

Course Outcomes – Program Outcomes (COPO) Mapping

Program Outcomes (PO): B.Sc. (H) Zoology

Learning Outcome -based Curriculum Framework (LOCF)

The LOCF approach is envisioned to provide a focused, outcome-based syllabus at the undergraduate level with an agenda to structure the teaching-learning experiences in a more student-centric manner.

ABBREVIATIONS / NOMENCLATURE

Sno.	Nomenclature	Description	Aggregate Courses
1	PO	Program Outcome	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9
2	CO	Course Outcome	CO1, CO2, CO3,CO10
3	CC	Core Courses	CC1, CC2, CC3,CC14
4	DSE	Discipline Specific Electives	DSE1, DSE2, DSE3, DSE4
5	GE	General Electives	GE1, GE2, GE3, GE4,

Sno.	Program Outcomes (PO): B.Sc. (H) Zoology	Statements
1.	PO1	Students enrolled in B.Sc. (Hons.) degree program in Zoology will study and acquire complete knowledge of disciplinary as well as allied biological sciences. They should possess expertise which will provide them competitive advantage in pursuing higher studies from India or abroad; and seek jobs in academia, research or industries.
2.	PO2	Students should be able to identify, classify and differentiate diverse chordates and non-chordates based on their morphological, anatomical and systemic organization. They will also be able to describe economic, ecological and medical significance of various animals in human life. This will create a curiosity and awareness among them to explore the animal diversity and take up wild life photography or wild life exploration as a career option.
3.	PO3	The procedural knowledge about identifying and classifying animals will provide students professional advantages in teaching, research and taxonomist jobs in various government organizations; including Zoological Survey of India and National Parks/Sanctuaries.
4.	PO4	Acquired practical skills in biotechnology, biostatistics, bioinformatics and molecular biology, genetics, qualitative and quantitative microscopy, Enzymology and analytical Biochemistry. can be used to pursue a career as a scientist in India or abroad. These methodologies will provide an extra edge to our students, who wish to undertake higher studies.
5.	PO5	In-depth knowledge and understanding about comparative anatomy and developmental biology of various biological systems; and learning about the organisation, functions, strength and weaknesses of various systems will let students critically analyse the way evolution has shaped these traits in the human body.
6.	PO6	Students undertaking skill enhancement courses would help them in starting their own ventures and generating self-employment making them successful entrepreneurs.
7.	PO7	Acquired skills used in clinical and research laboratories will provide them opportunity to work in diagnostic or research laboratories.

8.	PO8	Deep understanding of different physiological systems and methods available to measure vital physiological parameters and to comprehend the mechanism behind occurrence of different life-threatening diseases via laboratory examination, assessment of basic physiological functions by interpreting physiological charts will help to find their career options.
9.	PO9	Students undertaking wildlife management courses would gain expertise in identifying key factors of wildlife management and be aware about different techniques of estimating, remote sensing and Global positioning of wildlife. This course will motivate students to pursue a career in the field of wildlife conservation and management.

Course Outcomes (CO): B.Sc. (H) Zoology

SEMESTER 1: CC1: Non-Chordates I: Protists to Pseudocoelomates			
Unique Paper Code	Name of the Paper	Course Outcome: CO	Statements
32231101	CC1: Non-Chordates I: Protists to Pseudocoelomates	CO1	Students will learn about the importance of systematics, taxonomy and structural organization of animals.
		CO2	Appreciate the diversity of non-chordates living in varied habit and habitats.
		CO3	Understand evolutionary history and relationships of different non-chordates through functional and structural affinities.
		CO4	Critically analyse the organization, complexity and characteristic features of non-chordates making them familiarize with the morphology and anatomy of representatives of various

			animal phyla.
		CO5	Comprehend the economic importance of non-chordates, their interaction with the environment and role in the ecosystem.
		CO6	Enhance collaborative learning and communication skills through practical sessions, team work, group discussions, assignments and projects.

