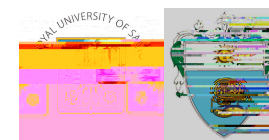


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Bachelor of Science in Chemistry – Course Prospectus with Descriptions

Effective Academic Year 2015-2016

First Year – First Term / Semester

Abbreviation	Title	Lec. Units	Lab. Units	Pre-Requisites
CHEM 101	General Inorganic Chemistry I	3	0	None
CHEM 101L	General Inorganic Chemistry I (Laboratory)	0	2	None
ENG 1	Introduction to College English	3	0	None
MATH 101	College Algebra	3	0	None
MATH 102	Trigonometry	3	0	None
PHIST	Philippine History	3	0	None
PSY 1	General Psychology	3	0	None
RC	Rizal Course	3	0	None
THY 1	Contextualized Salvation History	3	0	None
PE	Physical Education 1	(2)	0	None
ROTC	Military Science I (Reserve Officers' Training Corps)	(3)	0	None



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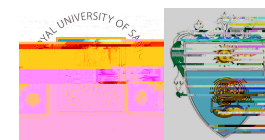
Bachelor of Science in Chemistry – Course Prospectus with Descriptions

PSY 1 GENERAL PSYCHOLOGY

Description A three-unit course that deals with the fundamental concepts and principles in the study of human behavior and mental processes. It tackles psychological concepts, theories, and/or principles, such as the neurological basis of behavior, human development, sensation, perception, motivation, learning, and others. At the end of the course, students who major in psychology are expected to be able to have an overview of the biopsychosocial model in the scientific study of human behavior.

RC RIZAL COURSE

Description This course discusses the life, ideas and ideals of Jose Rizal. It aims to provide an in-



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HUM 1 ART, MAN, AND SOCIETY

Description The course develops in the students the competence in acquiring a comprehensive knowledge of the Humanities through immersion in both classical and contemporary art forms, not only in the passive sense of mere appreciation but also in the more active sense of critical appraisal.

It is focused on a comprehensive study of the Humanities through the intensive analyses of the interrelationships and intersections between the arts, the individual man or woman, and the larger community to which he or she belongs. Although the Western canon and its aesthetics will be tackled, along with the traditional art forms, its main concern is on Filipino artistic expressions, both traditional and contemporary, and Philippine cultural practices.

Students are expected to write a critique of any Filipino art form/cultural practice using the concepts discussed in any of the theoretical and critical essays taken up during the course of the term. They are also expected to demonstrate their knowledge of the art forms in producing class projects that are multimedia and performative in orientation.

LIT 102A PHILIPPINE LITERATURES

Description The course is designed to develop among students an awareness, appreciation, and critical view of the depth and breadth of our country's literature in order to foster among them the desire for truth, love for country and nature, and respect for peoples and cultures, which will eventually constitute a competent, compassionate, and committed Thomasian.

The course is focused on repr



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SA SOCIOLOGY AND ANTHROPOLOGY

Description The course introduces the discipline of Sociology and Anthropology as social sciences, as professions and as ways of life.

It explores selected fundamental concepts in the study of Philippine society and culture and its relation to the global world using basic theories, research methodologies, and substantive issues defining the scientific practices of Sociology and Anthropology.

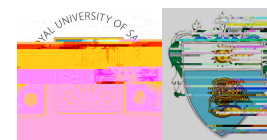
The course exposes students to the unique use of the sociological imagination and anthropological perspective in understanding the world they live in so that they may find it useful, relevant, practical, and meaningful to their lives, no matter what life choices and trajectories they would take or endure in the future.



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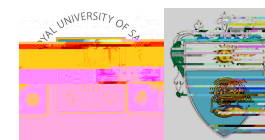
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FIL 1



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Bachelor of Science in Chemistry – Course Prospectus with Descriptions

MICR 201 GENERAL MICROBIOLOGY WITH INDUSTRIAL APPLICATIONS

Description This course is designed to introduce students to areas and concepts involved in Microbiology and the application of Microbial Biotechnology. This course will strengthen the students' knowledge of microbiology and give them a better understanding of the role of microbes in man and the environment.

The lecture course will focus on a vast array of applications in microbiology. It will discuss different groups of microbial life, their physiological growth and biotechnological by-products as well as various factors affecting their growth and production. Discussions will also cover the fundamentals of microbial genetics and genetic engineering.

This course will be conducted as a 2-hour lecture class with a separate 3-hour laboratory activities as an adjunct to the lecture discussion. The hands-on experiments will focus on basic microbiology, food and industrial microbiology.

MICR 201L GENERAL MICROBIOLOGY WITH INDUSTRIAL APPLICATIONS (LABORATORY)

Description This course is a hands-on learning course on the core concepts and techniques in microbiology and the application of Microbial Technology. Experiments that will be conducted will commence with the study of micro-organisms, particularly bacteria, with emphasis on the techniques for their isolation, cultivation, preservation, characterization, and identification. Techniques in quantifying these organisms as well as their control will also be conducted. Practical experiments on the applications of selected micro-organisms will be undertaken at the latter part of the course.

