

Commitment to Excellence

B Sc | M Sc
MICROBIOLOGY

Tribhuvan University Affiliated

KCST

**Kathmandu College of
Science & Technology**

www.kist.edu.np

New Frontiers

KIST is a modern institution ready to meet the challenges of 21st century education. Its professional team of educators is committed to excellence in teaching-learning and academic performance. We have set new standards so that our students can change themselves and shape their future better. This is what we strive to do and what we want to be.

Introduction

Established in 1995, KIST – Kathmandu Institute of Science and Technology – has a 25-year-long history. KIST runs Bachelor's programmes (BSc Microbiology, BBA, BIM, & BBS) and Master's programmes (MSc Microbiology & MBS) along with +2 in Science & Management.

An educational pioneer in Nepal, the College has been providing qualitative education. Our qualified and experienced faculty members are dedicated to the delivery of high-quality education. We have an academically competitive environment that brings out the best among students.

KIST offers many vital professional activities alongside wide-ranging co-curricular and extracurricular activities. The College has different clubs that support the interests & goals of its students. We also encourage KISTians to serve society through useful actions.

The College has its own buildings with sufficient amenities boosting academic effectiveness. These buildings are well engineered and safe. Our campus is spacious enough for sports and other purposes. We are most centrally located in a serene, green, and open spot next to the energizing waterscape of Kamalpokhari pond.



**Kathmandu College of
Science & Technology**



Dear All

It gives me immense pleasure to welcome you to KIST and its first-rate programmes. We are happy to inform you that we run Bachelor's programmes – BSc, BBA, BIM, & BBS along with Master's programmes – MSc & MBS, all affiliated to Tribhuvan University (TU).

Of those of you who are interested in the sought-after field of Microbiology, I'm delighted to welcome you to our excellent Tribhuvan University affiliated BSc & MSc Microbiology programmes at KCST.

Choosing where to continue your education after your +2 or Bachelor's is a major life-changing decision. As Principal, I strongly believe that KIST will be a choice you will cherish if you are determined to achieve much during your higher studies.

The College provides a rich teaching-learning environment where our faculty focuses on course content taking every opportunity to instill knowledge and understanding of key concepts alongside practical knowledge. Teachers provide individualized instruction to develop students' professional skills and empower them to be innovative and to solve problems. All this enables KIST students to excel academically & professionally.

We, the new team of educators at KIST, plan to transform our students into confident learners with a passion for lifelong learning, career advancement, and personal growth.

We are certain that our esteemed graduates would leave the College accomplished in academic & job-related skills and equipped to play a leading role in whichever walk of life they choose as dynamic global citizens & institutional leaders.

Exciting times are definitely ahead of us! And I hope you too choose to be part of our continuing success...

Best regards

Dr Dambar Singh Air
Principal

Welcome





TU-Affiliated

Bachelor's Courses

- Bachelor of Science **BSc Microbiology**
- Bachelor of Business Administration **BBA**
- Bachelor of Information Management **BIM**
- Bachelor of Business Studies **BBS**

Master's Courses

- Master of Science **MSc Microbiology**
- Master of Business Studies **MBS**

University Recognition

Tribhuvan University affiliated, Kathmandu College of Science & Technology (KCST) runs BSc & MSc Microbiology programmes and KIST College of Management runs BBA, BIM, BBS & MBS programmes.

KCST

Kathmandu College of
Science & Technology

Microbiology

Unique opportunities to find novel solutions to global
issues in life science, medicine & public health



Career Prospects

Microbiology is a pure science and rapidly developing as an interdisciplinary subject that occupies a distinct position in various career fields whether in the public or private sector.

The need for qualified microbiologists has been growing fast, especially for basic research and practical applications. Academic, scientific, technological, industrial, environmental, research & development, and service organizations perpetually look for dedicated professionals.

Several career paths, including entrepreneurship, exist for individuals interested in studying microbes, or using microbiological techniques in their daily job activities. At KCST, scholars imbibe deep know-how since this is the leading private institution for the advancement of Microbiology in the country and thus become eligible for fine jobs.