CC2: PRINCIPAL OF ECOLOGY

UPC: 32231102	CC2: Principal of Ecology	CO1	Demonstrate an understanding of key concepts in ecology with emphasis on historical perspective, role of physical factors and concept of limiting factors.
		CO2	Comprehend the population characteristics, dynamics, growth models and interactions.
		CO3	Understand the community characteristics, ecosystem development and climax theories.
		CO4	Know about the types of ecosystems, food chains, food webs, energy models, and ecological efficiencies.
		CO5	Apply the basic principles of ecology in wildlife conservation and management.
		CO6	Inculcate scientific quantitative skills, evaluate experimental design, read graphs, and analyse and use information available in scientific literature.

GE-1 (FOR HONOURS): Insect Vector and Disease

32235908	GE-1: Insect Vector and Disease	CO1	Identify different insects and classify them based on their morphology and behaviour
		CO2	Describe the host-pathogen relationships and the role of the host reservoir on transmission of parasite
		CO3	Explain various modes of transmission of parasite by insect vectors
		CO4	Recognize various possible modern tools and methodologies for laboratory diagnosis, surveillance and treatment of diseases.
		CO5	Define various terms related to insect transmitted diseases such as vectorial capacity, mechanical and biological transmission, host specificity etc. ·
		CO6	Identify the risk groups and characterize them on the basis of exposure risk · Explain control methods of insect vector diseases including spreading awareness on public health programs and mitigating insect borne diseases ·
		CO7	Employ the use of advanced management strategies in disease control with respect to parasite evolution

COPO MAPPING

	SEMESTER I: COPO MAPPING
Papers	Program Outcome: PO

	Course Outcome: CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CC1	CO1	✓	✓							
	CO2	✓	✓							
	CO3	✓	✓							
	CO4	✓	✓	✓						
	CO5	✓	✓							
	CO6	✓	✓				✓			
	CC2	CO1	✓		✓					
CO2		✓		✓						
CO3		✓		✓						
CO4		✓		✓						
CO5		✓		✓						✓
CO6		✓				✓		✓		
GE1	CO1	✓	✓							
	CO2	✓	✓							
	CO3	✓	✓					✓		
	CO4	✓	✓							
	CO5	✓	✓							
	CO6	✓	✓							
	CO7	✓		✓						✓

SEMESTER II

CC3: Non-chordates II: Coelomates

Unique Paper Code	Name of the Paper	Course Outcome: CO	Statements
32231201	CC3: Non-chordates II: Coelomates	CO1	Student should be able to learn about the importance of systematics, taxonomy and structural organization of animals.,
		CO2	Appreciate the diversity of non-chordates living in diverse habit and habitats.
		CO3	Understand evolutionary history and relationships of different non-chordates through functional and structural affinities. .
		CO4	Critically think about the organization, complexity and characteristic features of non-chordates. .
		CO5	Getting familiarized with the morphology and anatomy of representatives of various animal phyla.
		CO6	Comprehend the economic importance of non-chordates, their interaction with the environment and role in the ecosystem.
		CO7	Enhance collaborative learning and communication skills through practical sessions, team work, group discussions, assignments and projects.
CC4: Cell Biology			
32231202	CC4: Cell Biology	CO1	Understand fundamental principles of cell biology
		CO2	Explain structure and functions of cell organelles involved in diverse cellular processes.
		CO3	Appreciate how cells grow, divide, survive, die

			and regulate these important processes.
		CO4	Comprehend the process of cell signalling and its role in cellular functions.
		CO5	Have an insight of how defects in functioning of cell organelles and regulation of cellular processes can develop into diseases. Learn the advances made in the field of cell biology and their applications.
GE2 (FOR HONOURS): Human Physiology			
32235907	GE2: Human Physiology	CO1	Know the principles of normal biological function in human body.
		CO2	Outline basic human physiology and correlate with histological structures.
		CO3	Understand how animals maintain an internal homeostatic state in response to changes in their external environment.