PHL 2 LOGIC

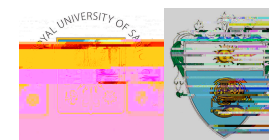
Description This course exposes the students with the fundamental concepts and principles in the study of human behaviour, sensory modalities, perception, consciousness, and motivation, emotion, stress and health and personality theories

This course provides the students with a broad, eclectic understanding on the importance of understanding human behaviour by addressing the wide range of issues and problems encountered in everyday life.

Each student is expected to apply basic psychological concepts and principles in understanding and enhancing human behaviour.

PHYS 103 MECHANICS AND MOLECULAR FORCES

Description Physics 103 covers fundamental concepts in mechanics and mechanical properties of matter.



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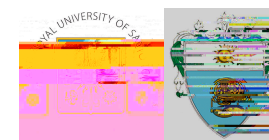
PHYS 103L MECHAN



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Second Year – Second Term / Semester

Abbreviation	Title	Lec. Units	Lab. Units	Pre-Requisites
CHEM 202	Organic Chemistry II	3	0	CHEM 201, CHEM 201L
CHEM 202L	Organic Chemistry II (Laboratory)	0	2	CHEM 201, CHEM 201L
CHEM 301	Analytical Chemistry I	3	0	CHEM 102, CHEM 102L
CHEM 301L	Analytical Chemistry I (Laboratory)	0	2	CHEM 102, CHEM 102L
ENG 4	Oral Communication in Context	3	0	ENG 1, ENG 2, ENG 3
FIL 2		3	0	FIL 1
MATH 110B	Mathematical Analysis III	4	0	MATH 101, MATH 102, MATH 108B, MATH 109B
PHYS 203	Heat, Electricity, and Magnetism	3	0	PHYS 103, PHYS 103L
PHYS 203L	Heat, Electricity, and Magnetism (Laboratory)	0	1	PHYS 103, PHYS 103L
PHL 5	Christian Ethics	3	0	THY 1, THY 2
PE	Physical Education 4	(2)	0	
NSTP	Literacy Training Service (LTS) I Civic Welfare Training Service (CWTS) I			



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CHEM 202L ORGANIC CHEMISTRY II (LABORATORY)

Description This is a comprehensive course on preparative organic chemistry; the structure and reactivity of organic compounds; a mechanistic orientation is given in preparation to understanding biochemical purposes, industrial and biological applications of organic reactions and their products are included.

CHEM 301 ANALYTICAL CHEMISTRY I

Description This is a three-unit course that covers the principles of chemical equilibrium and its applications to various equilibrium systems, namely, slightly soluble solids, acid-base, redox, distribution and complex equilibria. The use of these principles to qualitative analysis supported with mathematical calculations and analyses are discussed.

CHEM 301L ANALYTICAL CHEMISTRY I (LABORATORY)

Description This is a two-unit laboratory course which covers the principles of chemical equilibrium and its applications to various equilibrium systems involving inorganic cations and anions. The use of these principles to qualitative analysis is discussed. Separation and identification of ions in aqueous solutions are the major activities in the laboratory – these are individual hands-on experiments.

ENG 4 ORAL COMMUNICATION IN CONTEXT

Description The course aims to develop students' speaking skills for effective communication in diverse contexts.

It likewise endeavors to enhance their listening skills in carrying out meaningful transactions needed in real communication situations making them communicatively competent.

FIL 2

Description

Filipino 2 aims to develop the proficiency of students in critical reading and academic writing that will guide them to do meaningful researches related to their discipline using the Filipino language.



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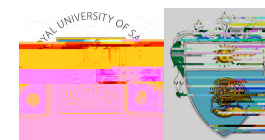
College of Science

Bachelor of Science in Chemistry – Course Prospectus with Descriptions

Effective Academic Year 2015-2016

Third Year – First Term / Semester

Abbreviation	Title	Lec. Units	Lab. Units	Pre-Requisites
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CHEM 302 ANALYTICAL CHEMISTRY II (LABORATORY)

Description This course is the laboratory component of Instrumental analysis lecture course (Chem 302 lec) and presupposes a certain level of understanding in the theory of instrumental analytical chemistry. This laboratory course would include experiments on electroanalytical, chromatographic, and optical methods. The emphasis of this course is to apply much of the theory students were exposed to in Chem 302 lec to assessing relevant and timely chemical issues that rely on the effective use of modern analytical instrumentation.

CHEM 402 PHYSICAL CHEMISTRY I

Description This the first course in a two-semester physical chemistry sequence. This course provides a background in fundamental chemical thermodynamics and its application to physical and chemical equilibrium systems. It includes the following topics: gas laws, laws of thermodynamics; thermochemistry; chemical equilibrium and phase equilibrium.

