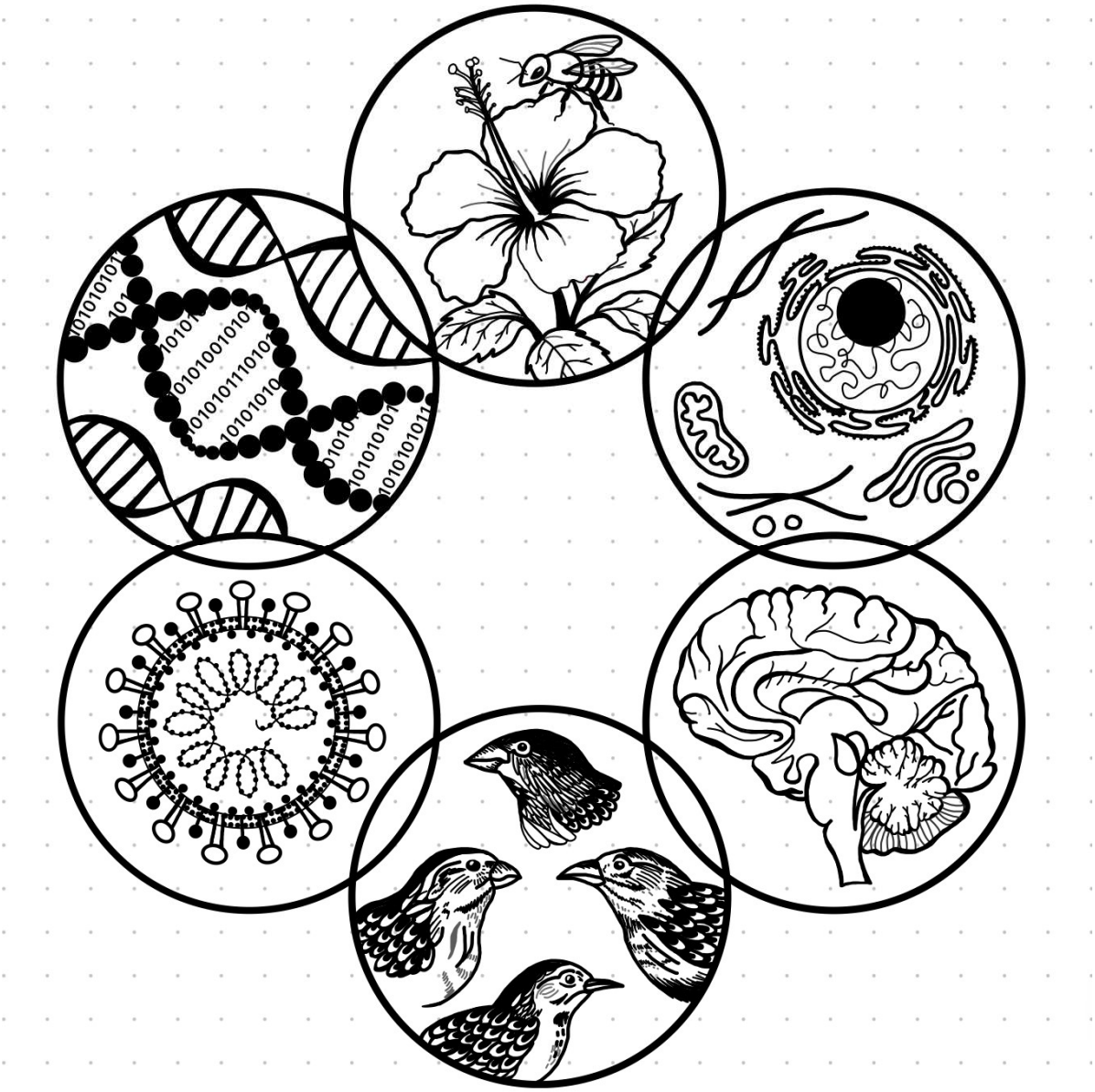
# The Biology UG handbook



## The Biology Programme at Ashoka University

Ashoka is India's leading liberal arts research university. The education at Ashoka emphasises foundational knowledge, thorough academic research based on rigorous pedagogy, and hands-on experience with real-world challenges.

Ashoka University envisions its Biological Science programme to be the cornerstone of its Natural Sciences Programme. Built on the foundations of Chemistry and Physics and drawing upon the resources of other disciplines such as Data Sciences, Climate and Environmental Studies, Social Sciences and Humanities, the Biological Science programme at Ashoka will seek unique directions in and catalyse the emergence of new areas of research.

