BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING
COURSE DESCRIPTIONS

MATH 111 - COLLEGE ALGEBRA

Algebraic expressions and equations; solution sets of algebraic equations in one variable: linear, quadratic, polynomial of degree n, fractional, radical equations, quadratic in form, exponential and logarithmic equations; decomposition of fractions into partial fractions; solution sets of systems of linear equations involving up to three variables. Matrices and determinants; arithmetic and geometric series; solution sets of different types of inequalities and systems involving quadratics; solution of linear equations using determinants and matrices. Credits: 5 units.

DRAW 111 - ENGINEERING DRAWING I

Practices and techniques of graphical communication; application of drafting instruments, lettering scale, and units of measure; descriptive geometry; orthographic projections; auxiliary views; dimensioning; sectional views; pictorial drawings; requirements of engineering working drawings; and assembly and exploded detailed drawings. Credit: 1 unit.

CHEM 111 - GENERAL CHEMISTRY AND CHEM 111L - GENERAL CHEMISTRY LAB

Basic concepts of matter and its classification; mass relationships in chemical reactions; properties of gases, liquids, and solids; concepts of thermochemistry; quantum theory and electronic behavior; periodic relationship of elements in the periodic table; intramolecular forces; and solutions. Credits: 3 units lecture, 1 unit lab.

MATH 215 - SOLID MENSURATION

Concept of lines and planes; Cavalieri's and Volume theorems; formulas for areas of plane figures, volumes for solids; volumes and surfaces areas for spheres, pyramids, and cones; zone, sector and segment of a sphere; theorems of Pappus. Credits: 2 units; Co-requisite: MATH 111

PHIST - PHILIPPINE HISTORY

This course discusses important events in the history of the Philippines from the earliest period to the contemporary. It discusses the interrelationship of important factors that were responsible for the formation of Philippine, nationhood, the state and the country's economy; how the past affected the country's present and how will it help contribute to its future. Credits: 3 units.

GE 101 - ENGINEERING ORIENTATION

This course aims to orient the engineering freshmen students on the engineering profession, the areas of practice of the different engineering disciplines. The challenges and impacts of the engineering profession, and provide them with basic problem solving skills culminating to a creative design project experience. Credit: 1 unit.

THY 1 - CONTEXTUALIZED SALVATION HISTORY

This course is a critical and reflective look into the different moments of God's intervention in the history of humanity, gradually disclosing Himself and His plan of salvation through persons and events, until this revelation reached its fullness in the incarnation of His Son, our Lord Jesus Christ. The whole history of salvation has for its central figure the person of Jesus Christ. Hence, salvation history, in its very nature, is Christocentric. It is in Jesus that the entire history of humanity finds meaning. It is also to him that history tends. Because of this, all events and persons in the history of salvation are seen in the light of the person of Jesus, apart from whom they have no value. The course shall make use of the Sacred Scriptures as its primary source since it is in the Bible that contains the record of God's interventions with humanity and the testimonies of God's Word, enveloped in human words, continues to communicate to humanity today, and at the same time to facilitate a dialogue between the text of the Bible and the day-to-day life of the Thomasian students. Credits: 3 units.

ENG 1 - INTRODUCTION TO COLLEGE ENGLISH

The course enhances the students' mastery of the basic communication skills in listening, speaking, reading and writing. Interactive activities have been designed to develop critical thinking and collaboration among students. Credits: 3 units.

MATH 104 - ANALYTIC GEOMETRY

Equations of lines and conic sections; curve tracing in both rectangular and polar coordinates in two-dimensional space. Credits: 2 units; Pre-requisite: MATH 111.

CHEM 113 - CHEMISTRY CALCULATIONS

A course that will make freshman chemical engineering students have a deeper understanding of basic chemical concepts often encountered in general chemistry and their corresponding applications in engineering and other fields. The course focuses primarily on chemical calculations frequently performed by chemical engineering students. Credits: 3 units; Pre-requisite: CHEM 111, CHEM 111L

MATH 205 - PLANE AND SPHERICAL TRIGONOMETRY

The course consists of plane trigonometry and spherical trigonometry. Plane trigonometry includes measurements of angles and sides of right and oblique triangles with emphasis on the solution of right triangles and oblique triangles. Trigonometric functions are introduced using the ratios of the sides of a right triangle. The evaluation of functions is then extended to functions of any angle, and graphs of the different trigonometric functions. Inverse functions and their graphs, evaluation of functions of composite angles, proving trigonometric identities, trigonometric equations and complex numbers are also included.

