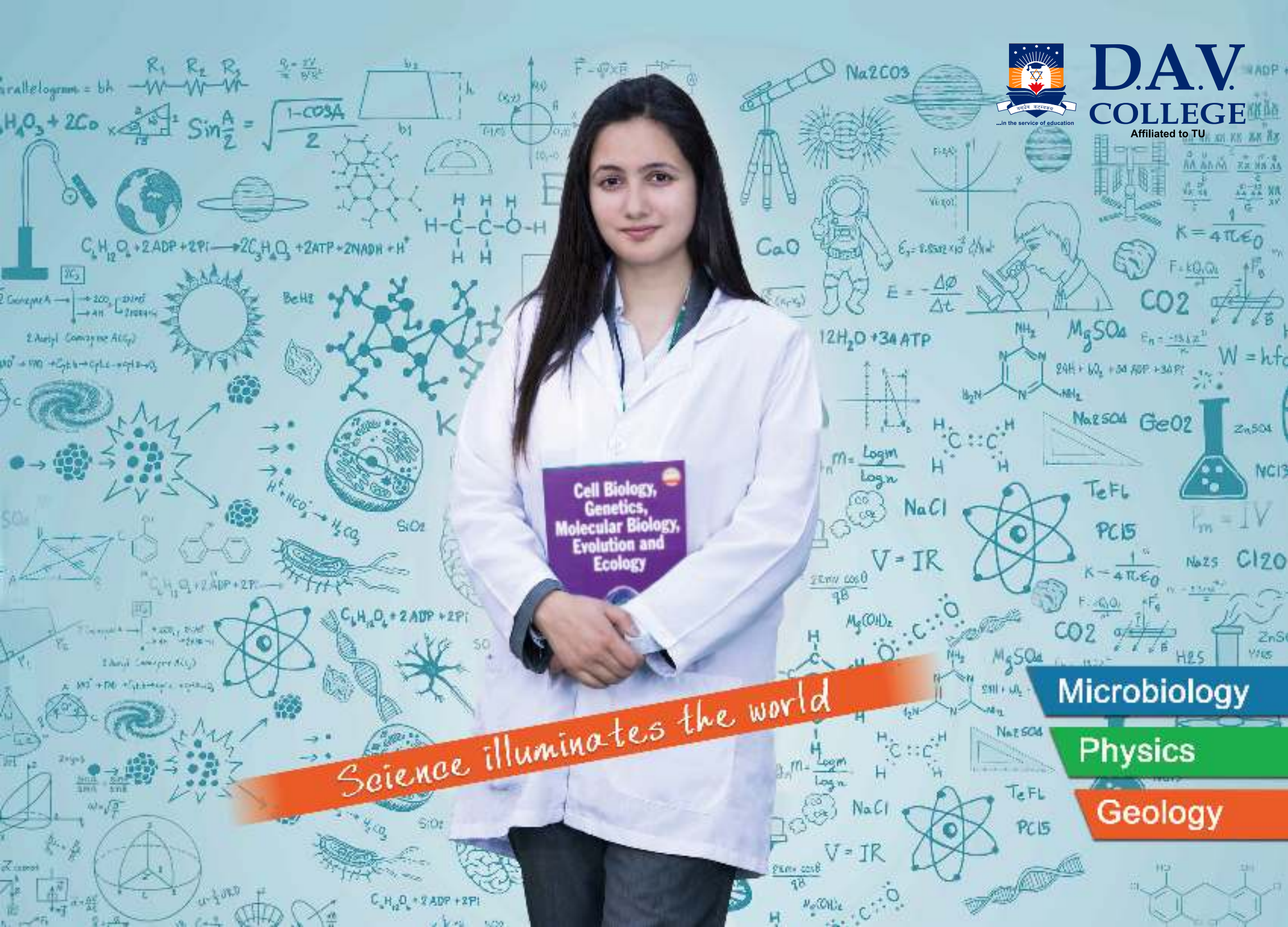

D.A.V.
COLLEGE
...in the service of education
Affiliated to TU
Cell Biology, Genetics, Molecular Biology, Evolution and Ecology
Science illuminates the world
Microbiology
Physics
Geology

Message From The Chairman

I am honored to guide this exciting venture of establishing the college of Science and Technology at DAV, Nepal.