This handbook brings to you our philosophy of teaching and training in the diverse areas of life sciences, along with a list of current faculty and their research areas and accomplishments, details of teaching and research infrastructure, and undergraduate curricula with brief syllabi.

## Introduction to the Biological Sciences Programme at Ashoka University

Biosciences at Ashoka has adopted multi-dimensional approaches to impart biology education and carry out biology research across various scales. These range from molecules to cells, tissues to individuals, and organisms to ecosystems. Teaching is inherently embedded with research and students of different levels are exposed to modern biological research from their formative years. With a foundation laid in Chemistry and Physics, this programme also involves understanding and learning from other disciplines such as Data Sciences, Climate and Environmental Sciences, Social Sciences, and Humanities. Students and faculty at Ashoka are equal partners in this journey. Our collective aim is to generate new knowledge and explore its applications to address social problems. We also believe that our students would be better prepared to handle future problems facing mankind. While breadth across all scales of size and complexity in the life sciences is important for education and training in the undergraduate and postgraduate levels, we do give sufficient attention to the depth that is needed for productive research outcomes. In this direction, we have recently established The Trivedi School of Biosciences with the help of a generous donation from Mr. Ashok Trivedi. The school promotes advanced research in genomics, Data Science, and emerging areas in disease biology. The school envisages state-of-the-art infrastructure, strengthening faculty numbers in complementary thematic areas, and continuous support and mentorship in the pursuit of high-quality research capable of generating meaningful social impacts. Towards this we have recently

also established the Koita Centre for Digital Health (Ashoka), embedded within the school, with generous support from Rekha and Rizwan Koita, where digital health is seen as a convergence of the genomic and digital revolutions with health and society.

The strength of Ashoka lies in its highly qualified faculty across all disciplines. Our bioscience faculty come trained from all over the world and are some of the best in their respective fields, with expertise in areas that are not represented in India. Our faculty also:

Innovate in education in biological sciences

Carry out experimental research including cellular and molecular studies, field studies, computational/ mathematical/ theoretical biology research, health research.

Collaborate with affiliated faculty from other disciplines such as physics, chemistry, mathematics, social sciences and data science who work on biological problems; the affiliated faculty also contribute to teaching the students in the Biological Sciences programme.

## Overview of the Undergraduate Program

Students of Ashoka start by querying the growth of human thought, the origin and growth of the human civilization in general, and the Indian civilization in particular. They are introduced to the origin of scientific inquiry and study the relationships and interdependencies between science and other domains of human creativity and critical thinking. On this foundation, the fundamental principles of physics are taught to all students, in a way that brings in both, the elegance of the principles of the natural world, and the complexity that still needs to be unravelled. Subsequently, students are introduced to the chemical, biological, and human worlds, not as independent disciplines, but as a continuum of the physical world. Mathematics is taught as a language that connects all these disciplines of science and also as an abstract method by which we understand our surroundings.

Our model of education is concept-based and inquiry-driven, as opposed to the more traditional content-based models. Biology faculty at Ashoka pursue research in those areas that are related to the topics they teach to undergraduate students. Our vision is to integrate research and teaching at all levels of biology education. Biology at Ashoka is rooted in experiments, and does not take the rigid “objectives, apparatus, method, and conclusion” form. Students learn through both courses taught in the classrooms, and by employing experimental methods in research labs of the faculty. Students are also exposed to the frontiers

of the field through seminars, symposia, and national and international conferences that are routinely organised on the campus of Ashoka.

The undergraduate program in Biology is targeted at students who have strong interests in Biology (Biology Majors) as well as those who are interested in learning more about Biology or for meeting their scientific temperament needs (Biology Minors). Courses are taught keeping in mind that some students may or may not have prior exposure to basic concepts of Biology.

All students majoring in Biology will have an opportunity to learn how to design an experiment and to implement that design, figuring out the art of the approximation, understanding the power of simple models and how to conceptualise them, and developing the ability to convert an idea into concepts and models. The contents of the courses themselves are equivalent in every way to those that are taught at the best universities outside of and within India. At Ashoka, students will transfer concepts learnt in class into experimental thinking, verifying for themselves the power and generality of scientific principles.

Courses for Biology majors will provide a strong foundation for research and careers in the biological sciences, medicine, pharmaceutical and biotech industry, teaching, and other related fields.

