



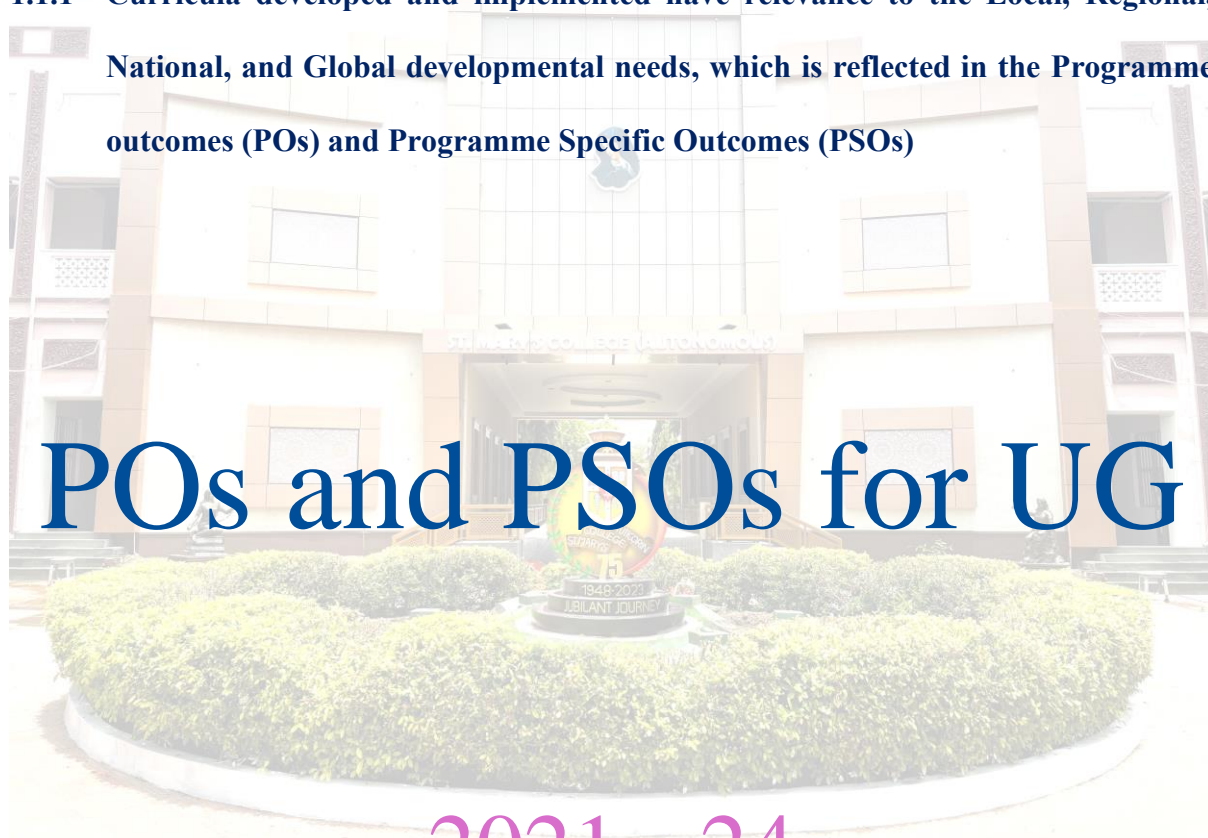
St. Mary's College (Autonomous)
Reaccredited with 'A+' Grade by NAAC (Cycle IV)
Thoothukudi



Criterion: I – Curricular Aspects
1.1 – Curriculum Design and Development
Year: 2018-2023



1.1.1 Curricula developed and implemented have relevance to the Local, Regional, National, and Global developmental needs, which is reflected in the Programme outcomes (POs) and Programme Specific Outcomes (PSOs)



POs and PSOs for UG

2021 - 24

B.A. English

Programme Outcome:

PO No.	After completion of the Undergraduate programme the students of St. Mary's College will be able to
PO-1	develop language, numerical, experimental, analytical and computing skills.
PO-2	pursue higher education programmes.
PO-3	excel in the recent trends of the world, enhancing the level of knowledge to emerge as a holistic person.
PO-4	function effectively as an individual in multidisciplinary settings and develop their ethical, social and cultural values to serve the nation.
PO-5	be proficient in the fields of Arts, Science and Management Studies to qualify for the job.
PO-6	develop their communicative skills using a range of technologies which enable them to express their ideas and views effectively.
PO-7	become an environmentally conscious citizen.
PO-8	be an empowered and economically independent woman with efficient leadership qualities in an egalitarian society through liberative education.