Microbiologists, depending on their level of education and training, can choose their careers, or even create opportunities, for themselves according to their interests within the country and abroad. Career opportunities include:

- **Hospitals & Medical Laboratories**

Medical & Clinical Microbiologists, Bacteriologists, Mycologists, Protozoologists, Immunologists, Parasitologists, and Virologists

- **Pharmaceutical Companies**

Pharmacologists, Quality Control Officers, Medical Representatives, and Marketing Managers

- **Governmental & Public Sector**

General Microbiologists, Public Health Microbiologists

- **NGOs & INGOs**

Project Coordinator, Environmental & Healthcare Microbiologists

- **Teaching, Research & Development**

Teachers, Instructors, and Research & Development Scientists

- **Agriculture & Manufacturing**

Agricultural & Industrial Microbiologists and Operations Managers

- **Food & Beverage and Chemical Industries**

Quality Assurance Officers and Food Microbiologists

- **Self Employment**

Microbiology Laboratory Entrepreneurs, and Consultants

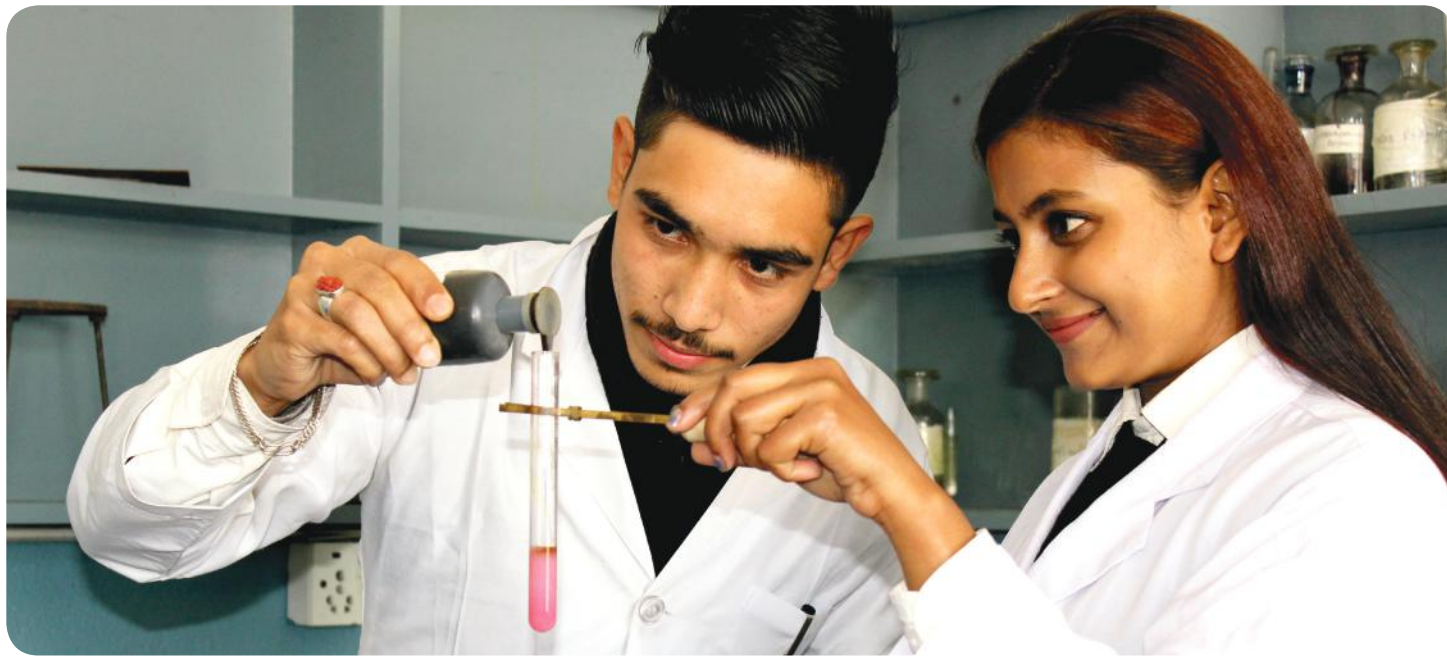
KCST

Kathmandu College of
Science & Technology

BSc Microbiology

Understanding microbes & microbial processes better
through comprehensive & interconnected learning