CHEM 601 GENERAL BIOCHEMISTRY

Description A 3-unit one-semester course on the biochemistry of the biomolecules designed for BS Chemistry majors. The course deals with the different types of cells, the organelles and their fractionation; the structures and interactions of biomolecules that give rise to supramolecular structures and their corresponding functions; enzyme chemistry, kinetics and regulation; structure and dynamics of cell membranes; and an introduction to some aspects of molecular biology, recombinant DNA technology, and the methods that biotechnology uses to manipulate DNA.

CHEM 601L GENERAL BIOCHEMISTRY (LABORATORY)

Description A 2-unit one-semester laboratory course on the isolation and characterization of the biomolecules designed for BS Chemistry majors. The course consists of experiments that teach students the techniques and methods used in the extraction, isolation, purification, characterization and quantitative determination of the primary metabolites found in biological samples namely



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Effective Academic Year 2015-2016

Third Year – Second Term / Semester

Abbreviation	Title	Lec. Units	Lab. Units	Pre-Requisites
CHEM 103	Inorganic Chemistry	3	0	CHEM 102, CHEM 102L
CHEM 303	Advanced Analytical Chemistry	2	0	CHEM 302, CHEM 302L
CHEM 303L	Advanced Analytical Chemistry (Laboratory)	0	2	CHEM 302, CHEM 302L
CHEM 307L	Chemometrics (Laboratory)	0	1	CHEM 302, CHEM 302L
CHEM 403	Physical Chemistry II	3	0	CHEM 402
CHEM 403L	Physical Chemistry II (Laboratory)	0	2	CHEM 402
CHEM 503	Professional Exposure, Jurisprudence, and Practicum	3	0	CHEM 202, CHEM 202L, CHEM 302, CHEM 302L
CHEM 602	Advanced Biochemistry	3	0	CHEM 601, CHEM 601L
CHEM 602L	Advanced Biochemistry (Laboratory)	0	1	CHEM 601, CHEM 601L
THS I	Thesis I	2	0	CHEM 302, CHEM 402, CHEM 402L, CHEM 601, ENG 3
TOTAL		16	6	

CHEM 103 INORGANIC CHEMISTRY

Description This course is designed for chemistry majors that deal with important concepts of inorganic chemistry. It involves a comprehensive review of the atomic structure, the relation of atomic and molecular structure to chemical and physical properties and the study of the periodicity of the elements. The course is intended to expand the student's knowledge base in inorganic chemistry by providing new ways of understanding bonding, and reactivity. It will likewise introduce the crystalline solid state and the magnetic and spectral properties of coordination compounds.

CHEM 303 ADVANCED ANALYTICAL CHEMISTRY

Description



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CHEM 602 ADVANCED BIOCHEMISTRY

Description A 3-unit one-semester course on Advanced Biochemistry designed for BS Chemistry majors. The course deals with the thermodynamic concepts applied to specific biochemical topics; bioenergetics and metabolism of carbohydrates, lipids, and compounds of nitrogen; other aspects of carbohydrate metabolism, such as glycogen metabolism, gluconeogenesis, pentose phosphate pathway, glyoxylate cycle; integrated metabolic pathways. The flow of biological information (including regulation, mutagenesis, and repair) and photosynthesis will also be discussed.

CHEM 602L ADVANCED BIOCHEMISTRY (LABORATORY)

Description A 1-unit one-semester laboratory course on Advanced Biochemistry designed for BS Chemistry majors. The course deals with the analysis of proteins and nucleic acids. Students are required to undertake a mini-research project of their own choosing, from the preparation of a research proposal to experimentation to presentation of results in a colloquium.

THS 1 THESIS I

Description



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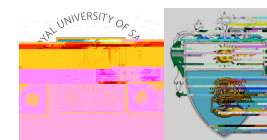
SCL 3 THE SOCIAL TEACHINGS OF THE CHURCH

Description The course is an in-depth thematic study of Catholic social thought as found in the Gospel, in the tradition of primitive Christianity, the Fathers of the Church, the official documents of the social teachings of the Church and the lived experience of peoples.

As Mother and Teacher, the Church keeps alive in the personal and collective memory of the people the saving mission of Christ, who became all things to all human beings except sin, and its implication to the final destiny of the human person. She proposes individual and societal life witnessing in the very real experiences of the human person and the communities of peoples in the socio-cultural, economic, political, technological and ecological environments.

As a true disciple of the Risen Christ and moved by the Spirit, the human person is empowered and challenged to bring about social transformation and development by practical competent acts of compassion and commitment to truth in love.

THS 2



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Bachelor of Science in Chemistry – Course Prospectus with Descriptions

Effective Academic Year 2015-2016

Fourth Year – Second Term / Semester

Abbreviation

Title