Programme Specific Outcome:

PSO No.	Upon completion of B.A. English Literature programme students will be able to	PO Mapped
PSO - 1	develop competency in communication skills and fluency in English language.	1, 6
PSO - 2	acquire knowledge and understanding on wider range of literary voices across cultures.	3
PSO - 3	employ rhetorical and literary skills to help compete in the global job market.	5
PSO - 4	evaluate literary genres in a socio-cultural and psychological perspective.	4
PSO - 5	explain how language and literature shape their perceptions to evolve towards better transformation.	7, 8
PSO - 6	apply critical and theoretical approaches to the reading and analysis of literary and cultural texts.	3
PSO - 7	emerge as educators, freelance writers, journalists and soft skill trainers.	2
PSO - 8	create, articulate and participate in deliberations for holistic growth.	3

B.A. History

Programme Outcomes:

PO No.	After completion of the Undergraduate programme the students of St. Mary's College will be able to
PO 1	develop language, numerical, experimental, analytical and computing skills.
PO 2	pursue higher education programmes.
PO 3	excel in the recent trends of the world, enhancing the level of knowledge to emerge as a holistic person
PO 4	function effectively as an individual in multidisciplinary settings and develop their ethical, social and cultural values to serve the nation
PO 5	be proficient in the fields of Arts, Science and Management Studies to qualify for the job.
PO 6	develop their communicative skills using a range of technologies which enable them to express their ideas and views effectively
PO 7	become an environmentally conscious citizen.
PO 8	be an empowered and economically independent woman with efficient leadership qualities in an egalitarian society through liberative education.

Programme Specific Outcomes:

PSO No.	Upon completion of BA degree programme, the students of History will be able to	PO Mapping
PSO 1	construct the history of our nation with illustration and study the basic themes, concepts, chronology and scope of history and be acquainted with linguistic and analytical skills and range of issues related to history and its distinctive eras.	PO 7
PSO 2	develop higher order of thinking	PO 6
PSO3	apply the acquired knowledge for their advancement in professional career and job opportunities.	PO 2,7
PSO4	comprehend and analyse the different stages and personalities of human beings and enhance the human values and rights.	PO 1, 4
PSO 5	build and estimate the art of historical writing and develop the communication skill to construct themselves as good personality.	PO 3, 4
PSO 6	utilize the computer application software and necessary skills for knowledge dissemination and their career advancement.	PO 8
PSO 7	assess and recognize the present existing socio-economic, political, cultural and religious condition of the people	PO 1, 7
PSO 8	appreciate history, historians and historical writing through the ages to be empowered.	PO 5

Programme Outcome

PO. No	After completion of the Undergraduate programme the students of St. Mary's College will be able to
PO 1	develop language, numerical, experimental, analytical and computing skills.
PO 2	pursue higher education programmes
PO 3	excel in the recent trends of the world, enhancing the level of knowledge to emerge as a holistic person.
PO 4	function effectively as an individual in multidisciplinary settings and develop their ethical, social and cultural values to serve the nation
PO 5	be proficient in the fields of Arts, Science and Management Studies to qualify for the job.
PO 6	develop their communicative skills using a range of technologies which enable them to express their ideas and views effectively
PO 7	become an environmentally conscious citizen
PO 8	be an empowered and economically independent woman with efficient leadership qualities in an egalitarian society through liberative education.