DAV is the fusion of the established ancient philosophy and modern education of the East and West respectively. Comparative teaching of different models of education within these two systems have been applied for DAV Students to struggle and adjust globally in any kind of competitive environment. Anglo-vedic education, multi-lingual approach, learn-by-doing approach, vocational studies, laboratory approach, media and social service approach are the distinguished characteristics of this institute. DAV and DAVIANS always strive to set up a new standard in EDUCATIONAL CULTURE through the teaching and learning of different norms, values and beliefs that help cater the present exigencies of 21st century by producing skilled and trained human manpower. The stepping of Bachelor of Science at this juncture is another page added to the history and movement of DAV in Nepal.

Needless to say that it's only the progress and development of Science and Technology that will demarcate the line between developing and developed country. It's the knowledge and application of Science and Technology which could make creative and critical minds born and exist for the welfare and the goodness of human being on the Earth. In the domains of leading age of scientific research or the high growth development of sector of our scientific era, there is always a critical need for talent and brilliant minds able to apply the scientific knowledge to solve the real world problem in a creative manner for instance.

No doubts, DAV College will be an attractive option for bright students who'd like to enjoy learning through experimentation and problem-solving skills in different inter-disciplinary subjects such as Microbiology, Physics and Geology. At DAV as we've a team of highly qualified and experienced teaching and non-teaching staffs and faculty members whose unbeaten endeavors and charismatic personality and leadership motives will always seek positive achievements and contributions in the changing scenario of this world from its followers and disciples.

"Fortune favors the prepared minds", once Louise Pasteur said to motivate and encourage the innovative minds to live and let others live. Therefore, we're also very much determined and committed to our goals, missions and vision to build up the strong foundation and to cultivate the essential skills to nurture oneself for world class Standard and Excellency. We've introduced DAV science program to prepare the students for creative careers and scholars at world top ranking Universities as well as Research Laboratory. The DAV College will lend its full support in enhancing the learning opportunities for students in research, in design and development and enrichment programs in Science and Technology.

I look forward to lead this exciting journey with the outstanding team being put together by DAV family.

Anil Kedia
Chairman

Mr. Anil Kedia
Chairman

Research Cell

The Cell conducts research on the issues of promoting student-centric teaching and learning process, knowledge formation, knowledge advocacy, and so on. It frequently runs seminars and talk programs, and publishes periodic journals on the emerging issues. With the involvement and coordination with renowned and devoted researchers of the nation and abroad, the Cell aims to make significant contributions to the community through the fruits of its research.

Assoc. Prof. Pradeep Kumar Shah
Advisor

Mr. Suman Basnet
(Academic Director)
Member

Basanta Devkota
(M.Sc. Geology)
Member

Mr. Shashi Bhushan Chaturwedi
(Coordinator)
Member Secretory

Shashi Bhushan Chaturwedi
Program Coordinator

Few Words from Program Coordinator

"Science illuminates the world". With this theme DAV College embarked its journey in the field of science and Technology with B.Sc. program in the year 2013. To enlighten the students with the knowledge of science from inside out; we follow integration of spirituality in to technology in our teaching culture which facilitate to illuminate the universe that lies within us as well as the universe in which we live in.

DAV College always stands for its excellence for cumulating quality education with high values and ethics. We continuously set the highest standards in the fields of education system by state of art infrastructure, well equipped and advanced laboratories, and a team of devoted academicians, scholar and experts. With this short period of time, the College is being recognized among best science college across the country, by educationists.

"Science" which can only be mastered through practice, experiments and research, is the core strength of DAV B.Sc. program. An amiable environment and well equipped state of art laboratory facilities at DAV nurtures creativity, skills, passion, and resilience and leadership qualities among students for all round development.

Our visionary and progressive Management is looking forward and wants our Institute to be known as Institute of Excellence. Steps are taken in this direction and fruits of these efforts will be received by our students from time to time being awarded by best prize in various national as well as international competition. We are also on the way to give our students International Exposure. I am Proud to say that our students are doing excellent in academics, practical, presentation, scientific writing and competition. Since DAV College is amalgamation of western technology and eastern values that takes an individual towards the zenith of glory. As a result of restless effort of every member of DAV family, every student at this college feel delighted to be a part of this scientific journey.