BSc Microbiology is an inter-disciplinary 4-year course that studies microbes thoroughly to promote life sciences and benefit all living things, and as a subject has wide SciTech, environmental, or health related applications. The course empowers graduates to work as environmental microbiologists, in the health care field, or in the food production, agriculture and industry sectors. Graduates acquire specialized analytical knowledge to meet the demands of the contemporary market and learn how to bridge the gap between industrial needs and the education with which they have been equipped. They develop the competence to work anywhere in different institutions including those relating to education and research.

Key Learning Outcomes

- Understand the interesting world of microbiology through excellent education and research to explore the field
- Assimilate conceptual knowledge of microorganisms and their role in different related fields to combat diseases
- Gain theoretical and applied knowledge of microbiology in cross-disciplinary fields to become professionally capable
- Obtain specialized know-how about selected areas of microbiology to tackle real-world problems
- Explore various microbiological techniques to analyze better for effective solutions and remedies







Learn – Explore – Create

Strikingly, KIST encourages learning. We get numerous opportunities to learn, explore, and create, while teachers ensure everyone grows and thrives. Doing research-based microbiology here was the right decision, and now I have experiential knowledge to succeed in a competitive field.

Serveshwor Pradhan
BSc 1st Year



Exceptional Bachelor's

If I hadn't joined KCST, I would have missed much: Everything here is exceptional! The atmosphere is just terrific. Studies are great with superb, friendly faculty members – reputed experts in their subjects. Plus there are numerous field visits and tours offering most beneficial interaction. The College changed me. Its extracurricular activities developed my personality, made me physically stronger, and built solid social bonds. I'd suggest that sincere students ought to have a look and seriously consider studying at this college. Surely, your life would improve considerably, and you'd succeed.

Agya Pandey
BSc 3rd Year

Course Structure

FIRST YEAR

Course code	Course Title	Full Marks
MB 101	General Microbiology	100
MB 102	General Microbiology Practical	50
CHEM 101	Basic Chemistry I	100
CHEM 102	Basic Chemistry I Practical	50
Zool.101	Non chordate and Protochordata	100
Zool. 102	Non chordate and Protochordata Practical	50
SC.101	Scientific Communication	50

SECOND YEAR

MB 201	Biochemistry and Microbial Biotechnology	100
MB 202	Biochemistry and Microbial Biotechnology Practical	50
CHEM 201	Basic Chemistry II	100
CHEM 202	Basic Chemistry II Practical	50
Zool. 201	Chordata, Comparative Anatomy and Evolution	50
Zool.202	Chordata, Comparative Anatomy and Evolution Practical	50
Appd. Stat. 201	Applied Statistics	50

THIRD YEAR

MB 301	Molecular Cell Biology	100
MB 302	Molecular Cell Biology Practical	50
MB 303 (Elective I)	Pharmaceutical Microbiology and Quality Management	50
Zool.301	Physiology, Genetics and Molecular Biology	100
Zool. 302	Physiology, Genetics and Molecular Biology Practical	50
Zool. 303 (Elective)	Natural Resource Management	50
RM 305	Research Methodology	100

FOURTH YEAR

MB 401	Agriculture and Food Microbiology	100
MB 402	Agriculture and Food Microbiology Practical	50
MB 403	Medical and Public Health Microbiology	100
MB 404	Medical and Public Health Microbiology Practical	50
MB 406	Project Writing and Presentation	100
MB 407	Bioinstrumentation	50
COM 408	Computational Course	50

MSc Microbiology

Promoting excellent R & D in Microbiology to benefit microbiologists, society & the environment



MSc Microbiology is a competitive international-level research-oriented 2-year 4-semester course with adequate hands-on exposure that covers the disciplines of General Microbiology, Immunology, and Microbial Biochemistry along with one selection for specialization from four disciplines – **Medical Microbiology, Public Health Microbiology, Food Microbiology or Agricultural Microbiology.** The course enables postgraduates to work as qualified microbiologists, molecular biologists, researchers, and scientists according to national and international demand. Postgraduates become capable to use skills & techniques of modern molecular biology like Biostatistics in basic science research or in applied research areas like Epidemiology. They can also work proficiently as qualified scientists across a wide spectrum of job or organizational requirements.