## The Faculty

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## Course Catalogue

| Programme | 4-yr BSc Hons in Biology | 4-yr BSc Hons in Biology with research | 3-yr BSc Hons in Biology | 3-yr and 4-yr Biology minor |
|---|---|---|---|---|
| **Credits** | (80-credits) | (92-credits) | (60-credits) | (24-credits) |
| **Overview** | 20 courses | 22 courses | 15 courses | 6 courses |
| **Core courses** | **12 courses** (8 theory + 4 lab courses) | **14 courses** (8 theory + 4 lab courses) + one 4-credit thesis proposal + one 8-credit thesis | **11 courses** (7 theory + 4 lab courses) | 4 theory courses |
| **Electives** | 8 courses<br>*Not more than 3 cross-listed courses<br>*Maximum of one 4-credit ISM | 8 courses<br>*Not more than 3 cross-listed courses<br>*Maximum of one 4-credit ISM | 4 courses<br>*Not more than 3 cross-listed courses<br>*Maximum of one 4-credit ISM | 2 courses |

**Core Theory Courses:**

**(BIO-1200) Introduction to biology: Genetics and Evolution (Theory) 4 credits**

(Prerequisite: None)

**Overview**: This is an introductory course for students interested in biology. We will follow the development of ideas and experiments that best explain how life came to be. In doing so, we will explore concepts of both genetics and evolution, touching upon key ideas and debates that have shaped our current understanding. By the end of the course, students should have a broad understanding of both areas, laying the foundation for the biology curriculum at Ashoka University.

**(BIO-2214 Introduction to biology 2: Cell Biology (Theory) 4 credits**

(Prerequisite: BIO-1200)

Overview: Cells are the fundamental unit of life. It carries out all (well… almost all!) the physiological processes essential for its survival and propagation. Within the cell, each of these processes is accomplished by molecular-machines. What are these processes and how do these mini machines carry out cellular functions? How do these cellular machines know the right place and the right time to carry out appropriate functions?

**(BIO-2201) Introduction to biology 3: Molecular Genetics and Molecular Biology (Theory)**
**4 credits**

(Prerequisite: BIO-1200)

**Overview:** How is an organism's structure and function regulated? The address this question molecular level understanding of organisms. Convergence of genetics and biochemistry resulted in the emergence of molecular biology. Today molecular biology is used in all phases of life from food to medicines, new discoveries tend to employ molecular biology approaches not only to diagnose and find better cure for deadly diseases like cancer but also to design smart plants and microbes to enhance the quality and quantity of food and secondary metabolites such as biofuel. Hence a thorough knowledge of molecular biology and molecular genetics is an absolute requirement for biologists to comprehend the complexity of living organisms.

**(BIO-2300) Chemical Basis of Life (Theory) 4 credits**

(Prerequisite: BIO-1200)

Overview: The highly regulated biological systems and their environment are governed by fundamental chemical principles. Therefore, to appreciate the complexity of biological systems, we also need to look at them from a chemical perspective. This course aims to introduce basic concepts of chemistry necessary for studying biological systems. The course is designed to provide a framework to students for understanding the basics of chemistry, biomolecules, their interactions, and mechanisms. In addition, the course will also provide a glimpse of how various chemical entities and their interactions led to the transition from chemistry to biology. The first half of the course will cover the basics of chemical bonds, structures, chemical thermodynamics, reactions, equilibrium, and kinetics. The second half will teach about the basic building blocks constituting life nucleic acids, lipids, carbohydrates, sugar, protein, and concepts of metabolism).

**(BIO-2300) Ecology (Theory) 4 credits**

(Prerequisite: BIO-1200)

**Overview:** The course covers a range of topics from individuals to ecosystems with an emphasis on theoretical foundations and recent developments in the field. It begins with how ecological understanding is achieved, how conditions and resources influence individual species and then moves to processes at higher levels of organisation and ends with rethinking some of the big questions in ecology.

**(BIO-2300) Bioinformatics and Biostatistics (Theory) 4 credits**

**Overview:** This course is application oriented with a focus on understanding and making use of data in biology. Biology is all about big data and interpreting data is a major challenge. This course aims to equip students with the basic knowledge about different types of data, concept of probability, hypothesis testing, and how to analyse data. The major emphasis of the course is to be able to analyse data using the approaches being taught in the class.