COPO MAPPING

SEMESTER II: COPO MAPPING										
Papers	Program Outcome: PO									
	Course Outcome: CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CC3	CO1	✓	✓	✓						
	CO2	✓	✓	✓						
	CO3	✓	✓	✓						
	CO4	✓	✓	✓						
	CO5	✓	✓	✓						
	CO6	✓	✓	✓						
	CO7	✓	✓	✓						

CC4	CO1	✓			✓					
	CO2	✓			✓					
	CO3	✓						✓		
	CO4	✓				✓		✓		
	CO5	✓				✓		✓		
GE2	CO1	✓						✓	✓	
	CO2	✓						✓	✓	
	CO3	✓						✓	✓	

SEMESTER 3:

CC5: Diversity of Chordates

Unique Paper Code	Name of the Paper	Course Outcome: CO	Statements
32231301	CC5: Diversity of Chordates	CO1	Understand different classes of chordates, level of organization and evolutionary relationship between different subphyla and classes, within and outside the phylum.
		CO2	Study about diversity in animals making students understand about their distinguishing features.
		CO3	Study about diversity in animals making students understand about their distinguishing features.
		CO4	Appreciate similarities and differences in life functions among various groups of animals in Phylum Chordata.
		CO5	Comprehend the circulatory, nervous and skeletal system of chordates.

		CO6	Know about the habit and habitat of chordates in marine, freshwater and terrestrial ecosystems.
CC6: Physiology: Controlling and Coordinating system			
32231302	CC6: Physiology: Controlling and Coordinating System	CO1	Know the basic fundamentals and understand advanced concepts so as to develop a strong foundation that will help them to acquire skills and knowledge to pursue advanced degree courses.
		CO2	Comprehend and analyze problem-based questions.
		CO3	Recognize and explain how all physiological systems work in unison to maintain homeostasis in the body and use of feedback loops to control the same
		CO4	Learn an integrative approach to understand the interactions of various organ systems resulting in the complex overall functioning of the body. Synthesize ideas to make connection between knowledge of physiology and real world situations, including healthy life style decisions and homeostatic imbalances
		CO5	Know the role of regulatory systems viz. endocrine and nervous systems and their amalgamation in maintaining various physiological processes.
CC7: Fundamentals of Biochemistry			
32231303	CC7: Fundamentals of Biochemistry	CO1	Upon completion of the course, students should be able to gain knowledge and skill in the fundamentals of biochemical sciences, interactions and interdependence of physiological and biochemical processes

		CO2	Get exposed to various processes used in industries and gain skills in techniques of chromatography and spectroscopy.
		CO3	Demonstrate foundation knowledge in biochemistry; synthesis of proteins, lipids, nucleic acids, and carbohydrates; and their role in metabolic pathways along with their regulation.
		CO4	Know about classical laboratory techniques, use modern instrumentation, design and conduct scientific experiments, and analyze the resulting data..
		CO5	Be knowledgeable in proper procedures and regulations in handling and disposal of chemicals.

**GE 3: For Honours
Food Nutrition and Health**

32235906	GE3: Nutrition and Health	Food and	CO1	Have a better understanding of the association of food and nutrition in promoting healthy living.
			CO2	Think more holistically about the relationship between nutrition science, social and health issues.
			CO3	Move on to do post-graduation studies and can apply for jobs as food safety officers, food analysts, food inspectors, food safety commissioners or controllers for jobs in organizations like FSSAI.
			CO4	Specialize in various fields of nutrition

COPO MAPPING

SEMESTER III: COPO MAPPING										
Papers	Program Outcome: PO									
	Course Outcome: CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CC5	CO1	✓	✓							
	CO2	✓	✓							
	CO3	✓	✓							
	CO4	✓	✓	✓						
	CO5	✓	✓						✓	
	CO6	✓	✓							✓
	CC6	CO1	✓		✓					
CO2		✓						✓	✓	
CO3		✓						✓	✓	
CO4		✓						✓	✓	
CO5		✓						✓	✓	
CC7	CO1	✓			✓			✓		
	CO2	✓					✓	✓		
	CO3	✓					✓			
	CO4	✓					✓	✓		
	CO5	✓					✓	✓		
GE3	CO1	✓							✓	
	CO2	✓						✓	✓	
	CO3	✓					✓	✓		
	CO4	✓					✓	✓		

SEMESTER IV:

CC8: Comparative Anatomy of Vertebrates

Unique Paper Code	Name of the Paper	Course Outcome: CO	Statement
32231401	CC8: Comparative Anatomy of Vertebrates	CO1	Upon completion of the course, students should be able to: • Explain comparative account of the different vertebrate systems • Understand the pattern of vertebrate evolution, organisation and functions of various systems
		CO2	Learn the comparative account of integument, skeletal components, their functions and modifications in different vertebrates. • Understand the evolution of heart, modification in aortic arches, structure of respiratory organs used in aquatic, terrestrial and aerial vertebrates; and digestive system and its anatomical specializations with respect to different diets and feeding habits.
		CO3	Learn the evolution of brain, sense organs and excretory organsto a complex, highly evolved form in mammals.
		CO4	Learn to analyze and critically evaluate the structure and functions of vertebrate systems, which helps them to discern the developmental, functional and evolutionary history of vertebrate species.
		CO5	Understand the importance of comparative vertebrate anatomy to discriminate human biology.

