



A.M.A.L. COLLEGE

ANAKAPALLE- 531001. Ph.08924 220634

NAAC ACCREDITED B++ GRADE

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PROGRAMME OUTCOME

Three-year B.Sc. Programme:

The Three-year B.Sc Programme at A.M.A.L. College of Commerce and Science offers courses at First, Second and Third year level in the subjects of Physics, Chemistry, Mathematics, Zoology, Botany, Computer Science and. All of these subjects are designed with a specific aim of introducing students to various laboratory methods thereby exposing them to several laboratory techniques in handling of state of the art equipment, critical thinking and being independent as well as team learning. They develop laboratory skills throughout the curriculum via hands-on experiences with diverse experimental techniques and tools. They learn several approaches to data analysis and become confident in using computational methods to analyze and solve various problems. Although the student's long term goals are quite varied, these courses help in drawing many to careers that demand scientific and technical knowhow and strong logical reasoning abilities. The following is a specification of the key Programme Outcomes (knowledge, skills, values and attitude) that highlight important areas in which the students are expected to gain proficiency at the end of the tenure of their undergraduate program.

(1) PO-1: Knowledge: Learners are encouraged to apply the knowledge of mathematics and science fundamentals to various solutions of complex problems. As such, knowledge the subject is the sole objective of any student learner. A student is exposed to a wide range of topics in various subjects and is given intensive training in each of the courses that have laboratory related work. The learner is encouraged to use various mathematical methods (analytical and numerical) and experimental methods as an application to the acquired concepts and principles that help in studying various branches of sciences. At the end of the program, students are able to gain thorough knowledge in key areas in the subjects offered.

(2) PO-2: Problem Analyses: Well equipped with an understanding of the analytical methods involved, they are in a position to interpret and analyze results so obtained from experiments and draw suitable conclusions against their supported data acquired. At the end of the program, students will be able to identify, formulate and analyze scientific problems and reach concrete solutions using various principles of mathematics and sciences.

(3) PO-3: Designing Solutions: Having acquired knowledge of subjects, students are trained to think out of the box, design and conduct an experiment or a series of



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experiments that demonstrate their understanding of the methods and processes involved. For example, as a part of the project of the final year, students in the subject of Physics are encouraged to calculate the overall power consumption of the institution and think of ways and means of minimizing this consumption through alternate sources of energy. This in turn helps in the learner; develop a holistic approach from real time solutions. As such, at the end of the program, learners will be able to design solutions for complex problems and design a process/ processes that can meet specific needs. (Attainment of this is through projects at the final year level).

- (4) **PO-4: Modern tool usage:** As an outcome of PO-1, PO-2 and PO-3, learners are trained to create, select, and apply appropriate techniques, resources and IT tools in the analysis and synthesis of data within limitations. (Outcome of final year project).
- (5) **PO-5: Communication Development:** The medium of instruction being English, proficiency in the subject through English is one of the primary objectives of the science program. In order to improve the writing and oral skills of learners, the program caters to ensuring that learners become effective, clear communicators in written and oral work and are capable of explaining complex issues in accessible terms. With English language being the common mode of communication worldwide, all learners under the programme are encouraged to participate in courses designed to equip students with English-language proficiency through Grammar, Written and Spoken English to enable a holistic enhancement of communication. Through a selection of courses such as ability enhancement courses, learners are also trained to communicate efficiently in the languages of Konkani, Hindi and Marathi. As such, at the end of the program, learners will be capable of oral and written communication, and will prove that they can think critically and work independently. Learners will be able to communicate effectively on scientific issues with the scientific community and society at large in writing effective reports and designing documentation, make effective presentations and give and receive instructions.
- (6) **PO-6: Employability:** With our learners long-term professional pursuits being quite varied, many are drawn to careers that require scientific skills or technical expertise or strong quantitative reasoning abilities. Keeping this in mind, the institution apprises students of various employment opportunities that are available in areas of their choice through the Placement cell. To equip these learners with knowledge other than that of the subject such as skills required helping them qualify for jobs, all the science subjects offer skill enhancement courses and value added courses so that learners have a better edge over their counterparts. For example, the subject of Physics offers a value added course titled "Certificate Course in Electrical and Electronic Instrumentation" that offers learners with additional skills of handling scientific instruments, performing calibrations etc. As such, at the end of the programme



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students will be able to increase their employability through subject knowledge and additional skills.