**(BIO-4209) Research Methodology and ethics (Theory) 4 credits**

**Overview:** Science provides an integrative approach to understand the society around. Therefore, as a scientist it is crucial to understand how our actions will impact the society and environment. This course aims to educate students about scientific philosophy, methodology, and ethical consideration required for

carrying out scientific research. Starting from basics of working in a lab, this course aims at covering topics of data handling, understanding, interpreting, and communicating. The students will then be taught details of ethics in science and educate them to understand the impact of their actions on the society around.

**(BIO-3423) Physiology (Theory) 4 credits**

(Prerequisite: None)

**Overview**: When seen from the lens of physiology, the human body is a biological machine evolved to carry out the processes of life. Death and disease are natural consequences of the failure of such processes. The course will examine life, death, and in between disease states from a physiological lens, outlining the core processes of respiration, circulation, metabolism, and disposal, studied from the view point of measurement and management

**Core Laboratory Courses:**

**(BIO-1002/ES-2901) Exploring life in the Neighbourhood Lab 4 credits**

(Prerequisite: None)

**Overview:** This course aims to bring students from various backgrounds— i.e., not limited to Biology only, but also from other sciences, humanities and social sciences— and introduce them to their local ecosystem and the intricacies of biological interactions using some basic and simplified concepts of ecology, evolution and animal behaviour, followed by field observations as well as laboratory experiments. The course will have many open-ended exercises, encouraging students to develop small questions based on classroom discussions and observing various natural patterns (e.g., diversity of life) and processes (e.g., sexual interactions, prey-predator, disease spread, cannibalism).

**(BIO-2212) Laboratory Course 2: Molecular Biology and Biochemistry 4 credits**

(Prerequisites: BIO-1200)

**Overview:** In this course, the students will gather hands-on experience in applying the principles and techniques of molecular biology and biochemistry. The course emphasises and strengthens the previously learned theoretical concepts from lectures and textbooks. This will prepare the students for the upcoming more advanced laboratory courses, develop hands-on skills in designing experiments, know the basics of data collection, and learn to store and analyse their data. This course will also enable them to understand

the basics of protein expression and purification and quantitative and qualitative assessment of purified proteins.

**(BIO-2202) Laboratory Course 3: Cell Biology and Genetics 4 credits**

(Prerequisite: BIO-1200)

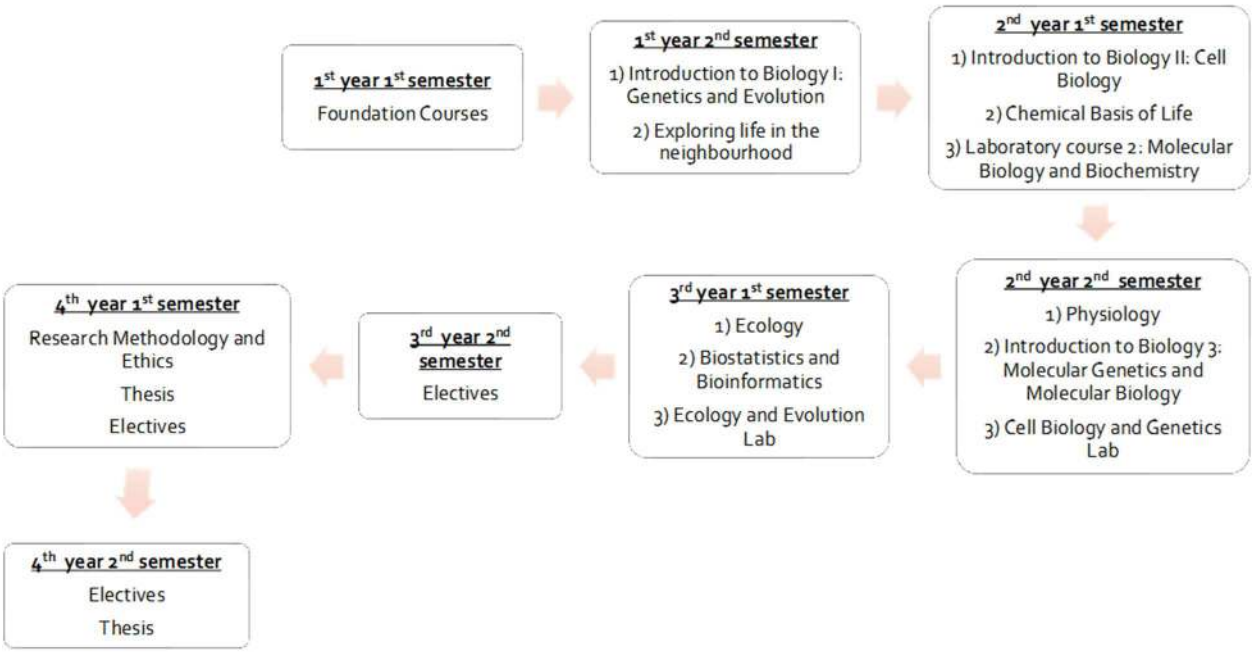
**Overview:** This course aims to teach students the concepts of forward genetics by subjecting microorganisms to harsh environmental conditions and observing the phenotypes. Then, these mutated microorganisms will be used as an infection model system in the eukaryotic model organism in order to observe the effect of mutated microorganisms in the feeding environment of other organisms. The course will provide students with a basic understanding and hands-on experience in handling, manipulating, and investigating cell-biology problems using genetic tools. During the course, students will also learn several cell biology techniques useful in observing and characterising the phenotypes in biological systems.