Introduction

Intent upon keeping the Flag of pristine flying, it was natural that the Dayanada Anglo Vedic (DAV) Trust was attracted towards Nepal and Joined its hand with the renowned educational organization of Nepal with the objective to establish, organize and manage educational institutes all over Nepal under uniform ideology and curriculum. Hence, DAV Sushil Kedia Vishwa Bharati School was established. On the completion of successful decade long service, it expanded its wing higher up and hat its own college established in the year 2003.

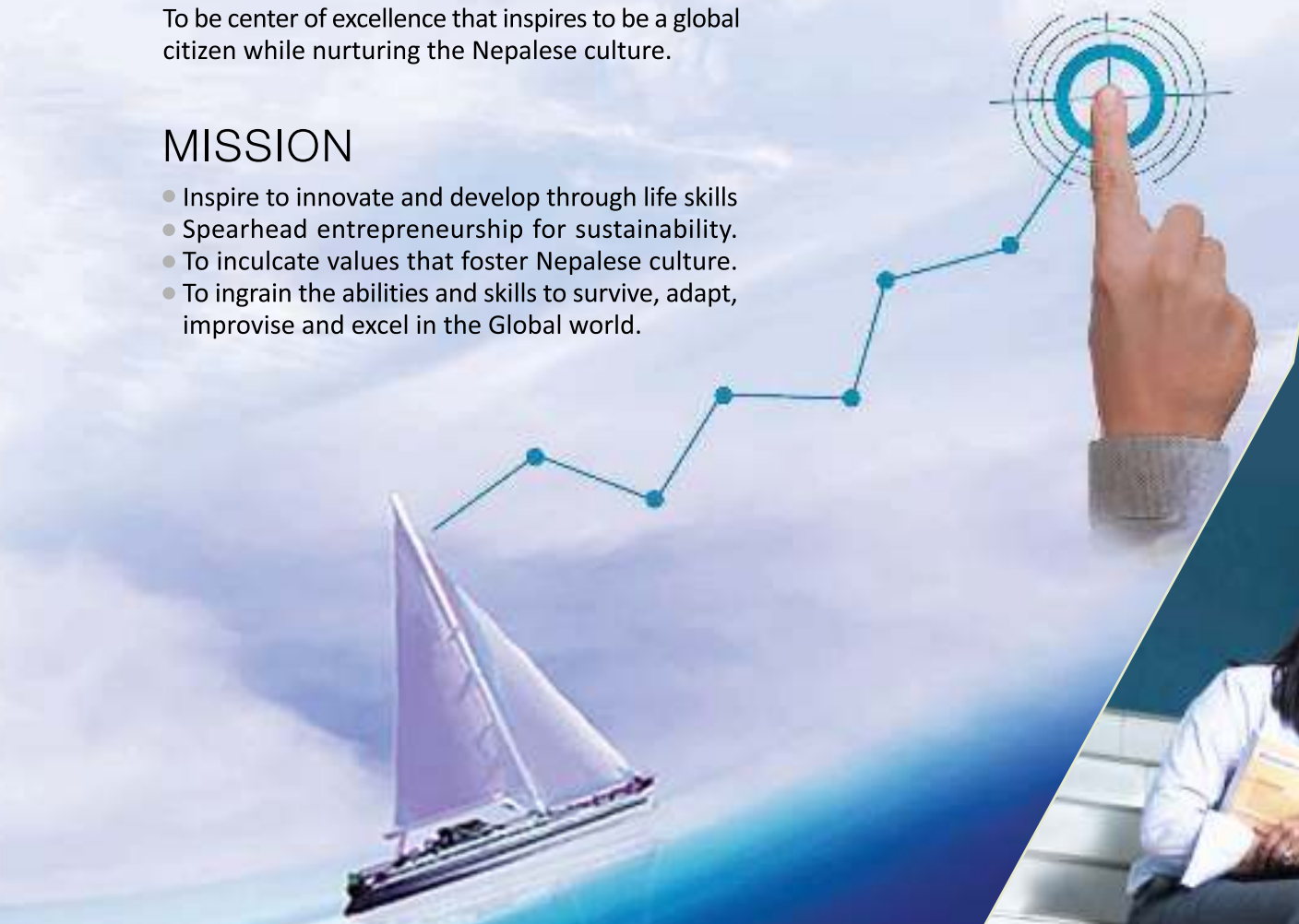
As per the global requirements and earnest request of students/parents, DAV College expanded its affiliation to B.Sc. Microbiology, B.Sc. Physics, B.Sc. Geology in 2014 A.D. It is run by a team of science experts and academic scholars, therefore, it is undoubtedly of international standard as far as Science and Technology is concern. The DAV Science College is built on its own values designed to emulate those students who belong to the field of science and technology.