Key Learning Outcomes

- Apply the conceptual and practical knowledge gained to promote better understanding of diverse multi-disciplinary fields related to microbiology
- Get acquainted with recent advances in the microcosm to perform research and make the outcomes available to the global scientific community
- Gain in-depth & specialized knowledge of various areas of microbiology to utilize the expertise for intended outcomes
- Explore various microbiological techniques to perform better across various areas of specialization in this field
- Enhance professional thinking to promote the best interests of science and create a better academic and professional environment



Nurture Professional Skills

Surely, this institution has experienced administrators and highly-qualified teachers. Although this yields personal satisfaction, more importantly, the College motivates students by recognizing their attributes and building up their self-confidence. KIST nurtures professional skills, and helps us focus on our goals.

Suraj Subedi
MSc 3rd Semester



Do Your Master's Here

Doing my Master's at this amazing institution has made me proud! KIST is true to its motto, Commitment to Excellence, as it provides the best to students in education and ECAs. Its environment's great, and the faculty-cum-staff offer transformative opportunities.

Ashma Shrestha
MSc 3rd Semester

Course Structure

Semester I – The same in all the streams

Course Code	Course Title	Credits
MB501	Advances in Microbiology	3
MB502	Immunology	3
MB503	Microbial Genetics & Molecular Biology	3
MB504	Biochemistry and Biotechnology	3
MB505	Practical on (MB501+MB502)	2
MB506	Practical on (MB503+MB504)	2
Total		16

Discipline I: Public Health Microbiology

Semester II		
Course Code	Course Title	Credits
MB551	Human Anatomy & Physiology	3
MB552	Applied Environmental Microbiology	3
MB553	Fundamentals of Epidemiology	3
MB554	Microbial Systematics	3
MB555	Practical on (MB551+MB552)	2
MB556	Practical on (MB553+MB554)	2
Total		16
Semester III		
MB601	Research Methods and Biostatistics	3
MB602	Public Health Microbiology	3
MB603	Emerging Infectious Diseases	3
MB604	Public Health Laboratory	3
MB605	Practical on (MB602)	2
MB606	Practical on (MB603+MB604)	2
Total		16
Semester IV		
MB651	Hospital/Field Based Internship	8
MB652	Dissertation	8
Total		16

Discipline II: Medical Microbiology

Semester II		
Course Code	Course Title	Credits
MB551	Human Anatomy & Physiology	3
MB557	Systemic & Diagnostic Bacteriology – 1	3
MB558	Systemic & Diagnostic Virology – 1	3
MB559	Systemic & Diagnostic Parasitology – 1	3
MB560	Practical on (MB551+MB557)	2
MB561	Practical on (MB558+MB559)	2
Total		16
Semester III		
MB601	Research Methods and Biostatistics	3
MB607	Systemic & Diagnostic Bacteriology – 2	3
MB608	Systemic & Diagnostic Virology – 2	3
MB609	Systemic & Diagnostic Mycology	3
MB610	Practical on (MB607)	2
MB611	Practical on (MB608+MB609)	2
Total		16
Semester IV		
MB635	Hospital Based Internship	8
MB654	Dissertation	8
Total		16

Learning at KIST

Making a difference through excellent teaching-learning in a stimulating environment



High-Quality Education

Pursuing Academic Excellence

Dedicated Faculty

Our committed and experienced faculty delivers excellent teaching-learning. Tutors supervise academic performance, interact with students, and give needed guidance. Our faculty is hand-picked from professionals, with experience in the industry and expertise in their fields, who have engaged in innovative, high impact basic and applied research across the broad discipline of science through knowledge exchange. KIST supports ongoing professional development and training of its faculty members.

Vibrant Teaching-Learning

Our teaching-learning approach is reflected in on-campus studies, with students making the most of their academic experience. Fully supporting students' aspirations, the College is a center for learning where they can prosper in a supportive, encouraging and motivational environment. We focus on preparing students for both employment and further studies or research, placing emphasis on knowledge that has application in a multitude of professions.