**(BIO-3012) Ecology and Evolution Lab 4 credits**

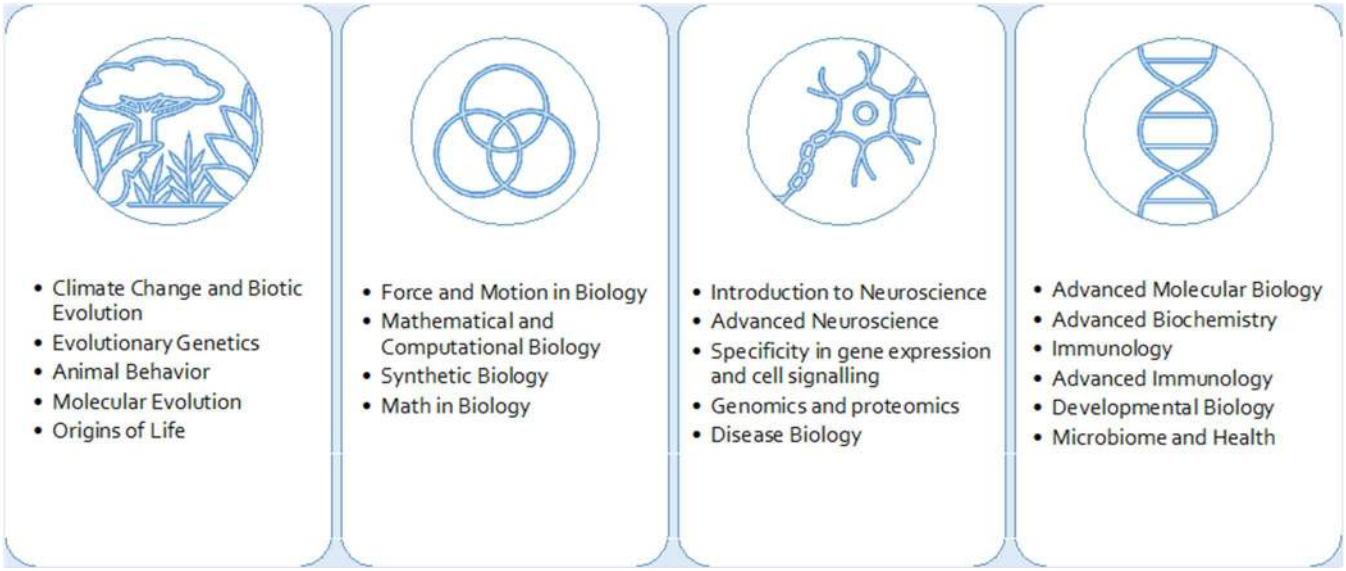
(Prerequisite: BIO-1200)

**Overview:** The course offers hands-on experience to apply concepts from evolutionary biology and ecology theory courses. Students will be introduced to quantitative methods and processes of research in ecology and evolution, which include experimental design, data collection, analysis, interpretation, and scientific writing using field and laboratory studies.

**The Department of Biology recommends the following sequence for taking compulsory/core courses for a biology major:**




The department offers a variety of electives to allow students to specialise in their area of interest and build quantitative skills. We also provide interdisciplinary courses like Archaeology and Science, and cross-list courses offered by other departments. Some of the elective courses are listed below.




**Electives (non-exhaustive)**

**(BIO-3452) Climate Change and Biotic Evolution 4 credits**

Prerequisites: BIO 1200

**Overview:** Climate change has played a critical role in shaping the biological diversity in our planet. It aims to introduce participants to the effects of climate change to biotic diversity, biogeography and human evolution. This course aims to equip students with conceptual and methodological knowhow of related evolutionary research and both case studies and hands-on exercises will be frequently used in this regard.