VISION

To be center of excellence that inspires to be a global citizen while nurturing the Nepalese culture.

MISSION

- Inspire to innovate and develop through life skills
- Spearhead entrepreneurship for sustainability.
- To inculcate values that foster Nepalese culture.
- To ingrain the abilities and skills to survive, adapt, improvise and excel in the Global world.



Objectives

- To make learning socio-economically relevant.
- To provide ample platform for all-round development of students.
- To prepare the students to meet the emerging global demand.
- To provide effective and modern teaching-learning facilities, keeping pace with the latest educational techniques.
- To make valuable contribution to the society by inculcating ethical and moral values in our students.
- To make our students techno-savvy.
- To impart quality education by building a rapport among the students, teachers and parents.
- To establish DAV College itself as a first model institution in the country.

Features

- Welcoming sustainable environment
- Learning through experience
- Innovation and entrepreneurship
- Funded research facility
- Placement Cell

Specialty

- Engaging faculty
- Learning by earning through projects
- Leading edge faculty
- Pre professional training
- Entrepreneurship training
- Guest Lectures

Facilities

Laboratory

The laboratories are all well-equipped with scientific and ecofriendly technological equipments. It is spacious enough along with proper management by our dedicated and devoted faculties and experts. Lab facilities are always open for the working students.

- State of art infrastructure ultranmodern facilities auditoriums
- Leading edge technology based research lab
- Different playing stations

Highlights

- Learning through experiences by down to earth experts
- Individualized study
- Hands on experience with current issues based projects
- Study tours and excursions
- Students support system
- Technical expert class
- Business plant presentation
- National and International visits
- Incubation center

About Programs

The following programs at DAV College affiliated to TU, is fulltime programs devoted to prepare the innovative and creative mind as well as values based socially responsible professionals.

Microbiology

DAV offers B.Sc. Microbiology which is devoted to develop abilities and skills in students that are relevant to the study and practice of Microbiology and collaborate with national as well as international organizations for research as well as human resource development.
We always put emphasis not only on high level of education but also in creating competitive, creative and friendly environment in the college.

Microbiology is an integral part of many different biotechnology scientific studies, such as immunology, genetics, molecular biology, biochemistry, medicine, agriculture, ecology, industrial processes and many more. It is the subject which teaches us about the importance of microorganisms in causing diseases and cycling nutrients in environment. It, therefore, has always been one of the fields of great importance. It focuses on experiment research under many fields. Research and Development, Education, Projects, Industry, Applied field as well as Business field provide enormous opportunities for the microbiology graduates.

Number of Seats : 25 +10
Course Duration : Four Years
Eligibility Criteria : Sound academic records in I.Sc. or +2 level (Biology) with minimum C Grade in each subject. (A level with minumum E Grade)

Objectives of the Course

Furnish students with working knowledge of basic bacterial laboratory techniques, foundations of Microbiology - the concepts of classification, evolution and growth of microorganisms, as well as a factual and laboratory knowledge of specific microorganism types. In addition, they should have developed an understanding of microbial ecology and of medical and practical uses for microorganisms, and how they relate to basic biological concepts.
Students are encouraged to involve themselves in various project works each year for promoting their professionalism and research.

