II	4
Phys 72.1	Elementary Physics II Laboratory	1
ChE 123	Chemical Engineering Thermodynamics II	3
ChE 129	Fluid Mechanics and Momentum Transfer	3
ES 10	Mechanics of Rigid Bodies	4
GE Core 6		3
GE Core 7		3
PE		(2)
		21

Third Year First Semester

Course No.	Course Title	Units
ChE 130	Heat Transfer	3
ChE 132	Separation Process I	4
ChE 134	Particle Technology	3
ES 13	Mechanics of Deformable Bodies	3
GE Elective 1		3
GE Elective 2		3
		19

Third Year Second Semester

Course No.	Course Title	Units
ChE 133	Separation Process II	3
ChE 135	Chemical Engineering Laboratory I	2
ChE 199.1	Chemical Engineering Research I	3
ChE 127	Chemical Reaction Engineering	4
ChE 173	Industrial Pollution Control	3
GE Elective 3		3
GE Elective 4		3
		21

Third Year Midyear

Course No.	Course Title	Units
ChE 195	Practicum	5
		5

Fourth Year First Semester

Course No.	Course Title	Units
ChE 171	Introduction to Biochemical Engineering	3
ChE 141	Plant Design I	3
ChE 199.2	Chemical Engineering Research II	3
ChE 172	Chemical Process Dynamics and Control	3
Elective 1		3
GE Elective 5		3
		18

Fourth Year Second Semester

Course No.	Course Title	Units
ChE 136	Chemical Engineering Laboratory II	2
ChE 142	Plant Design II	3
ChE 145	Chemical Process Industries	3
ChE 175	Laws, Ethics, Health, and Process Safety for Chemical Engineers	3
PI 100	The Life and Works of Jose Rizal	3
Elective 2		3
		17

TOTAL NUMBER OF UNITS **165 units**

BACHELOR OF SCIENCE IN FOOD TECHNOLOGY

First Year First Semester

Course No.	Course Title	Units
FT 11	Introduction to Food Technology	1
Bio 14	Integrative Biology	5
Math 50	Applied Calculus	4
GE Core 1		3
GE Core 2		3
GE Elective 1		3
PE 1		(2)
NSTP 1		(3)
		19

First Year Second Semester

Course No.	Course Title	Units
FT 15	Introduction to Food Microbiology	4
Chem 16	General Chemistry I	3
Chem 16. 1	General Chemistry I Laboratory	2
GE Core 3		3
GE Elective 2		3
GE Elective 3		3
PE		(2)
NSTP 2		(3)
		18

Second Year First Semester

Course No.	Course Title	Units
FT 100	Food Microbiology	5
Chem 17	General Chemistry II	3
Chem 17.1	General Chemistry II Laboratory	2
GE Core 4		3
GE Core 5		3
GE Elective 4		3
PE		(2)
		19

Second Year Second Semester

Course No.	Course Title	Units
FT 110	Food Processing I	3
Chem 31	Elementary Organic Chemistry	3
Chem 31.1	Elementary Organic Chemistry Laboratory	2
Stat 102	Statistical Methods in Research	3
GE Core 6		3
GE Elective 5		3
PE		(2)
		17

Third Year First Semester

Course No.	Course Title	Units
FT 111	Food Processing II	3
FT 130	Food Chemistry I	5
Phys 21	Introductory Physics	4
Chem 28	Analytical Chemistry I	3
Chem 28.1	Analytical Chemistry I Laboratory	2
FT 190	Undergraduate Seminar	1
		18

Third Year Second Semester

Course No.	Course Title	Units
FT 131	Food Chemistry II	5
FT 122	Quality Assurance in Food Industries	3
FT 125	Sensory Evaluation	3
FT 180	Postharvest Technology of Agricultural and Fishery Produce	3
FT 123	Food Packaging Technology	3
Elective		3
		20

Third Year Midyear

Course No.	Course Title	Units
FT 195	Internship in Industries	6
		6

Fourth Year First Semester

Course No.	Course Title	Units
FT 141	Food Analysis	5
FT 150	Food Engineering	5
FT 197	Methods in Food Research	3
FT 175	Food Safety	3
FT 154	Food Enterprise Management	3
		19

Fourth Year Second Semester

Course No.	Course Title	Units
FT 200	Undergraduate Thesis	3
PI 100	The Life and Works of Jose Rizal	3
GE Core 7		3
Elective		3
Elective		3
		15

TOTAL NUMBER OF UNITS **151 units**

Ad Hoc Committee to Update the UPV Catalogue of Academic Programs

Chair	Prof. Philip Ian Padilla
Members	Asso. Prof. Nieves Toledo
	Assoc. Prof. Liah Catedrilla
	Asst. Prof. Steve Janagap
	Asst. Prof. Francis Eric Almaquer
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	Ms. Maritess Ferraris
	Ms. Erna Doromal
	Mr. Herbert Nalagay
	Ms. Ana Liza Subade

Other Contributors:	Asst. Prof. Ma. Rhona Beriales
	Asst. Prof. Dennis Ong
	Ms. Rhea Sevillo

University of the Philippines Visayas
OFFICE OF THE UNIVERSITY REGISTRAR
New Administration Building, UPV
Miagao, Iloilo 5023

Telefax: (033) 315-8556
Email: our.upvisayas@up.edu.ph