Spherical trigonometry covers the fundamental formulas of spherical triangle, solutions of right, quadrantal and isosceles spherical triangles. Credits: 3 units; Pre-requisite: MATH 111. MATH 215

ENG 2 - ENHANCING READING AND THINKING SKILLS OF COLLEGE FRESHMEN

The course aims primarily to develop students; reading and thinking skill for academic study. It equips students with an understanding of the reading skills and thinking processes, and effective higher order reading strategies for understanding academic texts. It also aims to prepare them for academic writing. Credits: 3 units; Pre-requisite: ENG 1.

RC - RIZAL COURSE

A course on the life, works, ideas and ideals of Jose Rizal which aims to provide students an in-depth appreciation of Rizal's contribution to the building of Filipino nationhood. The course involves the critical and analytical discussion of Rizal in the context of Philippine history. Credits: 3 units;

LIT 101 A - WORLD LITERATURES

This course presents a survey of world literatures representing a gamut of human experiences as exemplified in different literary types and forms.

This course intends to develop among the students the ability to read, understand and appreciate the literatures of the world in order to deepen their knowledge of the complexities of human life and nature, and to inculcate among them the respect for people and cultures, love of nature, desire for peace and the passion for truth and justice, which will eventually, contribute to the enhancement of a compassionate, competent and committed global Thomasian. Credits: 3 units.

THY 2 - LIFE AND SOURCE OF THE SACRAMENTS

The course deals with the Church and sacraments. The first part is about the nature, origin, characteristics and mission of the Church, as having originated from the Trinitarian Community of God whose love was revealed in the incarnate Son, Jesus Christ who accomplished God's plan of salvation. The second part of the course deals with the liturgical life of the Church celebrated specifically through the Sacraments as visible signs of God's grace in the believing, worshipping and serving community. Credits: 3 units; Pre-requisite: THY 1

PHYS 202 - College Physics I

Vectors; kinematics; dynamics; work, energy, and power; impulse and momentum; rotation; dynamics of rotation; elasticity; and oscillation. Credits: 3 units; Pre-requisite: MATH 104, MATH 215

PHYS 202L - College Physics I (Lab)

Experiments in mechanics to develop basic laboratory skills using traditional and computer-based equipment are performed. Credit: 1 unit; Pre-requisite: PHYS 202 (co-requisite), MATH 111, MATH 205

COMP 200 - Computer Fundamentals and Programming

Basic information technology concepts; fundamentals of algorithm development; high-level language and programming applications; computer solutions of engineering problems. Credits: 2 units; Pre-requisite: Second Year Standing

CHEM 201 – Organic Chemistry 1

The course deals with the study of the chemistry of carbon compounds and their properties, structures and reactions. The fundamental approach to chemical reactions and mechanisms are expanded and applied to new reactions. It emphasizes the study of other principal functional groups beyond hydrocarbon compounds, which in conjunction with selected experiments, gives an understanding of the mechanisms of organic reactions. Alkanes, cycloalkanes, alkenes and alkynes are introduced and the chemical reactions of this class of compounds are discussed in detail, along with key mechanisms.

CHEM 202 – Organic Chemistry 2

The course deals with the study of the chemistry of carbon compounds and their properties, structures and reactions. The fundamental approach to chemical reactions and mechanisms are expanded and applied to new reactions. It emphasizes the study of other principal functional groups beyond hydrocarbon compounds, which in conjunction with selected experiments, gives an understanding of the mechanisms of organic reactions. Benzene derivatives, aromaticity and aromatic compounds are introduced and the chemical reactions of this class of compounds are discussed. Reactions of alcohols, ethers, epoxides, amines, aldehydes, ketones, and carboxylic acid and its derivatives are discussed in detail, along with key mechanisms.

Fil 1 - Komunikasyon sa Akademikong Filipino

The course is a metalinguistic study of the Filipino language. The course aims to develop the macro skills, listening, speaking, reading and writing in the academic discourse of communication using the Filipino language.