Subject Combination:

- Microbiology
- Zoology/Botany
- Chemistry

Course Structure

First Year
General Microbiology, Chemistry, Zoology/Botany
Interdisciplinary Subject-Scientific Communication

Second Year
Biochemistry and Microbial Biotechnology, Chemistry, Zoology/Botany,
Interdisciplinary Subject-Applied Statistics

Third Year
Cell and Molecular Biology, Bioinformatics/ Pharmaceutical Microbiology, Chemistry, Basic Biochemistry/Analytical Chemistry, Zoology, Bioinformatics/Natural Resource Management
Interdisciplinary Subject- Research Methodology

Fourth Year

Agriculture and Food Microbiology, Environment and Public Health Microbiology, Medical Microbiology, Methods in Microbiology (Applied Microbiology)/Project writing and Presentation, Instrumentation in Microbiology
Interdisciplinary Subject -Computational Course.

Learning Environment

Student's Views

DAV has provided me an astounding rostrum to polish my abilities and strengthen my skills. I have always been awestruck and inspired by all the qualified and experienced group of teachers and staffs who have helped me through the process of gaining knowledge. The practical exposure you get here is incomparable. So, please come and encounter the whole process of growing personally and professionally here at DAV. What you get here is nowhere to be found!

- Aruna Shree Iama
(Pass out student)

For me, studying at D.A.V turned out to be an immense treasure of experience and knowledge. In D.A.V, each student is encouraged to challenge ideas, exposing the class to a wide assortment of perspectives. This helps them to think independently, reason effectively, and learn successfully. The students also engage in a wide variety of extracurricular activities that further help to uplift their sportsmanship and social skills. D.A.V encouraged me to explore my talent and potential by providing an exceptional integrated learning environment. I would like to express my gratitude towards all the teachers who have changed my whole aspect towards learning. Every individual who joins D.A.V will get many opportunities to explore and develop themselves. I hope everyone who joins D.A.V has a great and successful college life and career.

Deena Maharjan
(2nd Year Topper)

For me, studying at D.A.V turned out to be an immense treasure of experience and knowledge. In D.A.V, each student is encouraged to challenge ideas, exposing the class to a wide assortment of perspectives. This helps them to think independently, reason effectively, and learn successfully. The students also engage in a wide variety of extracurricular activities that further help to uplift their sportsmanship and social skills. D.A.V encouraged me to explore my talent and potential by providing an exceptional integrated learning environment. I would like to express my gratitude towards all the teachers who have changed my whole aspect towards learning. Every individual who joins D.A.V will get many opportunities to explore and develop themselves. I hope everyone who joins D.A.V has a great and successful college life and career.

- Ritu Devkota
(Topper 3rd year)

Laboratory Exposure

During 1st Year

Students are Exposed to Hot Air Oven, Autoclave, Incubator, UV Safety Hoods, Spectrophotometer.

Working in safety cabinet.

Microscopy of eukaryotes.

Catalase Test, Oxidase Test, Urease Test, Suger Fermentation, Indole Test, MR- VP Test, Citrate Test, TSI Test, Nitrate Reduction Test, Starch Hydrolysis, Lipid Hydrolysis, Protein Hydrolysis,

During 2nd Year

Solutions and Buffers Preparation, Qualitative and Quantitative Estimation of various types of Carbohydrates, Lipid, Amino acid, Protein estimation, Enzyme activities analysis, uses of TLC, SDS PAGE, detection of Microorganisms from various Plants and Plants products, carry out fermentation, extraction, Purification and Estimation of Enzymes, Isolation of Economically Important Bacteria, Mushroom Cultivation, Tissue Culture, Kinema Preparation, Wine Fermentation, Food Adulteration Test, Cholesterol Level Determination

Isolation and Identification of Soil Microorganisms, Azotobacter, Rhizobium, Cellulolysis, Cyanobacteria, Phosphorus Solubilisers, Count of Micro-Organisms in Different Foods, Dairy Products, Test for Milk Quality, Microbial Assessment of Animal Products, Fruits, Microbial Limit Test, Bioburden Test, Biofertilizer, Vermiform Compost

During 3rd Year

Differential Centrifugation for Cell organelles separation, Cell counting, Extraction of Brain lipid, Sub cellular Fractionation, DNA Profiling, RNA Profiling, Microbial Limit Test, MIC determination, MBC determinations, Sterility Testing, Antibiotics Assays, Chromatography

