

GRADUATE SCHOOL MISSION STATEMENT

We are a Catholic institution dedicated to advancing the frontiers of knowledge in the theoretical and applied fields through quality graduate education that is comprehensive and responsive to the needs of society. We are committed to the formation of scholars and high level professionals who are ethical, competent, compassionate and committed to the service of the Church, the Nation and the Global Community.

GRADUATE SCHOOL VISION STATEMENT

We envision a Graduate School that stands for excellence and innovation and that will be globally identified for the distinction of its programs and quality of its research.

GRADUATE SCHOOL GOALS

To realize this mission-vision, the Graduate School commits itself within the next five (5) years:

- To develop the intellect and creativity through excellence in instruction, research, and extension work.
- To form scholars and high level professionals in the arts and humanities, the natural and allied health sciences, the social and management sciences who are ethical and who demonstrate competencies functional in both the local and global workplace.
- To hone the professional and social skills, and critical capabilities of students enabling them to become responsible leaders in their careers and community.

- To provide students opportunities to serve the larger community through extension work and community service.
- To produce quality research in the various fields of knowledge that is internationally recognized.
- To recruit Faculty who are acknowledged experts in the field and to complement the teaching staff by inviting international scholars in the various disciplines.
- To build partnerships and linkages between the Graduate School and academic institutions, industry and government entities at the local and international level.
- To enhance the image and visibility of the Graduate School and its work in both the local and global community.

APPLICATION PROCEDURES

- A. Application for admission to the UST Graduate School is until October 15 for October enrollees, April 5 for Summer enrollees and May 25 for June enrollees.
- B. Application forms for Admission are available at the UST Graduate School, UST Admissions Office & at the UST Graduate School Web Site – <http://www.ust.edu.ph>

REQUIREMENTS:

Certified true copy of Transcript of Records, one (1) colored passport size, recent photo (if any) document(s) attesting to passing a Bar/Board Exam, or being a scholar of any agency.

Two (2) Referral Forms: One(1) for the current (immediate) superior (or Dean, in the case of a school); and the other, for the professor in one specialization (major) subject.

For Foreigners:

All of the above and;

TOEFL English Proficiency and Student Visa Requirements.

ADMISSION REQUIREMENTS

1. Bachelor's Degree in Chemistry or allied fields with at least 36 units undergraduate Chemistry with a general average of at least 2.0/85% or B.
2. Complete accomplished application and referral forms.
3. One (1) year teaching working experience.

PHILOSOPHY & OBJECTIVES

The program embodies the School's commitment to improve the teaching of science in secondary schools and in the general education component of the College curriculum. The goal of the program is to provide teachers with opportunities to develop competence in both chemistry content and teaching methodology. Experienced specialists in the field of education teach the core subjects and scientists teach the major subjects in chemistry.

CURRICULUM

MASTER OF SCIENCE MAJOR IN CHEMISTRY EDUCATION

PRE-REQUISITE COURSES: 6 UNITS

GS 500 - St. Thomas on Critical Thinking

As the philosophical foundation of Research Methodology, it is a study of the principles of and skills in critical thinking according to St. Thomas Aquinas in the three areas of mental cognition: simple apprehension, judgment, and reasoning; and of common fallacies towards the acquisition of the art of argumentation.

GS 501 - Research Methodology

The student is introduced to research concepts relevant to chemistry. Discussions center on how to prepare a thesis emphasizing choice of title, statement of the problem, sources of data,

analysis and evaluation of information gathered among others. Course output is a thesis proposal.

CORE COURSES: 9 UNITS

EDM 702 - Psychology of Human Growth and Development

The growth stages in human life, the dimensions of growth and the learning tasks to be developed at each stage.

EDM 705 - Philosophy of Education

This course deals with the study of major philosophies of education that have significantly influenced educational practices. It studies questions that concern philosophers of education and tries to define clearly the philosophical terms that assist in the understanding of educational theories. The students are expected to develop the ability to practice philosophical thinking about educational issues. There will be a two-way approach, on one hand, to trace the philosophical base of some educational practices and on the other hand, to discover the consequences of a philosophical thought in the practice of education. To study the branches of philosophy that provide education its foundations. At the outset, an analysis of the reality of education will be made based on St. Thomas Aquinas; philosophical thinking.

EDM 708 - Trends and Practices in Curriculum Development

A study of concepts, foundations, theories, principles, competing models, paradigms, and processes underlying the technical and practical aspects of curriculum planning. Engages students in curriculum planning procedures that allow them to build theories, create visions, and manage strategies for attaining them in the light of both fundamental and contemporary curriculum thoughts and action and institutional changes. Significant researches and fundamental issues, problems, concerns and future directions in the field of curriculum planning and changes are analyzed and synthesized.