Math 108 - Differential Calculus

The course includes basic concepts of calculus such as functions, limits and continuity of functions, operations on functions, domain and range, graphs of special functions, evaluating limits using limit theorems, infinity limit and limit at infinity, derivatives and differentiation of algebraic functions, differentiation of transcendental functions, limits of indeterminate forms and Hospital's Rule, curve tracing, derivatives of functions of two variables, partial and total derivatives

PSY 1 - General Psychology

This three-unit course deals with the fundamental concepts and principles in the study of human behavior. It introduces psychological concepts such as sensation, perception, consciousness, human development, motivation, emotion, stress, personality, and others. Application of these psychological concepts to everyday life is also discussed

PHL 5 - Christian Ethics

The course provides an overview of Christian Ethics, which is designed to help students begin answering some fundamental questions about Christ-cantered life and what makes it worth living. It is divided into three parts: Human Person's Ethics of Being and Doing: introduces one to realities of moral life, to an analysis of the moral process (constituents, sources and modifiers of human acts), to the relationship of ethics and morality to religious faith, and to specify nature of Christian morality. Unit 2, Realizing Human Dignity and Genuine Freedom, deals with the human person as a moral agent, human freedom, conscience sin and moral obligation in the light of the Word of God in the Sacred Scriptures and to the Teaching of the Church enshrined in Her tradition, Pronouncements and Documents, and Unit 3, The Christian Response to Some Special Contemporary Moral Issues, gives special attention to the Ten Commandments highlighting the moral principles and virtues vis-a-vis some contemporary moral issues. The specific moral issues they are encountering and this lead them towards committed moral living.

MATH 109 - Integral Calculus

Concept of integration and its application to physical problems such as evaluation of areas, volumes of revolution, force, and work; fundamental formulas and various techniques of integration applied to both single variable and multi-variable functions; tracing of functions of two variables.

PHYS 205 - College Physics II

Fluids; thermal expansion, thermal stress; heat transfer; calorimetry; waves; electrostatics; electricity; magnetism; optics; image formation by plane and curved mirrors; and image formation by thin lenses.

PHYS 205L - College Physics II (Lab)

CHEM 300 - Analytical Chemistry

A study of the theory and practice of gravimetric and volumetric methods of analysis, including an introduction to instrumental methods of analysis.

CHEM 300L - Analytical Chemistry (Lab)

A laboratory course that applies the principles and theories of gravimetric and volumetric methods of analysis of chemical samples, with an emphasis on laboratory techniques and accuracy of measurements.

Fil 2 - Pagbasa at Pagsulat Tungo sa Pananaliksik

The course aims to develop the analytical and critical skills of the students in reading and writing using the Filipino language. It also challenges the students in the possibilities of doing academic writing and research in different fields like Science and Technology, Social Science, Humanities, and other professions using Filipino as an intellectualized language.

PHL 2 - Logic

The course covers the three fundamental parts of logic. The first part deals with the exposition of the nature of ideas, their properties and classification under apprehension. The second part treats on judgment the properties or class of proposition and the rules governing logical opposition and equivalence. The third part presents an exhaustive study of reasoning, of the rules of syllogistic thinking, and of the ways of detecting fallacies in reasoning. The course seeks to enable the learners to think critically, and arrive at valid conclusion and sound judgment.

MATH 312 - Differential Equations

Differentiation and integration in solving first order, first-degree differential equations, and linear differential equations of order n; Laplace transforms in solving differential equations.

SCL 3 - Social Teachings of the Church

(Mater at Magistra, Pacem in Terris, Populorum Progressio, Pastoral Constitution on the Church on the Modern World) – A study of the present Filipino life: in the family, in his work, in his social contacts. The Filipino—his outlook on life, his faith. Problems, studying the social and cultural conditions; offering solutions in the light of the teachings of the Church. Credits: 3 units Lecture. Prerequisite THY 1, THY 2, THY 3

MSE 300 - Fundamentals of Materials Science and Engineering

This course introduces the students to a broad study on the structure and composition of materials (metals, polymers, ceramics, and composite materials) and their properties and behavior in service environments.

CHE 311 - Physical Chemistry for Engineers 1 (Lec)

This course deals with the study of the physical properties and structure of matter, which laws of chemical reaction, and with the theories governing these.

CHE 311L - Physical Chemistry for Engineers 1 (Lab)

This laboratory course accompanying Physical Chemistry 1 (lecture) covers the experiments concerning fundamental physical properties such as density, viscosity, melting point, surface tension; determination of optical properties by applying the principles of colorimetry/turbidimetry, spectrophotometry, refractometry and polarimetry. This course will also deal with important colligative properties, namely boiling point elevation and freezing point depression.

