

# Biodiversity Summer Programme 2026 – Course Description

## **LSM4263 Field Studies in Biodiversity**

## **LSM2252A Biodiversity**

Academic units: 4 units each, total 8 units

Field studies are integral in the training of biologists. Experiential learning in the field provides valuable and irreplaceable opportunities for participants to hone their skills in critical thinking, teamwork, and problem solving. Over the past 30 years, the departments of botany and zoology at NUS, now known as the Department of Biological Sciences, have been conducting annual week-long field courses for Honours year students to emphasize the field component of biology. This gives even experimental and molecular biologists an opportunity to experience a key component of modern biology education that necessitates practical exposure beyond the confines of indoor spaces. It is well-established that the best way to study biodiversity in a diversity rich region like Southeast Asia is through field courses that enable immersive learning experiences within the natural environment. This experiential-mode of study is significant.

**LSM4263** introduces students to field biology – the basic techniques and theories involved i.e. study design, data management, analysis, and synthesis. A series of six lectures will deliver concepts relevant to the practice of field biology. Through field practical sessions conducted in sites around Singapore, students will encounter tropical environs and habitats, namely coastal, mangrove, primary and secondary forest, and apply concepts into practice. Students will also be tasked with conducting basic independent literature review of local/regional biodiversity conservation issues and visit other local field sites of their choice, to enable student-directed learning to benefit their personal learning journeys. This course is aimed at helping students to gain a foundational understanding of the various field methods in biodiversity research, and to achieve an appreciation and a broader perspective on the types or sub-fields of biodiversity research and what they entail.

**LSM2252A** offers an in-depth exploration of the fundamental concepts surrounding biodiversity and the ethical implications of its conservation. Students will gain an understanding of the vast diversity of life forms, focusing on the major groups of living organisms and their roles in maintaining the intricate balance of natural ecosystems. The course underscores the critical importance of preserving biodiversity to ensure ecological stability and resilience. A key component of the curriculum will highlight the various habitats and vegetation types found in and around Singapore, providing students with an opportunity to study local biodiversity firsthand. By the end of the course, students will be equipped with both the knowledge and the ethical framework necessary to advocate for the conservation of biodiversity at local, national, and global levels.

The field component introduces students to the practical aspects of field biology, taking the format of a week-long fieldwork in Pulau Tioman, Malaysia, an island off the east coast of Peninsular Malaysia with biomes of sufficient breadth and scale to accommodate the practical learning objectives of this course. Preparatory instructional time will be allocated in the form of a dedicated lecture and tutorial sessions preceding the field week; preparatory content will also be inherent features in lectures administered in LSM4263. Students will be divided into small groups of 5-8 and will conduct mini-projects in different habitat types pertaining to their project assignment, under the supervision of experienced teaching personnel. Students can expect to gain first-hand and hands-on experience in research formulation, sampling design, planning, management, execution, data analysis and synthesis, and effective communication of a field-based research project of their own. The duration of each working day for the students and staff will be 12 hours, including field work, data analysis, discussions, preparation, and daily group debriefs each evening. After returning from the trip, students will give presentations of the study they were assigned and defend their findings and conclusions, as an exercise in scientific communications. Students will finish the course with the final assessment task: a written report based on their group project to be undertaken and submitted individually.

Both LSM4263 and LSM2252A will be delivered in an integrated curriculum in the Biodiversity Summer Programme that combines both courses and their deliverables into a six-week instructional period.