CC9: Physiology: Life Sustaining Systems

32231402	CC9: Physiology: Life Sustaining Systems	CO1	Students will have a clear knowledge of basic fundamentals and understanding of advanced concepts so as to develop a strong foundation that will help them to acquire skills and knowledge to pursue advanced degree courses.
		CO2	Comprehend and analyse problem-based questions on physiological aspects.
		CO3	Recognize and explain how all physiological systems work in unison to maintain homeostasis in the body; and use of feedback loops to control the same.
		CO4	Learn an integrative approach to understand the interactions of various organ systems resulting in the complex overall functioning of the body.

CC10: Biochemistry of Metabolic Processes

32231403	CC10: Biochemistry of Metabolic Processes	CO1	Gain knowledge and skill in the interactions and interdependence of physiological and biomolecules
		CO2	Understand essentials of the metabolic pathways along with their regulation.
		CO3	Know the principles, instrumentation and applications of bioanalytical techniques.
		CO4	Get exposure to various processes used in industries.
		CO5	Become aware about classical laboratory techniques, use modern instrumentation, design and conduct scientific experiments and analyze the resulting data.

		CO6	Be knowledgeable in proper procedures and regulations in handling and disposal of chemicals
GE 4: For Honours			
Animal Cell Biotechnology			
33235901	GE 4: Animal Cell Biotechnology	CO1	Upon completion of the course, students will be able to: • Get a clear concept of the basic principles and applications of biotechnology.
		CO2	Know the basic techniques used in genetic manipulation helping them continue with higher studies in this field.
		CO3	Acquire knowledge of the basic principles, preparations and handling required for animal cell culture.
		CO4	Understand principles underlying the design of fermenter and fermentation process and its immense use in the industry.
		CO5	Design small experiments for successful implementation of the ideas and develop solutions to solve problems related to biotechnology keeping in mind safety factor for environment and society.
		CO6	Apply knowledge and skills gained in the course to develop new diagnostic kits and to innovate new technologies further in their career.
		CO7	Enhance their understanding of the various aspects and applications of biotechnology as well as the importance of bio-safety and ethical issues related to it.

COPO MAPPING

	SEMESTER IV: COPO MAPPING
Papers	Program Outcome: PO

	Course Outcome: CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CC8	CO1	✓	✓			✓				
	CO2	✓				✓			✓	
	CO3	✓				✓				
	CO4	✓	✓	✓						
	CO5	✓	✓			✓				
CC9	CO1	✓								
	CO2	✓						✓	✓	
	CO3	✓						✓	✓	
	CO4	✓						✓		
CC10	CO1	✓			✓					
	CO2	✓			✓			✓		
	CO3	✓			✓					
	CO4	✓			✓			✓		
	CO5	✓			✓			✓		
	CO6	✓			✓			✓		
GE4	CO1	✓			✓		✓			
	CO2	✓						✓		
	CO3	✓			✓			✓		
	CO4	✓			✓			✓		
	CO5	✓			✓			✓		
	CO6	✓			✓			✓		
	CO7	✓						✓	✓	

SEMESTER V**CC11: Molecular Biology**

Unique Paper Code	Name of the Paper	Course Outcome: CO	Statement
32231501	CC11: Molecular Biology	CO1	Students should be able to describe describe the basic structure and chemistry of nucleic acids, DNA and RNA
		CO2	Compare and contrast DNA replication machinery and mechanisms in prokaryotes and eukaryotes
		CO3	Elucidate the molecular machinery and mechanism of information transfer processes transcription and translation-in prokaryotes and eukaryotes
		CO4	Explain post-transcriptional modification mechanisms for the processing of eukaryotic RNAs
		CO5	Discuss general principles of transcription regulation in prokaryotes by exploring the structure and function of lactose and tryptophan metabolism operons
		CO6	Give an overview of gene expression regulation in eukaryotes
		CO7	Explain the significance of DNA repair mechanisms in controlling DNA damage
		CO8	Recognise role of RNAs (riboswitches, siRNA and miRNA) in gene expression regulation
		CO9	Demonstrate practical knowledge of raising, handling, maintenance and special features such as antibiotic resistance of a simple prokaryotic model organism, Escherichia