CHE 312 - Chemical Engineering Calculations 1

An introduction to the basic principles in material balances associated with chemical engineering operations and processes

CHEM 311 - Industrial Chemistry

This course deals with the theoretical study of different chemical industries with emphasis on reaction mechanisms that serve the basis of the industrial chemical processes. Recommended industries for discussion are oils and fats, flavors and fragrances, sugar, fermentation, soap and detergents, hydrogen peroxide and inorganic peroxy compounds, industrial acids and bases, polymers petrochemicals, and paints, pigments and industrial coatings. Also included is a discussion of catalysis and its application in the chemical industry.

Chem 311 L - Industrial Chemistry Lab

This is a laboratory course that involves actual preparation of industrial products commonly encountered in the chemical process industries such as manufacture of vegetable oil, refined vegetable oil, soap, wine, refined sugar, paper etc.

MECH 311 - Statics of Rigid Bodies

Force systems; structure analyses; friction; centroids and centers of gravity; and moments of inertia.

MATH 301 - Probability and Statistics

Basic principles of statistics; presentation and analysis of data; averages, median, mode; deviations; probability distributions; normal curves and applications; regression analysis and correlation; application to engineering problems.

CHE-MATH 320 - Advanced Engineering Mathematics for ChE

This course is a continuation of Differential Equations and is a combination of selected analytical and numerical methods of solutions to problems commonly encountered in chemical engineering. Laplace Transforms and Fourier Series are discussed as a tool in solving ordinary and partial differential equations analytically. Numerical Methods are applied in determining roots of non-linear equations, integration, differentiation and solutions of ordinary and partial

differential equations. Knowledge of computer programming or the use of commercial softwares is essential to facilitate repetitive numerical calculations.

CHE 321 - Physical Chemistry for Engineers 2 (Lec)

A study of the fundamental principles of physical and chemical properties of matter covering chemical and ionic equilibria, electrochemistry, kinetics, surface phenomena and catalysis, and introduction to quantum mechanics.

CHE 321L - Physical Chemistry for Engineers 2 (Lab)

This laboratory course accompanying Physical Chemistry 2 (lecture) is a continuation of Physical Chemistry I Laboratory which covers the experiments on chemical equilibria, phase equilibria, surface phenomena, thermochemistry, kinetics, and electrochemistry.

CHE 322 - Chemical Engineering Calculations 2

This course deals on material and energy balances in industrial processes. This includes combustion of gaseous, liquid and solid fuels, production of sulfuric acid, nitrogen compounds, lime and cement

CHE 323 - Chemical Engineering Thermodynamics 1

This course deals with the applications of the 1st and 2nd laws of thermodynamics to close and open systems, volumetric properties of pure substances, the use of phase diagrams and thermodynamic tables, applications of equations of state for ideal and non-ideal fluids.

CHE 324 - Principles of Transport Processes

This course shows the phenomenological development of the equations that describe the transport phenomena (mass, energy and momentum) and illustrates applications of these equations through examples in chemical engineering. Both molecular and macroscopic transport are covered highlighting unifying principles of transport processes and properties.

MECH 312 - Dynamics of Rigid Bodies

Kinetics and kinematics of a particle; kinetics and kinematics of rigid bodies; work energy method; and impulse and momentum.

MECH 313 - Mechanics of Deformable Bodies

Axial stress and strain; stresses for torsion and bending; combined stresses; beam deflections; indeterminate beams; and elastic instability.

CHE 300 - Computer-Aided Drafting for Chemical Engineers

Concepts of computer-aided drafting (CAD); introduction to the CAD environment; terminologies; and the general operating procedures and techniques in entering and executing basic CAD commands.

CHE 411 - Heat and Mass Transfer

This course discusses the application of heat transfer and mass transfer to the design of equipment employing heat exchange, mass exchange and simultaneous heat and mass exchange.

CHE 412 - Momentum Transfer

This course deals with the fundamental concepts of the two branches of fluid mechanics (statics and dynamics) which are important in unit operations. The combined Mass, Energy and Momentum balances are applied in compressible or incompressible fluid flow, branching of fluids in transport, steady or unsteady flow, including metering of fluids that are important in the design of fluid flow piping network. The course ends with the design of different types

of filtration equipment operated at constant pressure, constant rate or a combined constant pressure preceded by constant rate. Design of continuous rotary vacuum filter is also discussed.

