GE1353: SCIENCE, BUDDHISM, AND LIFE

Effective Term
Semester A 2024/25

Part I Course Overview

Course Title
Science, Buddhism, and Life

Subject Code
GE - Gateway Education
Course Number
1353

Academic Unit
Chemistry (CHEM)

College/School
College of Science (SI)

Course Duration
One Semester

Credit Units
3

Level
B1, B2, B3, B4 - Bachelor's Degree

GE Area (Primary)
Area 3 - Science and Technology

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
Nil

Equivalent Courses
Nil

Exclusive Courses
Nil

Part II Course Details

Abstract

Science is an intellectual activity to investigate the natural world and its phenomena. More specifically, science is a systematic observation of natural events and conditions in order to (1) discover facts about them and to (2) formulate laws and principles based on these facts. Although science and religion are sometimes in conflict, Buddhism is found to be unusually science-friendly. Buddhism is not only known as a religion but a philosophy and a way of life. Many famous scientists and philosophers including Albert Einstein, Charles Darwin, and Bertrand Russell, also suggested that many elements of Buddhism are considered scientific and are not outside the domain of science. This course aims to introduce the scientific approach to knowledge generation and the basic teaching of Buddha. The students will then be guided into critical analysis of the conflict and compatibility between science and Buddhism in different aspects. Importantly, students will learn to apply scientific and Buddhist philosophies to daily life and modern issues.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Explain the scientific approach to knowledge generation	20	x	x	
2	Identify the basic teaching of Buddha	20	x	x	
3	Compare and contrast the scientific and Buddhist approach to rationalize phenomena	30		x	x
4	Apply scientific and Buddhist philosophies to daily life and modern issues	30		x	x

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Learning and Teaching Activities (LTAs)

	LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures	Students will engage in interactive lectures that explore the basic ideas in science and Buddhism.	1, 2	2 hrs/week
2	In-class and Online Discussions	Students will participate in interactive discussion and/or debate on the conflict and compatibility between science and Buddhism.	1, 2, 3	1 hr/week

3	Group Project	Students will collaborate on interactive poster and video projects aimed at deepen knowledge on Buddhism and its relationship with modern scientific ideas.	1, 2, 3, 4	
4	Critique Writing	Students will participate in writing a critique on a selected Buddhist scripture, facilitating critical thinking.	1, 2, 3, 4	
5	Buddhist Seminar/ Guest Lecture	Students will attend a Buddhist talk/seminar or a guest lecture.	2, 3, 4	

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	In-class and Online Discussions	1, 2, 3, 4	20	
2	Group Project	3, 4	20	
3	Critique Writing	3, 4	20	
4	Buddhist Seminar / Guest Lecture Written Report	1, 2, 3, 4	10	

Continuous Assessment (%)

70

Examination (%)

30

Examination Duration (Hours)

1

Additional Information for ATs

Starting from Semester A, 2015-16, students must satisfy the following minimum passing requirement for courses offered by CHEM:
"A minimum of 40% in both coursework and examination components."

Assessment Rubrics (AR)

Excellent (A+, A, A-)

Student completes all the assessment tasks/activities (in-class and online discussions, critique writing, group presentations, seminar written report, and examination) and demonstrates excellent grasp of the important concepts to various aspects of the topic covered in this course, and can apply these concepts to solve problems with clear and logical explanations. Strong evidence of superior writing and presentation skills.

Good (B+, B, B-)

Student completes all assessment tasks/activities and can describe and explain the important concepts to several aspects of the topic covered in this course. Shows, to some extent, the ability to use concepts for rationalization and to solve problems. Displays effective writing and presentation skills.

Fair (C+, C, C-)

Student completes most of the assessment tasks/activities and can describe some key elements on the topics covered in the course. Shows limited ability to apply concepts, and competent writing and presentation skills.

Marginal (D)

Student has little participation and interest, and demonstrates limited ability in analysis.

Failure (F)

Student has no participation, interest or original thought.

Part III Other Information

Keyword Syllabus

Science: logics; observations; hypotheses; experiments; theories; models; laws; Occam’ s razor; scope of investigation; predictions.
Buddhism: impermanence; dissatisfactory; no-self; dharma; karma; the Four Noble Truths; the Eightfold Path; the Five Aggregates; the Twelve Links; dependent arising; Nirvana; meditation.

Reading List

Compulsory Readings

	Title
1	Philosophy of Science: Very Short Introduction (ISBN-13: 978-0198745587)
2	An Introduction to Buddhism: Teachings, History and Practices (ISBN-13: 978-0521676748)

Additional Readings

	Title
1	Buddhism and Science (ISBN-13: 978-0231123358)
2	Buddhism: Introducing the Buddhist Experience (ISBN-13: 978-0199861873)
3	The Heart Sutra explained (ISBN-13: 978-0887065903)
4	The Diamond Sutra (ISBN-13: 978-1582432564)
5	The Fundamental Teachings of Early Buddhism: A Comparative Study Based on the Sutranga Portion of the Pali Samyutta-Nikaya and the Chinese Samyuktagama (ISBN-13: 978-3447042321)

Annex (for GE courses only)

A. Please specify the Gateway Education Programme Intended Learning Outcomes (PILOs) that the course is aligned to and relate them to the CILOs stated in Part II, Section 2 of this form:

Please indicate which CILO(s) is/are related to this PILO, if any (can be more than one CILOs in each PILO)

PILO 1: Demonstrate the capacity for self-directed learning

1, 2, 3, 4

PILO 2: Explain the basic methodologies and techniques of inquiry of the arts and humanities, social sciences, business, and science and technology

1, 2

PILO 3: Demonstrate critical thinking skills

3, 4

PILO 4: Interpret information and numerical data

1, 2

PILO 5: Produce structured, well-organised and fluent text

3, 4

PILO 6: Demonstrate effective oral communication skills

3, 4

PILO 7: Demonstrate an ability to work effectively in a team

3, 4

PILO 9: Value ethical and socially responsible actions

4

PILO 10: Demonstrate the attitude and/or ability to accomplish discovery and/or innovation

3, 4

B. Please select an assessment task for collecting evidence of student achievement for quality assurance purposes. Please retain at least one sample of student achievement across a period of three years.

Selected Assessment Task

Group project and presentation on a selected Buddhist doctrine and its relationship with modern scientific ideas.