			coli.
		CO10	Quantitatively estimate concentration of DNA and RNA by colorimetric methods.
CC12: Principles of Genetics			
32231502	CC12: Principles of Genetics	CO1	Students will have a deeper understanding of the varied branches of the biological sciences like microbiology, evolutionary biology, genomics and metagenomics.
		CO2	Gain knowledge of the basic principles of inheritance.
		CO3	Analyse pedigree leading to development of analytical skills and critical thinking enabling the students to present the conclusion of their findings in a scientific manner.
		CO4	Know the mechanisms of mutations, the causative agents and the harmful impact of various chemicals and drugs being used in day to day life
		CO5	Find out the effects of indiscriminate use of various chemicals, drugs or insecticides in nature by studying their effect on various bacterial species in soil and water samples from different industrial or polluted areas.
DSE Course-: Discipline Specific Elective Course			
DSE1: Animal Behaviour and Chronobiology			
32237901	DSE1: Animal Behaviour and Chronobiology	CO1	Understand types of animal behaviour and their importance to the organisms.
		CO2	Enhance their observation, analysis, interpretation and documentation skills by taking short projects pertaining to Animal behaviour and chronobiology.
		CO3	Relate animal behaviour with other subjects such as Animal biodiversity, Evolutionary

			biology, Ecology, Conservation biology and Genetic basis of the behaviour.
		CO4	Understand various process of chronobiology in their daily life such as jet lag.
		CO5	Learn about the biological rhythm and their application in pharmacology and modern medicine
		CO6	Realize, appreciate and develop passion to biodiversity; andy will respect the nature and environment.
DSE 2: Immunology			
33237909	DSE 2: Immunology	CO1	Describe the basic mechanisms, distinctions and functional interplay of innate and adaptive immunity.
		CO2	Define the cellular/molecular pathways of humoral/cell-mediated adaptive responses including the role of Major Histocompatibility Complex
		CO3	Explain the cellular and molecular aspects of lymphocyte activation, homeostasis, differentiation, and memory
		CO4	Understand the molecular basis of complex, humoral (Cytokines and Complement) and cellular processes involved in inflammation and immunity, in states of health and disease
		CO5	Describe basic and state-of-the-art experimental methods and technologies.
		CO6	Integrate knowledge of each subsystem to see their contribution to the functioning of higher-level systems in health and disease including basis of vaccination, autoimmunity, immunodeficiency, hypersensitivity and tolerance

COPO MAPPING

SEMESTER V: COPO MAPPING										
Papers	Program Outcome: PO									
	Course Outcome: CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CC11	CO1	✓			✓			✓		
	CO2	✓			✓			✓		
	CO3	✓			✓			✓		
	CO4	✓			✓			✓		
	CO5	✓			✓			✓		
	CO6	✓			✓			✓		
	CO7	✓			✓			✓		
	CO8	✓			✓			✓		
	CO9	✓			✓			✓		
	CO10	✓			✓			✓		
	CC12	CO1	✓			✓			✓	
CO2		✓			✓			✓		
CO3		✓			✓			✓		
CO4		✓			✓			✓		
CO5		✓	✓		✓					
DSE1	CO1	✓	✓							
	CO2	✓		✓			✓			
	CO3	✓		✓			✓			
	CO4	✓		✓			✓			
	CO5	✓					✓	✓		
	CO6	✓		✓			✓			
DSE2	CO1	✓			✓		✓			