**(BIO-2103) Introduction to Neuroscience 4 credits**

**Overview:** The goal of this class is to enable students to understand how a biological system mostly composed of salty proteinaceous water bounded by fat is able to signal information, perform complex computations and produce behaviour. We will start by understanding how single neurons can perform computations and can be understood in the same framework as electronic circuitry.

**(BIO-3443) Immunology 4 credits**

Prerequisites: BIO 2201 and 2214

**Overview:** Immunology is the study of the immune system - a complex network of organs, cells and proteins that protect the body from disease (except when it doesn't!). It is an evolving field that is difficult

to understand and memorise, making it a challenging subject to learn. This course focuses on introducing fundamental concepts rather than a comprehensive coverage of the subject. UG, ASP and PhD students who want to grasp key concepts of how the immune system works should consider this course. This immunology course can complement student interest / knowledge of cancer therapy, vaccine biology and infectious diseases.

**(BIO-3433) Developmental Biology** **4 credits**

**Overview:** The field of developmental biology aims to understand how an organism develops from a single cell to fully matured. Interplay of various gene products (proteins) guide key cellular processes to allow the appropriate developmental task to happen at the right time and place. Errors in developmental processes lead to serious disorders and diseases. The course will take a multidisciplinary approach and will aim to cater to students beyond the biology department with the goal of training minds to contribute in tackling major outstanding tasks in the broad field of fundamental developmental biology.

**(BIO-3454) Force and motion in biology** **4 credits**

**Overview:** Modern biology is changing rapidly, and it has become unimaginable to teach biology in silos without discussing the underlying physical and chemical processes. One of the main precepts behind this course is to discuss and analyze the physical concepts underlying biological phenomena. This elective course is aimed at students who wish to understand how physical principles governing molecular interactions come together during biological processes. The course will begin with simple order-of-magnitude estimates in biology. We will then move on to the basic quantifiable physical journal properties of biomolecules. We will then discuss the application of principles of physics to complex biological systems.

***Please note that not all electives are offered each year and plan your choice of courses based on the courses offered in different semesters as well as in different years.***

**Internship Credits**

Foundation courses, co-curricular courses, and internship credit requirements are determined by the University. A summary of internship credit policy is below: Ashoka students may earn credits through internships after they have completed at least two semesters full-time at the University. At least two

internship credits are mandatory in the new four-year programme. While they may earn any number of such credits during their tenure as undergraduates, up to four credits will count towards satisfying degree requirements. The credits that are counted towards the degree will be shown on the transcript along with other courses, whereas additional internship credits which are not counted towards the degree – whether academic or non-academic will be shown in a separate certificate issued by the OAA. An internship credit can reflect (i) work done under the direct supervision of an Ashoka faculty member, to whom the student will report, or (ii) work done elsewhere but evaluated by an Ashoka faculty member using a well-defined evaluation scheme. One internship credit requires 2 hours a week for 15 weeks, i.e. a total of 30 hours. This requires an appropriate conversion for projects done during the summer or winter breaks; this is left to the discretion of the reporting authority for a project. We recommend a conversion of four weeks of full-time work during the winter break to 2 credits, eight weeks of full- time work during the summer break to 4 credits, and half-time work during the monsoon or spring semester to 4 credits.

**Activities of the Department of Biology**

The Department of Biology organises a wide range of seminars, workshops, and conferences to provide a platform for the exchange of scientific ideas. These events have attracted audiences ranging from high school students to international and national policy makers.

During the academic year, the Department of Biology organises weekly colloquia with international and national speakers from eminent universities across the world to discuss their fascinating specialisations within biology. These colloquia can be centred on topics ranging from molecular genetics to ecosystems ecology. These talks reach beyond disciplinary boundaries and provide exemplary examples of interdisciplinary cutting-edge research to all those who attend. They are often followed by informal interaction sessions which give learners the opportunity to ask speakers questions about their personal journeys, research trajectories, and the challenges that they have encountered along the way.

One of the key events organised by the science departments is the Ashoka Science Research Festival. It is a STEM-focused research symposium organised in collaboration with the student-led science societies. This annual event creates a platform for scientific exploration and collaboration, with an emphasis on research. It includes a variety of events, including thought-provoking panel discussions, informative poster presentations, and captivating microscopy and science-art competitions. By bringing together

students from various scientific disciplines, the festival encourages the exchange of ideas, fosters interdisciplinary research collaborations, and ignites a passion for scientific inquiry.