- (7) **PO-7: Ethics:** While it is necessary to instil the spirit of competitiveness among students in a world of increasing competition, it is equally vital to develop a strong sense of ethics among learners that will help them develop some positive attitudes and values. This includes appreciation of the various principles and theories that evolved in science, the impact that science has on social, economical and environmental issues. One of the main objectives of any academic exercise, therefore, should be to produce well-groomed individuals who understand the significance of ethical values and abide by them even in the most pressing circumstances. In this programme, this process is enabled through courses and facilitators who integrate the teaching of ethics in everyday pedagogy. As such, at the end of this programme students will be able to develop, internalise and exercise ethics in their professional as well as personal practices.
- (8) **PO-8: Environment and Sustainability:** 'Environmental sustainability' has become the watchword of the 21st century. An increased engagement with environment-related concerns is appearing tangibly on global fronts; academics cannot and *should not* remain quarantined from this massive development. Through classroom-discussions and research projects, this programme facilitates active dialogues with factors which influence human-ecology interactions. As such, at the end of this programme students will be able to identify and analyze socio-political, cultural and economic problems which act as deterrents to environmental sustainability and provide creative solutions towards the same.
- (9) **PO-9: Soft-Skill Development:** Apart from the attainment of knowledge and hands-on skills in practical applicability of the subject, learners need to be equipped with soft-skills and values which will help them function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary groups. These soft-skills include leadership, teamwork, project-management, positive outlook, innovative approaches and effective articulation. Several soft skill programs are organized for learners through various agencies that tie up with the state government. As such, at the end of this programme, students will be able to hone the soft-skills required in positively enhancing their academic, professional and personal pursuits towards self and societal advancement.
- (10) **PO-10: Science and Society:** As an outcome of PO-1, PO-2 and PO-3, learners are encouraged to apply logical reasoning based on the knowledge, skills, designing solutions to assess societal, health, safety issues and the responsibilities that go along with the scientific practice. As an extension activity to society, learners are



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encouraged to take up specific projects such as impact of salinity on fresh water wells in an adopted village, and provide effective solutions.

- (11) **PO-11: Life-long learning:** With the pursuit of knowledge for either personal or professional reasons, learners are also encouraged to volunteer and be self-motivated that not only enhances society values, active participation and personality development, but also enhances self-sustainability, competitiveness and employability. As such, learners will be able to recognize the need for, and have the preparation and ability to engage in independent and life-long learning in every broad context of technological changes.

Programme Specific outcomes

Physics

PSO1: Students will be able to acquire core knowledge in Physics in the key areas, develop written & oral communication skills in communicating physics-related topics.

PSO2: Design & conduct an experiment, demonstrate their understanding of the scientific methods & processes.

PSO3: Develop proficiency in acquiring data using a variety of instruments, analyze & interpret the data, learn applications of numerical techniques

PSO4: Realize & develop an understanding of the impact of Physics & science on society.

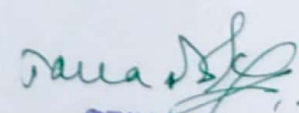
Mathematics

PSO1: Students will be able to acquire core knowledge in Physics in the key areas, develop written & oral communication skills in communicating physics-related topics.

PSO2: Design & conduct an experiment, demonstrate their understanding of the scientific methods & processes.

PSO3: Develop proficiency in acquiring data using a variety of instruments, analyze & interpret the data, learn applications of numerical techniques

PSO4: Realize & develop an understanding of the impact of Physics & science on society.


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Chemistry:

Programme Out Comes

PO-1. Demonstrate, solve and an understanding of major concepts in all disciplines of chemistry.