	CO2	✓					✓	✓		
	CO3	✓						✓		
	CO4	✓					✓	✓		
	CO5	✓					✓	✓		
	CO6	✓			✓			✓		

SEMESTER VI CC13: Developmental Biology			
Unique Paper Code	Name of the Paper	Course Outcome: CO	Statement
32231601	CC13: Developmental Biology	CO1	Understand the events that lead to formation of a multicellular organism from a single fertilized egg, the zygote.
		CO2	Acquire basic knowledge of the cellular processes of development and the molecular mechanisms underlying these.
		CO3	Describe the general patterns and sequential developmental stages during embryogenesis; and understand how the developmental processes lead to establishment of body plan of multicellular organisms.
		CO4	Discuss the general mechanisms involved in morphogenesis and to explain how different cells and tissues interact in a coordinated way to form various tissues and organs.
		CO5	Understand about the evolutionary

			development of various animals.
		CO6	Know the process of ageing leading to interventions that can improve the overall health and quality of life in aged people.
		CO7	Learn the importance of latest techniques like stem cell therapy, in vitro fertilization and amniocentesis etc. to be applied for human welfare.
		CO8	Develop the skill to raise and maintain culture of model system; Drosophila in the laboratory.
CC14: Evolutionary Biology			
32231602	CC14: Evolutionary Biology	CO1	Acquire problem solving and high order analytical skills by attempting numerical problems as well as performing simulation studies of various evolutionary forces in action.
		CO2	Apply knowledge gained, on populations in real time, while studying speciation, behaviour and susceptibility to diseases.
		CO3	Gain knowledge about the relationship of the evolution of various species and the environment they live in.
		CO4	Get motivated to work towards mitigating climate change so that well adapted species do not face extinction as a result of sudden drastic changes in environment.
		CO5	Use knowledge gained from study of variations, genetic drift to ensure that conservation efforts for small threatened populations are focused in right direction.
		CO6	Predict the practical implication of various evolutionary forces acting on the human population in the field of human health, agriculture and wildlife conservation.
		CO7	Use various software to generate interest towards the field of bioinformatics and coding used in programming language

DSE 3: Animal Biotechnology

32237903	DSE 3: Animal Biotechnology	CO1	Use or demonstrate the basic techniques of biotechnology like DNA isolation, PCR, transformation, restriction digestion etc.
		CO2	Make a strategy to manipulate genetic structure of an organism for the improvement in any trait or its well-being based on the techniques learned during this course.
		CO3	Understand better the ethical and social issues regarding GMOs.
		CO4	Use the knowledge for designing a project for research and execute it.

DSE 4: Reproductive Biology

33237910	DSE 4: Reproductive Biology	CO1	After completion of the course the students will be able to: • Get in-depth understanding of morphology, anatomy and histology of male and female reproductive organs.
		CO2	Know different processes in reproduction starting from germ cell formation to fertilization and consequent pregnancy, parturition and lactation
		CO3	Compare estrous and menstrual cycles and their hormonal regulation.
		CO4	Comprehend the interplay of various hormones in the functioning and regulation of the male and female reproductive systems
		CO5	Know about the diagnosis and management of infertility, including latest methods, technologies and infrastructure in assisted reproduction
		CO6	Practically understand the modern methods in contraception and their use in family planning

			strategies. •
		CO7	Translate their understanding into development of products like non-hormonal contraceptives; contribute to drug discovery programmes as well as neonatal and maternal health programmes and work with family planning teams to understand the needs and preferences of individuals belonging to lower socioeconomic groups.

COPO MAPPING

SEMESTER VI: COPO MAPPING										
Papers	Program Outcome: PO									
	Course Outcome: CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CC13	CO1	✓				✓		✓		
	CO2	✓			✓	✓				
	CO3	✓			✓			✓		
	CO4	✓			✓	✓				
	CO5	✓			✓	✓				
	CO6	✓			✓	✓				
	CO7	✓			✓	✓				
	CO8	✓			✓	✓				
CC14	CO1	✓				✓		✓		
	CO2	✓				✓		✓		
	CO3	✓			✓			✓		
	CO4	✓		✓				✓		
	CO5	✓	✓							✓

	CO6	✓								✓
	CO7	✓					✓	✓		
DSE3	CO1	✓			✓			✓		
	CO2	✓			✓			✓		
	CO3	✓			✓			✓		
	CO4	✓			✓			✓		
DSE4	CO1	✓					✓			
	CO2	✓					✓		✓	
	CO3	✓							✓	
	CO4	✓						✓	✓	
	CO5	✓					✓	✓		
	CO6	✓						✓	✓	
	CO7	✓					✓	✓		