

Module Information

Module Code	Module Title	Semester	Mod. Credits
GEC1011/ GEH1043	Microbes Which Changed Human History	2	4

Module Description

The primary aim of the module is to introduce students to the nature of infectious diseases and their impact on human activities. At the end of the module, students will be able to understand the interactions between microorganisms and humans, and the position and role of humans in the living world.

Eligibility and requirements

Prerequisites (prior knowledge required): NIL

Corequisites: NIL

Precluded modules (if any): GEK1534, GEC1011, GEH1043

Instructional methods

The following instructional methods will be employed:

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|----------------------------------|-------------------------------------|
| 1) Lecture (11 sessions) | 4) Field trip (1 session) |
| 2) Blended Learning (2 sessions) | 5) Group Discussions (3 sessions) |
| 3) Laboratory (2 sessions) | 6) Group Presentations (4 sessions) |

Assessment modes

The following assessments will be employed:

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|-----------------------------|--------------------------------|
| 1) Participation = 11% | 4) Module Quiz = 4% |
| 2) CA = 25% | 5) Individual Assignment = 30% |
| 3) Group Presentation = 30% | |

Contact information for Module Coordinator and other instructors

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Course content and syllabus

Lectures:

- 1) History of microbiology (1 lecture)
- 2) Viral and bacterial plagues/epidemics (3 lectures)
- 3) Diseases that shaped Singapore's history (3 lectures)
- 4) Microbes shaping our individual and collective futures (2 lectures)
- 5) Student-selected topic (1 lecture)

Learning activities

The following learning activities will be employed to achieve the learning outcomes of knowledge, cognitive skills, generic skills and/or attributes development stated in the 'Intended Learning Outcomes' below:

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|-------------------------------------|---|
| 1) Interactive lectures | 5) Field trips & educational card games |
| 2) Group discussions | 6) Laboratory activities |
| 3) Presentation & writing workshops | 7) Essay Writing |

This module incorporates an assortment of instructional and learning activities that provide an exciting learning experience for students that are keen to learn more about how microbes have shaped human history. Activities are designed to engaged those without prior training in [micro]biology to bring the topics to life and show the relevance of microbes in not only our history but also everyday life.

Intended Learning Outcomes

By the end of the module, students will be able to:

1. List some notable microbes and describe their role in shaping history (diseases & benefits)
2. Compare how diseases are spread and how they have been/are being managed
3. Determine how specific microbes/diseases of interest have shaped our lives in the present and future

This module will provide the opportunities to develop the following cognitive skills, generic skills and attributes:

Very Good Opportunities	Good Opportunities
<ol style="list-style-type: none">1) Verbal/Oral Communication2) Interdisciplinary Thinking3) Creative Thinking4) Collaboration & Teamwork	<ol style="list-style-type: none">1) Written Communication2) Analytical & Critical Thinking3) Problem-solving & Decision-making

Required and/or recommended readings

NIL