Standard Assessment

Our academic evaluation process is based the learning outcome assessment of each student. We hold that such assessment and academic performance are interrelated and best proven through examination results. Exams are used for assessing the students in an internationally competitive arena whereby a full insight into each student's attained knowledge and capabilities is gained.



Effective Tutorials

KIST's well-designed tutorial system truly improves the academic performance of students. This is a unique scholastic opportunity at the College to get individual attention and indispensable support to learn better. The purposes of tutorials are to develop a deep understanding of the topics introduced in lectures and to apply the knowledge acquired to solve problems. The College organizes pre-exam preparation camps to improve students' results.

Laboratory Work

The College offers exceptional lab facilities to its students for nurturing innovative skills in teaching, learning and research. We provide enough practicals to meet syllabi standards and students' hands-on learning needs. All this greatly helps students to become familiar with science & technology in real or applied situations. Our instructors and lab staff provide close support to students and instill useful practical learning.

Project Work & Research

KIST provides students with ample opportunities to integrate their coursework knowledge with professional applications by project work & research. Students gain workplace skills and benefit from assistance & supervision in carrying out such tasks. The KIST R & D Unit organizes valuable research and development activities through training and special or pilot projects. The Unit gives KIST's Bachelor's and Master's courses a distinct professional edge.

Infrastructure & Campus

Stimulating Academic Environment

College Buildings

KIST has purposeful spacious academic buildings with abundant amenities. The construction is structurally sound and made with a view to run this educational institution effectively. There is enough space for wide-ranging activities and large classrooms for flexible learning environments. The College also has a big library, seminar halls, faculty and administrative offices for plentiful study opportunities or requirements.

The Premises

The College grounds are fairly large and contain sports facilities like basketball, badminton, and table tennis. They are used for multifarious college events or other important outdoor purposes. Our premises are wide, open, clean and fresh with adequate greenery.

Ideal Location

KIST is ideally located in a serene and lush spot near the refreshing Kamalpokhari pond in central Kathmandu making it easily accessible. We offer an ideally located, model campus with modern classrooms and quiet study areas to all our current or prospective students.

Safe Atmosphere

The setting of KIST is safe and peaceful in every way. The physical infrastructure has been assembled strictly according to governmental guidelines keeping in view, among other technicalities, seismic hazards. All our constructions housing numerous facilities are well maintained and regularly inspected by engineers for functionality and wellbeing. As a result, our environment is most conducive to all activities concerning the academic accomplishment and overall development of students.

Laboratories

The College has state-of-the-art laboratories fully equipped according to the norms & standards of Tribhuvan University to which its courses bear affiliation.



Cutting-Edge Facilities

Utilizing Our Services

Library

KIST has a spacious library of about 10,000 books including textbooks, reference, research & project reports, and audio-visual materials. Online access to international library networks and latest top journals, magazines, and newspapers is available. The library timing is 6:30 am – 6:30 pm, Sunday to Friday.

ICT

KIST has a networked environment with a centrally located ICT Centre with uninterrupted internet connectivity and WIFI. The College also has state-of-the-art computer labs to encourage e-learning and enhance computer skills so necessary in the contemporary knowledge socio-economy.

Canteen

The College has a canteen for students and employees in its premises. At KIST, the food and beverage including drinking water quality is checked cautiously – periodically or randomly and physically or scientifically. We ensure that all food items are fresh, clean, nutritious, chemical or pest-free, and as affordable as feasible.

Virtual Classes & Conferences

KIST provides Virtual Classes for lectures, assignments, tutorials & note taking. These help learning better through digital inputs & outputs and greatly reinforce classroom teaching & self-study. Conference halls facilitate organizing lectures and conferences that are regular events on the campus. The halls are equipped with the latest educational technology for webinars and online workshops.

Project Labs

KIST has cutting edge labs for project work & research. Students can put their theoretical knowledge to use and learn to work independently. Modern equipment along with the latest devices and techniques allows students to apply theory to function and to do research. Experienced instructors ensure quick and lasting assimilation while encouraging innovative experimentation and creative application.