Programme Specific Outcome

PSO No.	Students of B.Sc Botany will be able to	PO Mapped
PSO-1	identify different groups of plants /organisms and understand their origin, evolution and phylogenetic relationships that will enable to infer the trends of life on earth.	PO-3
PSO-2	find how organism functions at biochemical and genome level and able to relate to growth, development and behavior of different forms of life	PO-3
PSO-3	observe interconnectedness of life on earth through nutrient cycling and energy flow of nutrients and able to articulate the values of natural resources in different walk of life	PO-3, PO-4, PO-6
PSO-4	excel in multidisciplinary science and apply them for biological analysis and problem solving in various fields of science	PO-4
PSO-5	able to learn and analyse the characteristics of coastal and marine environment enabling them to recognize marine resources and sustainable utilization	PO-5, PO-7
PSO-6	practice and demonstrate the techniques that ensure skill development and job option.	PO-1, PO-2, PO-8
PSO-7	extend science to address major environmental and ethical issues to develop just and sustainable solution	PO-7
PSO-8	design, experiment, formulate hypothesis, analysing data and present data for academic classes and scientific forum	PO-1, PO-5, PO-6

Programme Outcome:

PO.No.	After completion of the Undergraduate programme the students of St. Mary's College will be able to
PO-1	develop language, numerical, experimental, analytical and computing skills.
PO-2	pursue higher education programmes.
PO-3	excel in the recent trends of the world, enhancing the level of knowledge to emerge as a holistic person.
PO-4	function effectively as an individual in multidisciplinary settings and develop their ethical, social and cultural values to serve the nation.
PO-5	be proficient in the fields of Arts, Science and Management Studies to qualify for the job.
PO-6	develop their communicative skills using a range of technologies which enable them to express their ideas and views effectively.
PO-7	become an environmentally conscious citizen.
PO- 8	be an empowered and economically independent woman with efficient leadership qualities in an egalitarian society through liberative education.

Programme Specific Outcome

PSO No.	Upon completion of the B.Sc Zoology Degree programme, the graduates will be able to	PO Mapped
PSO - 1	acquire comprehensive knowledge on the extensive diversity and grades of complexity of various life forms	PO - 3
PSO - 2	explicate the interconnectedness of life and relationship between structure and functions at different levels of biological organization – molecules, cells, organs, organisms, populations and species	PO –3,7
PSO -3	explore physiological adaptations, development, reproduction and behaviour in different forms of life	PO -3
PSO - 4	master skills in the analysis and integration of biological data using statistical tools and packages	PO -6
PSO - 5	apply the knowledge of Zoology to understand the complexity of life processes and phenomena and conservation of resources and sustainability	PO - 7
PSO 6	evolve critical thinking skills/ lab techniques/virtual laboratory and capable of carrying out experiments, formulate research ideas and communicating the reports	PO –1,6
PSO 7	develop aptitude for self- employment through the entrepreneurial competence imparted through skill based courses	PO - 8
PSO -8	build foundation to cater the professional and industrial needs of the society	PO -2,5

Programme Outcome

PO .No	After completion of the Undergraduate programme the students of St. Mary's College will be able to
PO 1	develop language, numerical, experimental, analytical and computing skills.
PO 2	pursue higher education programmes.
PO 3	excel in the recent trends of the world, enhancing the level of knowledge to emerge as a holistic person.
PO 4	function effectively as an individual in multidisciplinary settings and develop their ethical, social and cultural values to serve the nation.
PO 5	be proficient in the fields of Arts, Science and Management Studies to qualify for the job.
PO 6	develop their communicative skills using a range of technologies which enable them to express their ideas and views effectively.
PO 7	become an environmentally conscious citizen.
PO 8	be an empowered and economically independent woman with efficient leadership qualities in an egalitarian society through liberative education.

Programme Specific Outcome

PSO No.	Students of B.Sc. Microbiology will be able to	PO Mapped
PSO-1	study the vast array of microbes around; to their diversity; structure and influence on the world	PO - 1
PSO-2	provide students with the basic laboratory skills required for a career in either applied or research microbiology	PO – 5, 9
PSO-3	expose the students to different processes used in industries.	PO - 1
PSO-4	expose the students to various emerging areas of Microbiology	PO – 7,6
PSO-5	the skill to identify individual microbial species, use aseptic techniques to grow them in pure culture, safely handle and examine them by microbiological methods.	PO - 2
PSO-6	the knowledge of microbiology will enable the students to improve the quality of human lives in relation to environment, fighting diseases.	PO – 4, 2
PSO-7	exploit microbes in the production of food	PO - 8
PSO-8	microbiology play a key role in genetic engineering and other modern biotechnologies such as antibiotic production and exploitation of newsources of food and energy.	PO – 3,8