EDM 710 - Instructional Materials Preparation & Instrumentation

A theory and practice-based course that deals specifically with both macro and micro level instructional designs in both educational and training settings. Focus is on the development of competencies in the four components: analysis, design, development and evaluation.

EDM 711 - Educational Diagnosis

The assessment of instructional results to identify learner strengths and disabilities: analysis of assessment results and corrective measures.

EDM 715 - Instructional Design

The politics of education in relation of the community; analysis of the input-throughput-output relationships between educational institutions and their service communities.

EDM 720 - Issues & Trends in Science Education

Updates and current concerns in science education.

MAJOR COURSES: 15 UNITS

CHEM 610 - Inorganic Chemistry

Advanced treatment of atomic and molecular structure, acid-base theories and non-aqueous solvents. Coordination chemistry; theories and application to transition metal compounds.

CHEM 620 - Organic Chemistry

Advanced treatment of the structure, properties and reactivity of organic compounds. Mechanism of the major types of reactions: substitution, addition, elimination and rearrangement.

CHEM 630 - Analytical Chemistry

Principles of instrumentation and of the instrumental methods of analysis. Principles of analytical chemistry: sampling, measurement, calibration, statistical analysis of results. Introduction to chemometrics.

CHEM 640 - Physical Chemistry

Advanced treatment of chemical thermodynamics, and phase equilibria, electrochemistry and chemical kinetics.

CHEM 650 - Biochemistry

Structure and functions of the four major biomolecules: proteins, nucleic acids, carbohydrates and lipids. Introduction to enzyme mechanism.

CHEM 733 - Environmental Chemistry

Chemical principles and concepts applied to the different parts of the environment. Chemical basis of pollution and pollution control, water management.

COGNATE COURSES: 3 UNITS

Any related course that has substantial bearing on Thesis.

OTHER REQUIREMENTS

Written Comprehensive Examinations (WCE)
TW I - 3 units (*Thesis Proposal*)
TW II - 3 units (*Research Colloquium*)
TW III - 3 units (*Thesis Defense*)

Total = 42 Units

UST GRADUATE SCHOOL ADMINISTRATION OFFICIALS AND FACULTY SET-UP

LILIAN J. SISON, Ph.D.
Dean

JOSÉ ANTONIO E. AUREADA, O.P., S.Th.D.
Regent

MICHAEL ANTHONY C. VASCO, Ph.D.
Faculty Secretary

CARLOS P. GARCIA, Ph.D.
Director for Graduate Research

ANNA MARIA GLORIA-WARD, M.A.
*Director, Center for Professional Development &
Consultancy Services*

ROMUALDO DEL ROSARIO, Ph.D.
Supervising Scientist, UST Botanical Garden

MARIBEL G. NONATO, Ph.D.
*Consultant for Chemistry,
Microbiology & Mathematics*

PROFESSORIAL STAFF

EDUCATION

FR. JOSE ANTONIO AUREADA, S.Th.D.
LOURDES CUSTODIO, Ph.D.
ALLAN DE GUZMAN, Ph.D.
PRAXEDES DELA ROSA, Ed.D.
AMELITA GAERLAN, Ph.D.
LEONORA GUERRERO, Ph.D.
MARCELA LEUS, Ed.D.
ALELI SEVILLA, Ph.D.
EMILY TAN, Ph.D.

CHEMISTRY

ALICIA AGUINALDO, Ph.D.
AMELITA BARTOLOME, DR. NAT. SCI.
ARISTEA BAYQUEN, Ph.D.
CHRISTINA BINAG, Ph.D.
CORAZON MENGUITO, Ph.D.
MARIBEL NONATO, Ph.D.
FORTUNATO SEVILLA III, Ph.D.
LILIAN SISON, Ph.D.
MAFEL YSRAEL, Ph.D.

SCHOOL CALENDAR

The University of Santo Tomas follows an Academic Year Calendar of two (2) semesters and a summer term.

Summer Term: April-May

For further information, please call,
Tele-Fax: (632) 740-9732 or
Tel. No. (632) 786-1611 loc 8247; 731-5396
Web-http://graduateschool.ust.edu.ph
E-mail: odgs@mnl.ust.edu.ph

or write to:
The Dean/Faculty Secretary
UST Graduate School
España, Manila, Philippines 1008

University of Santo Tomas

GRADUATE SCHOOL



GRADUATE PROGRAM

AY 2004 – AY 2006

Chemistry Education

Master of Science major in
Chemistry Education

España, Manila