Be Involved

Extracurricular Activities

We believe ECAs play a rather meaningful role in a student's education and life. KIST's extracurricular activities are indeed a vibrant side of its campus life making students fit in body, mind, and spirit to take on the challenges of the 21st century.

Clubs

The College has many stimulating clubs for the students' diverse areas of interest. KIST clubs regale and refresh our hard working students and provide them a full college experience and a healthy psychological outlet.

Social Service

KIST motivates its students to serve society in as many ways as they possibly can. Many of our students volunteer for blood donation, public health awareness, sanitation programs, and natural calamity relief.

Games & Sports

The College has many games and sports including basketball, badminton, and table tennis. We also hold many intra- and inter-college competitions or friendly matches to increase students' participation and to inspire them to perform better and better.

Co-Curricular Activities

CCAs at KIST certainly enrich students' lives by developing their personalities and academic profiles through productive engagement. The College has varied co-curricular activities that galvanize our youngsters to do even better and stay ahead.

Seminars & Workshops

The College organizes frequent seminars and workshops to inform students about applied science and technology. These occasions are about specific subject areas and have an interactive environment for students to learn from experts and orientate themselves.

Publications

KIST regularly publishes magazines and newsletters managed by students. Their articles go a long way in making such productive output interesting and memorable apart from fostering students' creative & technical skills.

Professional Competitions

The College organizes numerous competitions to promote applied science. These include different kinds of activities such as project competitions, training camps, and exhibitions.

Alumni Engagement

The College extends opportunities for continued engagement to its esteemed alumni in Nepal and elsewhere. The *alma mater* believes in building up a web of mutually beneficial relationships and a free exchange of ideas or information. All this greatly profits our students and the institution itself.

Get Scholarships

Supporting Your Education

KIST Bachelor's & Master's Scholarships are awarded to exceptional students in order to recognize and promote academic excellence. There are many Scholarships for commendable students who satisfy expected norms.

University Scholarships

The College provides scholarships to deserving students according to guidelines of Tribhuvan University.

Based on +2 or BSc Marks/Grades & Entrance Marks

KIST awards Scholarships to its students who get high marks/grades in +2/Equivalent-level exams for BSc, at the Bachelor's level for MSc, or its Entrance Exams. These Scholarships are allotted in order of mark-based merit per seat availability by given deadlines.

Performance-Based Scholarships

Students who get the top positions in the University Exams and Term Exams are rewarded with Scholarships. These Scholarships are allotted in order of mark-based merit per seat availability according to the guidelines for scholarships.

Note: In case a student is eligible to get two, or more, scholarships, he or she shall be allotted only one scholarship whichever is of greater, or the greatest, value.



Join Us

Admissions

Students interested in joining BSc & MSc Microbiology at KCST would need to go through a fair but thorough admission process.

Eligibility

BSc: Applicants must have taken 200 marks full course of Biology. They need at least a second division in +2 or an equivalent exam. For students with results in grading system, they must have secured at least "C" grade in each subject. For A level students, they must have minimum "E" grade.

MSc: Applicant must have a BSc degree with Microbiology or Lab Technology or Biochemistry from a recognized University.

Entrance Exam Application Form

University Entrance Exam Application forms are available at all colleges including KCST which offer these programmes. Applicants should submit these forms duly filled in with supporting documents and photographs by the given deadline.

Entrance Exam

Getting through the University Entrance Exam is mandatory for admission. Sample Test Papers can be obtained from KCST along with Application forms.

KCST Admission Form

Successful students in the University Entrance Exam should fill in the KCST Admission Form. Students who have filled in the University Entrance Exam forms in any other college are also eligible to apply here.

Personal Interview

These students need to appear for the Personal Interview immediately thereafter. They ought to be accompanied by parents or guardians for this interview.

Offer Letter

Selected applicants are handed Offer Letters for admission. They need to submit their acceptance along with needed original certificates or testimonials within the stipulated period to get admitted.

Enrolment

Once the College receives a letter of acceptance, it will confirm admission forthwith subject to the payment of fees.