Programme Outcome

PO. NO.	After completion of the Undergraduate programme the students of St. Mary's College will be able to
PO-1	develop language, numerical, experimental, analytical and computing skills.
PO-2	pursue higher education programmes.
PO-3	excel in the recent trends of the world, enhancing the level of knowledge to emerge as a holistic person.
PO-4	function effectively as an individual in multidisciplinary settings and develop their ethical, social and cultural values to serve the nation.
PO-5	be proficient in the fields of Arts, Science and Management Studies to qualify for the job.
PO-6	develop their communicative skills using a range of technologies which enable them to express their ideas and views effectively.
PO-7	become an environmentally conscious citizen.
PO-8	be an empowered and economically independent woman with efficient leadership qualities in an egalitarian society through liberative education.

Program Specific Outcome

PSO. No.	Upon completion of B.Sc. Programme, the students will be able to	PO mapped
PSO1	give an overview of the field of psychology and its various disciplines and learn the concepts of positive psychology and life management.	PO 1 & PO 2
PSO2	introduce the importance of knowing about the basic elements of sociology and social psychology and its new contemporary fields	PO 1 & PO 2
PSO3	understand the process and stages of human development and education	PO 1, PO 2& PO 4
PSO4	develop an awareness on the role of hormones and internal regulation methods and understand the health issues.	PO 5
PSO5	know about the assessment, classification and types of mental disorders and various abnormal conditions and forensic science associated with it.	PO 2, PO 5 & PO 8
PSO6	enable the students to understand the various measurements of statistics and concepts of sports psychology	PO 2 & PO 3
PSO7	acquaint the students with the nature and process of counseling and industrial psychology and try to understand the problems of the society with a psychological perspective.	PO 7 & PO 8
PSO8	make the students fluent, confident and efficient in the usage of English as a means of communication and professional excellence.	PO 4, PO 5, PO 6, PO 8 & PO 9

Programme Outcome

PO.No	After completion of the Undergraduate programme the students of St. Mary's College will be able to
PO 1	develop language, numerical, experimental, analytical and computing skills.
PO 2	pursue higher education programmes.
PO 3	excel in the recent trends of the world, enhancing the level of knowledge to emerge as a holistic person.
PO 4	function effectively as an individual in multidisciplinary settings and develop their ethical, social and cultural values to serve the nation.
PO 5	be proficient in the fields of Arts, Science and Management Studies to qualify for the job.
PO6	develop their communicative skills using a range of technologies which enable them to express their ideas and views effectively.
PO 7	become an environmentally conscious citizen.
PO 8	be an empowered and economically independent woman with efficient leadership qualities in an egalitarian society through liberative education.

Programme Specific Outcome

PSO No.	Students of B. Sc. Chemistry will be able to	PO Addressed
PSO-1	have a firm foundation in the fundamentals and application of current chemical and scientific theories including those in Analytical, Inorganic, Organic and Physical Chemistry.	PO - 1
PSO-2	design and carry out scientific experiments as well as accurately record and analyze the results of such experiments.	PO - 2, 3
PSO-3	excel in problem solving, critical thinking and analytical reasoning as applied to scientific problems.	PO - 4
PSO-4	explore new areas of research in both chemistry and allied fields of science and technology.	PO – 4, 7
PSO-5	appraise the central role of chemistry in our society and use this as a basis for ethical behaviour in issues facing chemists including an understanding of safe handling of chemicals, environmental issues and key issues facing our society in energy, health and medicine.	PO – 2, 3
PSO-6	synthesize, characterize and elucidate the structure of chemical compounds.	PO - 1
PSO-7	cater to the need of industries in context of the developing needs of the society and develop rigorous scientific attitude and provide excellence in teaching and research.	PO – 5,8
PSO-8	focus on critical thinking of the learners for efficient communicationdevelop knowledge, promote professional skillsand improve competency..	PO - 6

B.Sc. Computer Science

Programme Outcome:

PO.No	After completion of the Undergraduate programme the students of St. Mary's College will be able to
PO- 1	develop language, numerical, experimental, analytical and computing skills.
PO- 2	pursue higher education programmes
PO -3	excel in the recent trends of the world, enhancing the level of knowledge to emerge as a holistic person
PO -4	function effectively as an individual in multidisciplinary settings and develop their ethical, social and cultural values to serve the nation.
PO -5	be proficient in the fields of Arts, Science and Management Studies to qualify for the job.
PO- 6	develop their communicative skills using a range of technologies which enable them to express their ideas and views effectively.
PO -7	become an environmentally conscious citizen.
PO -8	be an empowered and economically independent woman with efficient leadership qualities in an egalitarian society through liberative education.

Programme Specific Outcome

PSO.No	Upon completion of B.Sc Degree programme, the graduates will be able to	PO
PSO-1	acquire knowledge on core concepts of Computer Science	1
PSO-2	develop programming skills to solve problems through various computer languages and database concepts.	1
PSO-3	possess social , ethical values and being environmentally conscious.	4,7
PSO-4	empower with analytical mind and critical thinking	3
PSO-5	possess employability ,entrepreneurship skills and leadership qualities.	5,8
PSO-6	build skills on various technologies	2,5
PSO-7	enhance students with communicative skill and soft skill	6
PSO-8	posses adaptive skills to self learn new computing technologies and embrace it .	3,4

Programme Outcome

PO.No	After completion of the Undergraduate programme the students of St. Mary's College will be able to
PO 1	develop language, numerical, experimental, analytical and computing skills.
PO 2	pursue higher education programmes.
PO 3	excel in the recent trends of the world, enhancing the level of knowledge to emerge as a holistic person.
PO 4	function effectively as an individual in multidisciplinary settings and develop their ethical, social and cultural values to serve the nation.
PO 5	be proficient in the fields of Arts, Science and Management Studies to qualify for the job.
PO 6	develop their communicative skills using a range of technologies which enable them to express their ideas and views effectively.
PO 7	become an environmentally conscious citizen.
PO 8	be an empowered and economically independent woman with efficient leadership qualities in an egalitarian society through liberative education.

Programme Specific Outcome

PSO No.	Upon completion of the B.Sc. Mathematics program, students will be able to:	PO Mapped
PSO-1	understand the foundations of mathematics and perform basic computations in higher mathematics.	PO – 1, 8
PSO-2	understand the power of abstraction and generalization and to carry out investigative and mathematical work with independent judgement.	PO - 3
PSO-3	communicate mathematical ideas, develop proficiency in the analysis of problems and use mathematical or other appropriate techniques to solve them.	PO –6,8
PSO-4	apply,create, use and analyze graphical representation of mathematical relationshipsto model real-world problems.	PO - 5
PSO-5	apply, highly numerate approach to analyze, execute tasks and solve problems in daily life and at work.	PO - 4
PSO-6	appreciate the role of mathematical proof as a means of conveying mathematical knowledge.	PO - 2
PSO-7	carry out objective analysis and prediction of quantitative information with independent judgement.	PO –3,7
PSO-8	develop language communication skills.	PO – 6

PROGRAMME OUTCOMES

PO.No	After completion of the Undergraduate programme the students of St. Mary's College will be able to
PO 1	develop language, numerical, experimental, analytical and computing skills.
PO 2	pursue higher education programmes.
PO 3	excel in the recent trends of the world, enhancing the level of knowledge to emerge as a holistic person.
PO 4	function effectively as an individual in multidisciplinary settings and develop their ethical, social and cultural values to serve the nation.
PO 5	be proficient in the fields of Arts, Science and Management Studies to qualify for the job.
PO 6	develop their communicative skills using a range of technologies which enable them to express their ideas and views effectively.
PO 7	become an environmentally conscious citizen.
PO 8	be an empowered and economically independent woman with efficient leadership qualities in an egalitarian society through liberative education.