During 4th Year

Medical Microbiology

Septic Precaution in Microbiological Laboratory, Collection and Transportation of Clinical Specimens, Staining, Preparation of Culture Media, Biochemical Media, Differentiation of Bacteria by Biochemical Tests, Enzymatic Tests, Serological Test, Sample Collection and Diagnosis of Mycotic Infections, Preparation of Fungal Culture Media, Examination of Intestinal and Tissue Parasites

Public Health Microbiology

Bacteriological Examination of Drinking Water (Most Probable Number, Membrane Filtrer, Physio-Chemical Parameters of Water Test, DO, BOD, COD, Residual Chlorine, Ammonia, Nitrate/Nitrite, Sulphate, Chloride, Iron), Water Treatment, Assess Air Pollution, Rapid Diagnosis of Viral Disease (HIV, Hepatitis B, Hepatis C, Rotavirus) and Disease Reporting Techniques

B.Sc. Microbiology

	1st Year	2nd Year	3rd Year	4th Year
Microbiology	• Basic tools and Techniques. • Handling of Microorganisms.	• Biochemistry and Microbial Biotechnology. • Application of microorganisms for industrial production.	• Molecular Cell Biology Better understanding of both prokaryotes and Eukaryotes at molecular level Pharmaceutical Microbiology and Quality Management Applications of Microorganisms for drugs development and quality Improvements Exposure to the Computational science and biology for the research tool	• Agriculture and Food Microbiology Develop Skill on handling soil, food Microorganisms and their application • Medical and Public Health Microbiology Handling and processing of different clinical samples • Instrumentation in Microbiology Leans o handle he different analytical instruments for research and development • Computational Course skilled with handling of different computer operations • Methods in Microbiology • Project Work Enabling students for conducting research using scientific tools and techniques and writing scientific papers
Zoology	• Non- chordate and Protochordata. • Handling non-chordates as well as Protochordates.	• Chordate and animal behavior. • Understanding the evolution of animal life.	• Physiology, Genetics and Molecular biology • Understand the animal life in more advanced way.	
Botany	• Diversity in lower as well as higher plants. • To recognize and diversify of plants.	• Internal and external organization of higher plants. • Experimentation with plants.	• Plant Biochemistry and Biotechnology and Evolution. • Agriculture product improvement.	
Chemistry	• Basic inorganic, organic and physical chemistry. • Accurate experimental work.	• Basic principle and their application for betterment of society.	• General Chemistry, Biochemistry and analytical Chemistry. • Analyze any substance chemically and conclude the finding.	
Scientific Communication	• Aim to make the students skillful in writing and communication.			

SCOPES


Higher Studies


Research Assistant


Food Industry


Beverage Unit


Chemical Industry


Hospitals and Pathology Laboratory


Pharmaceuticals


Dairy Industry

Bachelor of Science in Physics (B.Sc. Physics)

Physics is the most fundamental of all the sciences and has fuelled most of the scientific and technological developments that we take for granted today. A part from basic discoveries, such as electromagnetism and nuclear energy, physics is also the science behind modern technologies such as the Internet and mobile phones. Life-changing developments such as the silicon integrated circuit and MRI scanners were also pioneered by physicists. Today physicists continue to lead discovery, invention and innovation in revolutionary but yet-to-be-exploited physics such as quantum information and communications technology (q-ICT), nano-system design, ultra-fast molecular switching, terahertz medical imaging and so on.

Objectives

Through the four-year B.Sc. program affiliated to TU, we are committed to enabling the students to be professionals as academecian, researcher of technology and innovation. We also aim to make our students competent in the field of science and technology. So that they will be able to serve the demand both at home and abroad.

Number of Seats : 40

Eligibility : Sound academic records in I.Sc. or +2 level (Physics) with minimum C Grade in each subject.
(A level with minumum E Grade)

Course Duration : Four Years

Course Structure

First Year

Physics, Math, Chemistry/Statistics
Interdisciplinary Subject- Scientific Communication

Second Year

Physics, Mathematics, Chemistry/Statistics
Applied Statistics

Third Year

Physics with Mathematics
Research Methodology
Interdisciplinary Subject

Forth Year

Quantum Mechanics, Nuclear Physics and
Solid State Physics, Material Science/Project
Computational Course

Bachelor of Science in Geology

Geology is the core discipline of the earth sciences and encompasses many different phenomena, including plate tectonics and mountain building, volcanoes and earthquakes, and the long-term evolution of Earth's atmosphere, surface and life. Geology science is of paramount importance to locate Earth energy sources, how to extract them from Earth more efficiently and at a lower cost, and with the smallest impact on the environment. This study will primary focused on the study of identification and properties of rocks and minerals of different continents. It also provide the knowledge about Geohazards as well as climate change.