Dedicated Faculty

Anup Basnet (*Biochemistry*)
Archana Katuwal (*Microbial Genetics and Molecular Biology*)
Bimal Dahal (*Microbiology, Instrumentation*)
Dr Kishor Pandey (*Zoology, Parasitology*)
Dr Rameswor Prasad Singh (*Zoology*)
Dr Yogendra Shah (*Microbiology*)
Jyoti Amatya (*Microbial Systematics, Bacteriology*)
Kalyan Subedi (*Bacteriology, Microbial Genetics and Molecular Biology*)
Keshav Raj Bhandari (*Organic Chemistry*)
Lokendra B Bamma (*Inorganic Chemistry*)
Nirajan Thapa (*Immunology, Mycology*)
Prakash Amatya (*Biostatistics, Research Methodology*)
Prakash Khanal (*Scientific Communication*)
Pushpa Man Shrestha (*Microbiology*)
Puspa Raj Dahal (*Microbiology*)
Rabin Paudyal (*Microbiology*)
Sandeep Thapa (*Biochemistry*)
Sanjay Dhungana (*Computational Course*)
Sanjay Shrestha (*Zoology*)
Shrawan Kumar Regmi (*Physical Chemistry*)
Sujata Dahal (*Microbiology*)
Umesh Kaji Manandhar (*Microbiology*)

Committed Staff

Abani Tandukar
Arjun Pd Sharma Pudasaini
Balaram Thapa
Basanta Blown
Basulal Deula
Basundhara Chhetri
Bhagwati Khatri
Bijay Thapa
Bishnu Raya
Bishwash Chaudhari
Chandan Deula
Chandra Bdr Gurung
Chhiring Tamang
Chintamani Rijal
Durga Basnet
Giriraj Pokhrel
Govinda Aryal
Hari Prasad Niraula
Indu Shrestha
Khindra Kafle
Madhu Bilas Neupane
Man Bahadur Rai
Mousami Shreepali
Mukesh Chandra
Narayan Budhathoki
Narayan Mangrati
Naresh Kr Sunuwar
Navaraj Lamichhane
Nil Prasad Subedi
Parmila Rai
Rabina Shakya
Pradeep Khadka
Pramod Thapa
Raj Kumar Khadka
Ravi Khadka
Sangita Dhakal
Santoshi Bist
Shambhu Singh Maharjan
Shani Kumar Khulal
Shisam Shrestha
Somnath Aryal
Subash Chandra Panday
Subash Chaudhari
Sunita Shrestha
Suraj Air
Surya Bdr Thapa
Umesh Karmacharya



Our Toppers Notable Results

BSc

Santosh Rajbahak, *Batch 2063*
 Pratikshya Bhujel, *Batch 2064*
 Sujan Maharjan, *Batch 2065*
 Pravil Pokharel, *Batch 2066*
 Sujeeta Thakur, *Batch 2067*
 Sastrika Shakya, *Batch 2068*
 Resmita Gurung, *Batch 2069*
 Sanjiv Shrestha, *Batch 2070*
 Shristy Bajracharya, *Batch 2071*
 Sudha Sharma, *Batch 2072*

MSc

Mona Pokharel, *Batch 2062*
 Dhrub Ghimire, *Batch 2063*
 Rabin Paudyal, *Batch 2064*
 Pragya Poudel, *Batch 2065*
 Kalyan Subedi, *Batch 2066*
 Somnath Kafle, *Batch 2067*
 Rachana Shrestha, *Batch 2068*
 Rakshya Tiwari, *Batch 2069*
 Anisha Kumari, *Batch 2070*



Enrichment Activities

Doing Bachelor's or Master's is also about having motivating experiences, being active & remaining healthy, or pursuing activities that provide students opportunities to develop new interests & abiding self-confidence. Such wider achievements as well as good grades are highly valued by universities, institutions, and employers the world over.

Visit – German Nepal Tuberculosis Project – Study of different diagnostic techniques of Tuberculosis in Nepal.