PROGRAMME SPECIFIC OUTCOMES

PSO No.	Upon completion of B.Sc. Physics Degree programme, the graduates will be able to	PO Mapped
PSO – 1	acquire knowledge of mechanics, wave oscillations, acoustics, properties of matter, optics, thermal physics, electricity and electromagnetism to analyze a variety of physical phenomena.	PO – 1
PSO – 2	obtain knowledge in electronics and communication, digital electronics, solid state physics, optoelectronics, modern physics, bio physics, atomic physics, nuclear energy, relativity and quantum mechanics and fibre optics communication to become competent to pursue higher education	PO – 2
PSO – 3	utilize their knowledge about renewable energy sources to solve the present day energy crisis	PO – 3
PSO – 4	gain knowledge about computational Physics, laser, superconductivity, thin films, polymer materials, sensors, biophysics, nanophysics, electrical appliances, maintenance of electronic equipment and photography, wiring and domestic appliances.	PO – 5
PSO – 5	adapt easily into the workplace to become communicatively competent by learning professional English for Physics	PO – 6
PSO – 6	design, set up and carryout experiments, infer data, account for errors and compare with theoretical predictions	PO – 1
PSO – 7	recognize the impact of environmental issues and manage the natural disasters and use the natural resources for more sustainable way of living	PO – 7
PSO – 8	develop physical and psychological health of women and gain awareness on legal rights and become an empowered women through various domains	PO – 8

B.Com

Programme Outcomes:

PO No.	After completion of the Undergraduate programme, the students of St. Mary's College will be able to
PO – 1	develop language, numerical, experimental, analytical and computing skills.
PO – 2	pursue higher education programmes.
PO – 3	excel in the recent trends of the world, enhancing the level of knowledge to emerge as a holistic person.
PO – 4	function effectively as an individual in multidisciplinary settings and develop their ethical, social and cultural values to serve the nation.
PO – 5	be proficient in the fields of Arts, Science and Management Studies to qualify for the job.
PO – 6	develop their communicative skills using a range of technologies which enable them to express their ideas and views effectively.
PO – 7	become an environmentally conscious citizen.
PO – 8	be an empowered and economically independent woman with efficient leadership qualities in an egalitarian society through liberative education.

Programme Specific Outcomes

PSO No.	Upon completion of B.Com Degree programme, the graduates will be able to,	PO Mapped
PSO - 1	build a strong foundation of knowledge in different areas of commerce.	PO – 1,5,2
PSO - 2	develop the skill of applying concepts and techniques used in business and an attitude for working effectively and efficiently in an enterprise.	PO – 1, 2, 6
PSO – 3	develop functional and general management skills with sound ethics.	PO – 3, 4,7
PSO - 4	integrate knowledge, skill and attitude that will sustain an environment of learning and creativity among the students.	PO - 4, 6, 7
PSO - 5	acquire practical skills relating to finance, accounting, banking, taxation, computer application and learning and demonstrate writing skills in business communication	PO - 2, 5, 6
PSO - 6	exhibit students to entrepreneurship skills and inculcate global mindset.	PO - 5, 7, 8
PSO - 7	make decisions at personal and professional level.	PO – 3, 8, 7
PSO - 8	evaluate different problems using analytical, creative and integrative abilities.	PO – 1, 2, 4

B.Com (Corporate)

Programme Outcomes:

PO No.	Upon completion of B.Com. programme, the graduates will be able to
PO - 1	develop language, numerical, experimental, analytical and computing skills.
PO - 2	pursue higher education programmes
PO - 3	excel in the recent trends of the world, enhancing the level of knowledge to emerge as a holistic person.
PO - 4	function effectively as an individual in multidisciplinary settings and develop their ethical, social and cultural values to serve the nation
PO - 5	be proficient in the fields of Arts, Science and Management Studies to qualify for the job
PO – 6	develop their communicative skills using a range of technologies which enable them to express their ideas and views effectively.
PO – 7	become an environmentally conscious citizen.
PO – 8	be an empowered and economically independent woman with efficient leadership qualities in an egalitarian society through liberative education