Objectives

This course enable the students to recommend the action plans in order to minimize the damages caused by various Earth process such as floods, tsunamis, landslides, volcanoes, earthquake etc. which can protect the overall civilization from these earth process. It makes the students knowledgeable soil and mineral properties as well as their properties so that they could recommend the proper areas for building new cities and residential neighborhoods in order to prevent future damage.

Number of Seats : 40

Eligibility : Sound academic records in I.Sc. or +2 level (Biology/Physics) with minimum C Grade in each subject.
(A level with minumum E Grade)

Course Duration : Four Years

Subject Combination:

Geology+Physics/Statistics/Botany/Chemistry+Math/Zoology

Course Structure

First Year

Geology, Physics/Statistics/Botany/Chemistry+ Math/Zoology
Interdisciplinary Subject- Scientific Communication

Second Year

Geology, Physics/Statistics/Botany/Chemistry+ Math/Zoology
Interdisciplinary Subject - Applied Statistics

Third Year

Geochemistry & Geophysics, Geomorphology, Geohazards and Climate Change
Interdisciplinary Subject - Research Methodology

Forth Year

Exploration of Geology and Mining Geology, Engineering Geology and Hydrology
Interdisciplinary Subject - Fundamental of Economics and Management Computational Course

B.Sc. Physics

	1st Year	2nd Year	3rd Year	4th Year
Physics	• Basic physics. • For higher study and research in physics.	• Modern physics and Optics. • Principle behind the different type of innovation in field of technology.	• Mathematical Physics, Classical Mechanics and Space science. • For higher studies and research in physics.	• Quantum Mechanics, Nuclear Physics, Solid State Physics, Material Science and Econophysics. • Enhance the research capacity of students be become a scientist.
Chemistry	• Basic inorganic, organic and physical chemistry. • Accurate experimental work.	• Basic principle and their application for betterment of society.	• General Chemistry, Biochemistry and analytical Chemistry. • Analyze any substance chemically and conclude the finding.	
Statistics	• Basic concept of statistics. • Apply techniques for different data analysis.	• Theoretical and applied knowledge in probability and statistical inference. • Make able to apply them.	• Statistical inference. • Application in various research data analysis.	
Mathematics	• Basic mathematical tools. • Application of different mathematical formula.	• Depth and good theoretical back ground in algebra. • Apply in various branches of mathematics, physical and social science.	• Linear algebra and Modern algebra. • Promote the application in various fields of sciences.	
Scientific Communication	• Aim to make the students skillful in writing and communication.			

SCOPES


Higher Studies


Research Assistant


Teaching


Technician in Laboratory


Laboratory Demonstrator


Powerplant Operator


Sales person in Technical Industry

B.Sc. Geology

	1st Year	2nd Year	3rd Year	4th Year
Geology	• Fundamental Geology, Crystallography and Mineralogy. • Identification of different types of rocks.	• Petrology, Structural Geology and Sedimentology. • Finding different types of Natural Resources.	• Geochemistry and Geophysics. • Conduct different types of Geological research for Human Welfare.	• Exploration Geology and Mining Geology, Engineering Geology, Hydrogeology. • Fundamental of their management. • Mining research and industrial application.
Physics	• Basic physics. • For higher study and research in physics.	• Modern physics and Optics. • Principle behind the different type of innovation in field of technology.	• Mathematical Physics, Classical Mechanics and Space science • For higher studies and research in physics.	
Chemistry	• Basic inorganic, organic and physical chemistry. • Accurate experimental work.	• Basic principle and their application for betterment of society.	• General Chemistry, Biochemistry and analytical Chemistry. • Analyze any substance chemically and conclude the finding.	
Mathematics	• Basic mathematical tools. • Application of different mathematical formula.	• Depth and good theoretical back ground in algebra. • Apply in various branches of mathematics, physical and social science.	• Linear algebra and Modern algebra. • Promote the application in various fields of sciences.	
Zoology	• Non- chordate and Protochordata. • Handling non-chordates as well as rotochordates.	• Chordate and animal behavior. • Understanding the evolution of animal life.	• Physiology, Genetics and Molecular biology. • Understand the animal life in more advanced way.	
Botany	• Diversity in lower as well as higher plants. • To recognize and diversify of plants.	• Internal and external organization of higher plants. • Experimentation with plants.	• Plant Biochemistry and Biotechnology and Evolution. • Agriculture product improvement.	
Scientific Communication	• Aim to make the students skillful in writing and communication.			