Field Visit – Curex Pharmaceuticals, Kavre – Study of manufacturing, distribution, and quality control of Pharmaceutical products

Workshop – Proposal development on the study of tuberculosis & dengue fever and HIV/AIDS among pregnant mothers

Talk Program – Recent Trends in Microbiology/ Biotechnology – Prof Dr Arvind Madhavrao Deshmukh

Talk Program – Microbiology research for students – Dr Prafulla Shede

Training Program – Proposal Writing and Project Management – Karl Brown

Field Visit – Sericulture Farm, Khopasi, Kavre – Observe silkworm rearing activities

Field Visit – Rainbow Trout Fish Farm, Kakani – Study Rainbow Trout (*Oncorhynchus mykiss*) fish farming alongside its feasibility & suitability in Nepal

Field Visit – Patan Hospital – Study microbiology lab techniques

Field Visit – Lele Forest – Study insect collection techniques

Field Visit – Natural History Museum & Central Zoo – Observational study of different animals

Field Visit – Godavari – Study Biodiversity found in the Botanical Garden and Surrounding Forests.

Field Visit – ICIMOD Knowledge Park – Study Beekeeping techniques

Field Report – Different areas of Kathmandu, Lalitpur & Bhaktapur districts – Study various genetic traits among the local population

Exhibition – Various student projects exhibited at the KIST Fair, Science, and IT & Management Exhibition & Competition



Completed Projects

Occurrence of *Salmonella typhi* in chicken, goat & buffalo meat samples collected from Kalimati, Kathmandu

Microbiological quality evaluation of bottled, jar & reverse osmosis water from Kathmandu valley

Incidence of urinary tract infection in patients visiting the National Public Health Laboratory for urine examination

Parasitic examination, with special attention to helminthes, in stool samples of school children collected from the National Public Health laboratory

Physical, chemical & microbiological assessment of water samples collected from underground sources at the Bagmati River periphery (Sundarijal-Chobhar)

Occurrence of Methicillin resistant *Staphylococcus aureus* in nasal cavities among students of KIST college & children of an orphanage in Kathmandu

Screening of *Bacillus thuringiensis* from the soil & the detection of crystal protein by amido black staining

Screening of amylase & protease producing *Bacillus subtilis* from the soil collected at different locations & detecting enzymatic activity by Starch Hydrolysis & Gelatin Hydrolysis Technique

Using screened amylase producing *Bacillus subtilis* for the production of amylase using wheat bran

Assessing the efficiency of Marcha Samples collected from various locations in Kathmandu, Lalitpur, Sindhupalchok & Rasuwa districts in producing ethanol by using the pure culture of *Sachharomyces cerevisiae* as a standard producer

Comparative evaluation of Leucocyte esterase and nitrite reductase tests with urine culture for diagnosis of urinary tract infection

Isolation and identification of *Cryptococcus neoformans* from pigeon droppings collected from Kathmandu Durbar Square

Quality evaluation of local market vegetables in terms of coliform loads

Isolation of *Bacillus* spp from various soil samples and screening for its amylase and antimicrobial activity and characterizing the produced amylase

Isolation of *Salmonella* spp from various meat samples collected from local meat shops in Kathmandu

Isolation and identification of Methicillin resistant *Staphylococcus aureus* (MRSA) from nasal swab samples collected from students at KIST College

Adulteration tests of milk collected from local suburban dairies

Bacterial etiology and Antibiotic Susceptibility Pattern of isolates in suspected urinary tract infections in patients visiting International Friendship Children's Hospital

Microbiological Quality of different sausages found in Market

Microbial Evaluation of ready to eat food items sold in cart at different places of Kathmandu

Isolation and Identification of pathogenic bacteria from vegetables sample collected from different vegetable markets

Comparative Evaluation of coliforms in bottled and underground water collected from different areas of Kathmandu Valley

Microbial and Physiochemical evaluation of water in different ponds for fishing and washing purpose

Microbiological analysis of street food.

Antibiotic susceptibility pattern of *Salmonella* spp isolated from different chicken meat samples

Quality Assessment of Raw and Pasteurized milk in Kathmandu Valley

Antibacterial Activity of Spices against common pathogenic bacteria

Shaping Your Future

KCST

**Kathmandu College of
Science & Technology**

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www.kist.edu.np