Programme Specific Outcomes

PSO No.	Upon completion of B.Com Degree programme, the graduates will be able to,	PO Mapped
PSO - 1	build a strong foundation of knowledge in different areas of commerce.	PO – 1,5,2
PSO - 2	develop the skill of applying concepts and techniques used in business and an attitude for working effectively and efficiently in an enterprise.	PO – 1, 2, 6
PSO – 3	develop functional and general management skills with sound ethics.	PO – 3, 4,7
PSO - 4	integrate knowledge, skill and attitude that will sustain an environment of learning and creativity among the students.	PO – 4,6,7
PSO - 5	acquire practical skills relating to finance, accounting, banking, taxation, computer application and learning and demonstrate writing skills in business communication	PO – 2,5,6
PSO - 6	exhibit students to entrepreneurship skills and inculcate global mindset.	PO – 5,7,8
PSO - 7	make decisions at personal and professional level.	PO – 3,8,7
PSO - 8	evaluate different problems using analytical, creative and integrative abilities.	PO – 1,2,4

Programme Outcomes:

PO. No.	After completion of the B.A Degree Programme, the students will be able to
PO 1	develop language, numerical, experimental, analytical and computing skills.
PO 2	pursue higher education programmes.
PO 3	excel in the recent trends of the world, enhancing the level of knowledge to emerge as a holistic person.
PO 4	function effectively as an individual in multidisciplinary settings and develop their ethical, social and cultural values to serve the nation.
PO 5	be proficient in the fields of Arts, Science and Management Studies to qualify for the job.
PO 6	develop their communicative skills using a range of technologies which enable them to express their ideas and views effectively.
PO 7	become an environmentally conscious citizen.
PO 8	become an empowered and economically independent woman with efficient leadership qualities in an egalitarian society through liberative education.

Programme Specific Outcomes

PSO. No.	Upon completion of B A degree programme, the students of economics will be able to	PO Mapping
PSO 1	communicate effectively on specific economic issues and present complex information in a clear and concise manner and also enhance the ability to use basic mathematical and statistical tools to solve real economic problems	PO 1, 6
PSO 2	have the capability to demonstrate comprehensive knowledge and understanding on the basic concepts and theories and build strong foundation for pursuing continuous learning.	PO 2
PSO 3	boost the spirit of self-confidence and inculcate the spirit of moral values.	PO 3, 4
PSO 4	have the capacity to analyse and evaluate the current events from an economic perspective and expand skills in practical application of economic theory.	PO 3, 5
PSO 5	possess an ability to offer alternative solution on policy issues in real life.	PO 6
PSO 6	communicate effectively on specific economic issues and present complex information in a clear and concise manner.	PO 6
PSO 7	emphasise on environmental problems emerging from economic development and applying economic principles for the valuation of environmental quality.	PO 7
PSO 8	develop the spirit of leadership qualities and readiness to work and learn.	PO 6, 8

BBA

Programme Outcomes:

PO No.	Students of Business Administration will be able to
PO – 1	develop language, numerical, experimental, analytical and computing skills.
PO – 2	pursue higher education programmes.
PO – 3	excel in the recent trends of the world, enhancing the level of knowledge to emerge as a holistic person.
PO – 4	function effectively as an individual in multidisciplinary settings and develop their ethical, social and cultural values to serve the nation.
PO – 5	be proficient in the fields of Arts, Science and Management Studies to qualify for the job.
PO-6	develop their communicative skills using a range of technologies which enable them to express their ideas and views effectively.
PO-7	become an environmentally conscious citizen.
PO-8	be an empowered and economically independent woman with efficient leadership qualities in an egalitarian society through liberative education.

Programme Specific Outcome

PSO No.	Students of Business Administration will be able to	PO Addressed
PSO-1	explicit the sound knowledge of business concepts in the major disciplines of business environment.	PO-1, 3
PSO-2	be proficient in the uses of technology in modern organisational operations	PO-2, 8
PSO-3	demonstrate the knowledge and understanding of the ethical, legal and social responsibilities of business	PO-3, 5, 7
PSO-4	develop themselves in managerial and entrepreneurial skills through pragmatic approach.	PO-4, 6, 9
PSO-5	function expertly in team.	PO-4, 8
PSO-6	define, analyze, and devise solutions for business issues & demonstrate to prepare accurate reliable financial reports.	PO-2, 8
PSO-7	enhance themselves with excellence in leadership.	PO-2,7,8
PSO-8	acquire employment in various emerging areas of administration	PO-2, 5, 6, 9