CHE 413 - Chemical Engineering Thermodynamics 2

This course deals with the thermodynamic analysis of power and refrigeration cycles. It also discusses an introduction to solution thermodynamics and chemical equilibria.

CHE 414 - Introduction to Biotechnology

This subject opens with an overview of basic microbiology which includes the types of cells and their physical and chemical structure. Since enzymes are essential to biological life their role and the factors that affect their activity is discussed. Also included is a discussion of how enzymes can be produced for industrial application. The second part of this subject is a discussion of the mechanism by which cells grow and work in batch and continuous processes and how environmental factors affect their metabolic activity. This subject is concluded by considering how cells can be altered so that their metabolic capability may be enhanced.

ENE 300 - Environmental Engineering

Ecological framework of sustainable development; pollution environments: water, air, and solid; waste treatment processes, disposal, and management; government legislation, rules, and regulation related to the environment and waste management; and environmental management system.

EE 310 - Basic Electrical and Electronics Engineering

This course deals with the basic principles of electrical and electronics engineering of relevance to chemical engineers

GE 303 - Safety Management

Evolution of safety management; safety terminology; safety programs adopted by high risk industries; hazards in the construction, manufacturing, gas and power plants, and other engineering industries and how to prevent or mitigate them; techniques in hazard identification and analysis in workplaces; off-the-job safety; disaster prevention and mitigation; and incident investigation.

ENG 107B - Technical Communication

The nature of technical communication; skills and strategies for reading and writing literature reviews, journal articles, and technical reports; making oral presentations.

CHE 400 - Methods of Research

This course deals with research preparation methods, research tools, research proposals, and the implementation, presentation and publication of research work.

CHE 421 - Separation Processes

This course covers the application of principles to equilibrium stage separation operations such as distillation, liquid- liquid extraction, solid- liquid extraction, adsorption, gas absorption and membrane separation.

CHE 422 - Chemical Reaction Engineering

An introduction to the fundamentals of chemical reaction engineering, chemical kinetics and their mathematical description; the behavior, analysis and design of batch, semi-batch. Continuously stirred tank reactors and tubular reactors. The course also includes a description of non-isothermal and non-homogeneous systems; and an introduction to heterogeneous catalytic reactions and catalyzed bed reactors.

CHE 423 - Chemical Process Industries

This course serves as an introduction to the practice of chemical engineering. Specifically, it deals with the unit processes and operations involved in selected chemical industries.

CHE 424L - Chemical Engineering Laboratory 1

A laboratory course to investigate various theories encountered in momentum transfer, heat transfer and evaporation. This will also serve as a venue for the discussion of topics not included in the lecture involving solids handling and separation.

CHE 425 - Chemical Engineering Research 1

This course is a preparation to the application of the general concepts learned about the basic sciences leading to chemical engineering. It covers the basic discipline of starting up a research of interest by the students and setting up the methodologies pertinent to the effective operation of the research thesis.

CHE 427 - Safety in the Process Industry

Covers all the aspects of safety in relation to the industrial field including government regulations and audit and inspection standards that will familiarize the student on the various aspects of safety in the industrial arena.

GE 301 - Engineering Economy

Concepts of the time value of money and equivalence; basic economy study methods; decisions under certainty; decisions recognizing risk; and decisions admitting uncertainty.

CHE 500 - Industry Immersion

A 240-hours practicum in a relevant work environment

CHE 426L - Industrial Process Laboratory

No description yet. To be offered first time 2nd Term AY 2016-2017. Still drafting the syllabus.

CHE 511 - Equipment Design

This course is expected to complement the Plant Design course in the preparation of the design project. It includes equipment design in industrial plants, with emphasis on short-cut methods; piping system, pumps, pressure vessels, mass and heat transfer equipment, materials handling.

CHE 512 - Introduction to Particulate Technology

This course is intended to provide background material in particle technology, focusing on characterization, behavior, production, separation, and modeling of particulate systems and surveying engineering processes that involve particulates and powders. Multiphase transport phenomena and fluidization are also discussed.

CHE 513 - Biochemical Engineering

This course deals with the processing of biological materials and processing using biological agents such as cells and enzymes.

CHE 514L - Chemical Engineering Laboratory 2

This subject is a continuation of Chemical Engineering Laboratory I. The course covers mainly laboratory experiments in Mass Transfer Operations such as diffusion, distillation, humidification, drying etc. and experiments in reaction kinetics using a continuous stirred tank reactor (CSTR) and a plug flow tubular reactor. Experiments in kinetics are included in this subject since there is no separate laboratory course for Reaction Kinetics. Experiments in Process Control are also performed especially for those not offering a separate laboratory subject in Process Control.