SCOPES


Higher Studies


Research Assistant


Manufacturing Industry


Water Corporation Board


Petroleum Cooperation


Mining Industry


Geology Consultant

Future Top Ten Jobs in the World

Microbiology

Transhumanist Surgeon

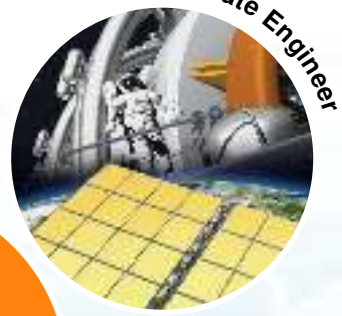
Nanobot Immune System Augmenter

Human DNA Programmer

Vertical Farmer

Geology

Climate Engineer



Physics

In Store 3D Fabricator

Domestic Robotician

AI Trainer

Space Elevator Attendant

International Conference

2nd Position winner of Poster Presentation Competion in International Conference

Social Responsibility

Guest Lecture by Assoc. Prof. Dr. Meghraj Banjara, HOD, Central Department of Microbiology, TU

Leprosy Mission Nepal Visit

Muktinath Tour

Visit to Water Treatment Plant

Workshop on Job Interview and Personality Development

Workshop on Research Data Analysis

Yoga and Meditation

Mumbai Visit

MoU

The College has collaborated with various esteem international institutions and universities in order to enhance its teaching learning process, academic exchange of students and faculties, research exposures, Higher Career Opportunities and exposure visits in international arena.

- Vidya Pratisthan's Arts, Science and Commerce College, Baramati, India
- Yogeshwari Mahavidhyalaya, Beed (M.S.), Ambajogi, Maharastra, India
- Shri Shivaji Mahavidhyalaya, Barrsi, Maharastra, India
- Yashwantrao Chawhan Arts, Commerce and Science College, Lakhandur, Maharastra, India

Practical Achievement

- Complete test for Drinking Water (Physical, Chemical as well as Microbiological)
- Routine Blood test (Blood Grouping , Haemoglobin Test , Cholestrol Test, Sugar Test, Lipid Profile Test, Blood Cell Count, HIV Test , Malaria Test, Treponema Test, Widal Test, Blood Culture , Thin and Thick Smear Test of Parasite, Kala Azar Test)
- Complete Laboratory Test of Milk (Physical, Chemical as well as Microbiological)

Research Works

- Microbial Assessment of Air
- Microbial contamination of cell phone
- Bacteriological Profiling of Nasal swabs of school children
- Antimicrobial Activity of Herbal Plants
- Microbiological Quality Assessment of Drinking Water
- Isolation, Identification and Antimicrobial Activity of Actinomycetes
- Tissue Culture
- Vemicomposting - for the betterment of Agriculture
- Efficiency of a soap and sanitizer
- Antimicrobial property of honey
- Bacteriology of fruit juices
- Antimicrobial efficiency of different toothpaste on oral hygiene
- Biogas production
- Water analysis of swimming pool
- Detection of parasites from raw vegetables
- Preparation of nanoparticles

Achievements

Research Paper Published in Tribhuvan University Journal of Microbiology 2018

Life Skills

Vermi Compost Preparation

Plant Tissue Culture

Mushroom Cultivation

DAV BSc Prospectus 2019

www.davcollege.edu.np

...in the service of education

D.A.V. COLLEGE

Affiliated to TU

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HOSTEL
Facility Available