**Ashoka's Biology society (Bio-soc)**

Ashoka University's Biology Society is a student-led organisation committed to fostering a passion for the life sciences and cultivating a thriving biology community on campus. Regardless of your current knowledge of the field, BioSoc offers a welcoming environment for anyone eager to explore the wonders of this fascinating field.

We organise a diverse range of engaging events throughout the academic year. From field trips to ecological hotspots and movie nights showcasing thought-provoking biology-centric films to insightful talks by distinguished speakers and fellow students, we strive to create more avenues for students to interact with biology and deepen their knowledge. Through peer mentorship programs and Q&A sessions with seniors, we hope to create a valuable support system for all students engaging with biology at Ashoka. We also organise a mixer every year for students across batches and professors to interact with each other, share their academic interests and spark the potential for research collaborations.

We also engage in collaboration with other academic societies to enhance the scientific culture of our university. BioSoc participates in the annual inter-university STEM Fest 'Chimera' which is organised by Ashoka University's branch of the Institute of Electrical and Electronics Engineers. As part of this STEM extravaganza, we help organise biology-centric competitions and ideathons. This provides a great opportunity for students to showcase their knowledge and scientific prowess, and forge connections with a wider inter-collegiate STEM community.

We invite you to participate in BioSoc's initiatives and embark on a journey of discovery into the captivating world of biology!

**Bio-soc members 2024**

# The Ashoka Journal of Biosciences

The Ashoka Journal of Biosciences (AJB) is a student-led, reviewed journal dedicated to showcasing the research and writing prowess of undergraduate students at Ashoka University and beyond. The AJB recognises the dual role it plays in the scientific academia landscape, that of platforming student research and providing them exposure to the publishing process. Publishing is not only an occupational necessity for aspiring researchers, but it also serves as a crucial area where students lack exposure and training. The journal models its review and editorial processes on international scientific journals, offering students a firsthand experience of academic publishing. By doing so, the AJB aims to bridge the gap between theoretical knowledge and practical application, preparing students for the critical aspect of their future careers that is often overlooked. The journal welcomes submissions in a variety of formats and categories. Each submission can encompass pure biology or be of an interdisciplinary nature. The Ashoka Journal of Biosciences also holds scientific writing workshops and aims to communicate new advancements, ideas, and perspectives in an accessible and stimulating manner.

The inaugural issue of the journal was launched on May 1, 2024 and featured articles spanning microbiology, plant biochemistry, comparative developmental biology, and the ecology of parasitoid wasps.

We invite you to submit to the journal and become a part of a thriving community of future scientific leaders! For any queries, feel free to reach out to us at biojournal@ashoka.edu.in

## Alumni Information

| Alumni Name | Graduation Year | After Ashoka... |
|---|---|---|
| **Adheesh Ghosh** | 2023 | University College London, MSc Cancer |
| **Fibion Mukwati** | 2023 | Research- Infectious Disease Research Laboratory-Charles Rivers Private Labs |

| | | |
|---|---|---|
| **Prisha Tiwari** | 2023 | Duke University - Master of Environmental Management |
| **Priyadatha Sajan** | 2023 | Erasmus Mundus International Master's in Innovative Medicine |
| **Soham Sadashiv Kacker** | 2023 | University of Oxford MSc Biodiversity, Conservation, and Management |
| **Tanmay Singh** | 2023 | MEME-Erasmus Mundus master's in Evolutionary Biology |
| **Manasven Raina** | 2021 | Erasmus Mundus Joint Masters Program in Evolution (MEME), University of Groningen, Netherlands & University of Montpellier, France. |
| **Prisha Tiwari** | 2023 | Duke University - Master of Environmental Management |
| **Priyadatha Sajan** | 2023 | Erasmus Mundus International Master's in Innovative Medicine |
| **Vedika Kalra** | 2023 | Full-Time Mediator at Science Gallery Bengaluru |
| **Besufekad Wolde** | 2022 | Graduate School for Evolution, Ecology, and Systematics (EES) at Ludwig Maximilian University of Munich (DAAD scholarship) |
| **Divya Akanksha T G** | 2021 | Erasmus + International Masters in Innovative Medicine at Heidelberg University, and the University of Groningen, the Netherlands. |
| **Shashwat Goyal** | 2021 | M.Sc in cancer immunology and biotechnology from the University of Nottingham |
| **Bhavya Dugar** | 2021 | MSc. in Ecology and Conservation from Cardiff University |
| **Aakashdeep Dutta** | 2022 | Master's in Molecular and Cellular Biology at the University of Waikato, New Zealand. |
| **Niharika Wagh** | 2021 | Master's of Biotechnology at the University of Queensland. |
| **Aryan Ramachandran** | 2023 | MEME-Erasmus Mundus master's in Evolutionary Biology |
| **Tanmay Singh** | 2023 | MEME-Erasmus Mundus master's in Evolutionary Biology |
| **Herman Ramesh** | 2021 | NCBS MSc Wildlife Biology |
| **Ronith Urs** | 2022 | NCBS MSc Wildlife Biology |
| **Aashka Kaushal Shah** | 2023 | Research Fellow-Prof. Bittu's Lab |
| **Sushmita Anant** | 2023 | Research Fellow-Prof. Bittu's Lab |
| **Rhea Lakhiani** | 2023 | Research Fellow-Prof. Krishna Melnattur's Lab |
| **Anudarsh S** | 2023 | Research Fellow-Prof. Sougata's Lab |