CHE 515 - Chemical Engineering Research 2

This course is a continuation and final term of an innovative design, theoretical or experimental research on a selected Chemical Engineering or related topic within the confines of the department's and student's resources under the guidance and supervision of a qualified faculty research adviser. Students meet with the faculty research adviser for updates and consultation.

CHE 516 Process Dynamics and Control

This course combines the mathematical, physical and chemical concepts for application to process simulation and control. This is an introductory part for process control design and analysis. Whenever appropriate, MATLAB is used to demonstrate the behavior of the control system.

CHE 516L - Process Dynamics and Control (Laboratory)

This laboratory course investigates and applies the various theories encountered in Process Dynamics and Control Lecture using laboratory equipment and simulation software.

CHE 517 - Computer Applications in Chemical Engineering

This course deals exposes the student to computational and simulation software relevant to chemical engineering.

CHE 501 - Chemical Engineering Elective 1(Food Processing Technology)

The course covers an overview of the different processes involved in food manufacture covering the handling and sourcing of raw materials, process parameters, manning requirements, finished products handling and limitations inherent to each type of food product. It Includes meat processing, canned goods, baked products, dairy products and all types of beverages. It also includes plant visits to enhance learning

GE 302 - Engineering Management

Decision-making; the functions of management; managing production and service operations; managing the marketing function; and managing the finance function.

CHE 521 - Chemical Engineering Plant Design

This is the capstone ChE course which utilizes the basic technical principles of chemical engineering (material balances, energy balances, transport phenomena, thermodynamics, kinetics, separations and unit operations) with practical elements of economics, along with principles of safety and environmental issues in the optimum design of an integrated chemical process plant.

CHE 510 - Quantitative Methods in Management

The course introduces the students to quantitative decision-making tools. It covers decision models for planning, decision-making, resource allocation, and control. More specifically, these models are discussed in the context of linear programming, transportation and assignment, network models, queuing and waiting times, project control, and inventory management. These models are applied in solving decision problems to improve the efficiency of operations

CHE 523 - Industrial Waste Management and Control

This course covers the study of the different Environmental Management Programs applied to industry. These includes: Environmental Impact Assessment, Environmental Management System, Risk assessment, Life Cycle Analysis, Pollution Prevention and waste treatment (wastewater, air pollutants, solid and hazardous waste)

CHE 524 - Field Trips and Seminars

This course deals with a series of lectures and seminars on selected topics that are highly relevant to chemical engineering but are not covered in any of the other formal courses. It covers recent advances in chemical engineering. Visits to industrial plants are also conducted during the term.

CHE 525 - Laws and Ethics for Chemical Engineers

The course offers discussion on the relevant national laws on the professional practice in the Philippines, chemical engineering profession, contracting, project implementation, environment and safety, investments and setting of enterprises in the Philippines. It also covers discussion on ethical standards for chemical engineers.

CHE 502 - Chemical Engineering Elective 2(Pharmaceuticals)

The course covers the different types of pharmaceutical products and the processes involved in their manufacture including raw materials, processing parameters and finished products handling. Familiarization on the effects of the different types of products and types of packaging used will be covered.

CHE 503 - Chemical Engineering Elective 3(Fundamental Principles of Packaging)

This course will introduce students to the subject of packaging by examining what packaging is used for and what it does for the product and the user, both within its broad social and economic context and its more specific functional and aesthetic context. Emphasis is placed on understanding product properties and the different and sometimes conflicting requirements and expectations at each stage of the life of the product, and thus deriving packaging properties to meet these requirements and expectations. Factors which affect the safety and legality of packed products are considered, along with ways of ensuring compliance.

CHE 600 - Chemical Engineering Integrated Course

This is a capstone course to be taken only by UST B.S.Ch.E. candidates for graduation. It summarizes the performance of the graduating student since his/her first semester of enrolment at the University of Santo Tomas through the development of a personal e-portfolio. The graduating student must include artifacts in the portfolio which will demonstrate his/her achievement of the UST B.S.Ch.E. Program Outcomes. The course shall also test the student knowledge and ability for problem solving through a series of online diagnostic drills and proctored preliminary and final exams as a means of diagnosing readiness for the Chemical Licensure Examination.