PO-2. Solve the problem and also think methodically, independently and draw a logical conclusion.

PO-3. Employ critical thinking and the scientific knowledge to design, carry out, record and analyze the results of chemical reactions.

PO-4. Create an awareness of the impact of chemistry on the environment, society, and development outside the scientific community.

PO-5. Find out the green route for chemical reaction for sustainable development.

PO-6. To inculcate the scientific temperament in the students and outside the scientific community.

PO-7. Use modern techniques, various equipments and Chemical softwares.

Chemistry

Programme Specific Out Comes

PSO1: Students will be able to acquire core knowledge in Chemistry in the key areas, develop written & oral communication skills in communicating chemistry-related topics.

PSO2: Design & conduct an experiment, demonstrate their understanding of the scientific methods & processes.

PSO3: Develop proficiency in acquiring data using a variety of instruments, analyze & interpret the data, learn applications of numerical techniques.

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Zoology

PSO1: Students will acquire knowledge on basic, important concepts in the field of Zoology such as Physiology, Taxonomy, Evolution, Genetics, Wildlife Biology, Developmental Biology and Comparative Anatomy and can be applied to fields such as Animal Biotechnology.

PSO2: Students will learn how to identify organisms, understand animal body systems, understand population dynamics in the environment as well as apply these concepts when conducting field surveys.

PSO3: Students will also gain a sense of responsibility, appreciation and conservation with regards to nature and environment

Computer Science

PSO1: Understand concepts of computer organisation, operating systems and computer networks.

PSO2: design data structures and algorithms for real life problems.

PSO3: develop data storage and retrieval techniques, build computer based application.

Botany

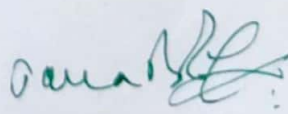
PSO1: Acquire in-depth knowledge of Botany and its allied branches, develop skills to identify and classify plants belonging to different groups from microbes, Algae up to Angiosperms.

PSO2: Demonstrate various laboratory skills and acquire knowledge to handle instruments, equipment's, glass wares etc. in the field of Biotechnology, Genetics, Biochemistry, Molecular biology etc.

PSO3: Acquire time management skills. Develop awareness about environmental conservation and management strategies.

PSO4: Gain knowledge about various applicative botanical techniques in the field of Floriculture, Horticulture and use of traditional medicine which will enable them to be the entrepreneurs.




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B.Com
(Regular)
Program
Outcome

- This program could provide Industries, Banking Sectors, Insurance Companies, Financing companies, Transport Agencies, Warehousing etc., well trained professionals to meet the requirements.
- After completing graduation, students can get skills regarding various aspects like Marketing Manager, Selling Manager, over all Administration abilities of the Company.
- Capability of the students to make decisions at personal & professional level will increase after completion of this course.
- Students can independently start up their own Business.
- Students can get thorough knowledge of finance and commerce.
- The knowledge of different specializations in Accounting, costing, banking and finance with the practical exposure helps the students to stand in organization.

Program Specific Outcome

- The students can get the knowledge, skills and attitudes during the end of the B.com degree course.
- By goodness of the preparation they can turn into a Manager, Accountant, Management Accountant, cost Accountant, Bank Manager, Auditor, Company Secretary, Teacher, Professor, Stock Agents, Government employments and so on.,
- Students will prove themselves in different professional exams like C.A.

, C S, CMA, MPSC, UPSC. As well as other coeres.

- The students will acquire the knowledge, skill in different areas of communication, decision making, innovations and problem solving in day to day business activities.
- Students will gain thorough systematic and subject skills within various disciplines of finance, auditing and taxation, accounting, management, communication, computer.
- Students can also get the practical skills to work as accountant, audit assistant, tax consultant, and computer operator. As well as other financialsupporting services.
- Students will learn relevant Advanced accounting career skills, applying both quantitative and qualitative knowledge to their future careers in business.
- Students will be able to do their higher education and can make researchin the field of finance and commerce.



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