# Student Achievements

## Student Publications

| Student Name | Title of the Paper | Journal and Year |
|---|---|---|
| **Devshuvam Banerji** | Sexual conflict drives micro- and macroevolution of sexual dimorphism in immunity | BMC Biology, 2021 |
| **Manasven Raina** | Carcass Scavenging Relaxes Chemical-Driven Female Interference Competition in Flour Beetles | The American Naturalist, 2021 |
| **Ritika Nara** | Integrin regulated autoimmune disorders: understanding the role of mechanical force in autoimmunity | Frontiers in Cell and Developmental Biology, 2022 |
| **Ayush Mistry** | Structurally different chemical chaperones show similar mechanical roles with independent molecular mechanisms | Nanoscale, 2023 |
| | Elucidating the novel mechanisms of molecular chaperones by single-molecule technologies | Trends in Biochemical Sciences, 2023 |
| | Pan-cancer analyses suggest kindlin-associated global mechanochemical alterations | Communications Biology, 2024 |
| **Riti Bhatia** | Pan-cancer analyses suggest kindlin-associated global mechanochemical alterations | Communications Biology, 2024 |
| **Shreyansh Priyadarshi** | Pan-cancer analyses suggest kindlin-associated global mechanochemical alterations | Communications Biology, 2024 |
| **Simran Wadan** | Pan-cancer analyses suggest kindlin-associated global mechanochemical alterations | Communications Biology, 2024 |
| **Rhea Lakhiani** | Comparative biology of sleep in diverse animals | Journal of Experimental Biology, 2023 |
| **Sahana Shanavas** | Comparative biology of sleep in diverse animals | Journal of Experimental Biology, 2023 |
| **Abhijit Sreepada** | Adhesion G protein-coupled receptor gluing action guides tissue development and disease | Journal of Molecular Medicine, 2022 |
| **Besufekad Wolde** | Impacts of reduced water availability on vegetative and reproductive traits of a Solanum species | Plant Species Biology, 2024 |
| **Soham Kacker** | Patterns of tree regeneration and their implications for succession in Himalayan pine-oak forests, India | Forest Ecology and Management, 2024 |

## Poster Presentation in Conference/Symposium

| Student Name | Title of the poster/talk/presentation | Conference /Symposium/Meeting | Year |
|---|---|---|---|
| **Vedika Kalra** | Characterising the Role of Glycocalyx in C.elegans Intestinal Infections | 3rd Indian C. elegans Meeting, Trivandrum | 2022 |
| **Sanjna Kartik** | Investigating the Role of the Glycocalyx in Host-Pathogen Interactions | Asia Pacific Worm Meeting - 2024, Bengaluru | 2024 |
| **Sanjna Kartik** | Investigating the Role of the Glycocalyx in Host-Pathogen Interactions | Science Undergraduate research conference, Azim Premji University | 2023 |
| **Anudarsh S.** | Conservation of RNA-Interactome in Cyanobacteria and Plastids | Science Undergraduate research conference, Azim Premji University | 2023 |

If you have any other questions, you can write to your first point of contact:

- Biology Student Representative **biology_ugrep@ashoka.edu.in** ; or direct your queries to the
- Head, Department of Biology, Professor Alok Bhattacharya at **hod.bio@ashoka.edu.in**
- UG Programme Coordinator, Department of Biology, **ugcoordinator_biology@ashoka.edu.in**