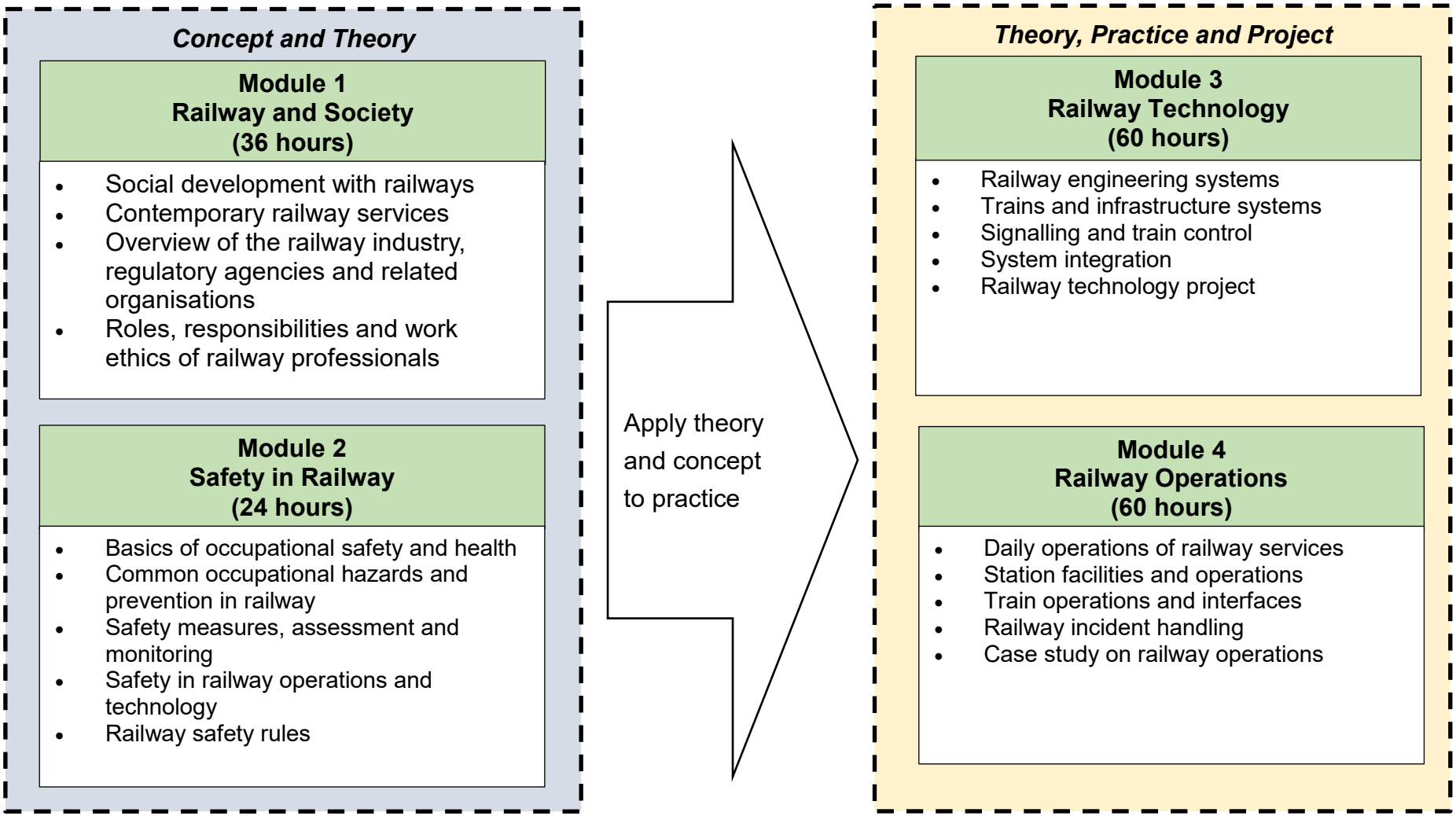
Applied Learning

2024-26 Cohort; 2026 HKDSE

Item	Description
1. Course Title	Railway Studies
2. Course Provider	Hong Kong College of Technology
3. Area of Studies/ Course Cluster	Engineering and Production/ Services Engineering
4. Medium of Instruction	Chinese or English
5. Learning Outcomes	Upon completion of the course, students should be able to: (i) describe the structure and stakeholders of the railway industry, the functions and operations of various components of railway systems and the latest development trend in railway services; (ii) explain the requirements for occupational safety and health of the railway industry; (iii) outline the concepts, techniques and functions of technology and operations in the railway industry; (iv) apply knowledge of railway operations and technology to analyse or solve problems relevant to the railway industry; (v) demonstrate proper attitude, teamwork and communication skills required in the railway industry; and (vi) enhance self-understanding and explore directions on further studies and career pursuits.

6. Curriculum Map – Organisation and Structure



7. The Context

- The information on possible further study and career pathways is provided to enhance students' understanding of the wider context of the specific Applied Learning course.
- The recognition of Applied Learning courses for admission to further studies and career opportunities is at the discretion of relevant institutions. Students who have successfully completed Applied Learning courses have to meet other entry requirements as specified by the institutions.

Possible further study and career pathways

Further studies

- e.g. courses related to logistics, transport operations, railway engineering, electrical engineering, electronics engineering, mechanical engineering

Career development

- e.g. train captain, train station officer, assistant logistics officer, electrical and mechanical apprentices, tradesman or technician, operation officer or project officer in transport-related industry

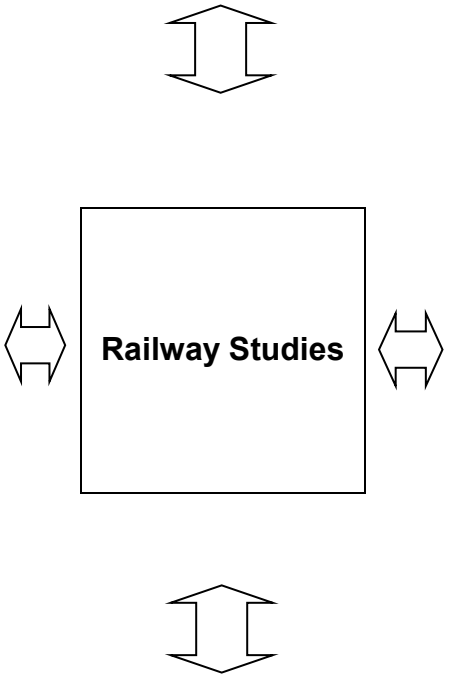
Complementarity with core subjects and other elective subjects

Enhancing and enriching**,** e.g.

- the course enables students to apply knowledge and skills learnt from **Design and Applied Technology** to develop technological responses to improve quality of living
- the course enables students to understand the working principle of the railway systems by applying the knowledge learnt from **Physics**

Expanding horizons**,** e.g.

- students taking **Business, Accounting and Financial Studies** will have a broader view on how knowledge of operational management and applied technology apply in real life



Relations with other areas of studies/ courses of Applied Learning

e.g.

Business, Management and Law

- the concepts of marketing and customer relationship management are useful for understanding of railway operation

Engineering and Production

- the knowledge in electronics and mechanical principles is useful for understanding of railway technology

Foundation knowledge developed in junior secondary education

The course is built upon the foundation knowledge students acquired in, e.g.

- **Chinese Language Education** and **English Language Education** – reading, verbal and written communication
- **Mathematics Education** – basic geometry and statistical skills
- **Technology Education** – systems & control, technology & living

8. Learning and Teaching

In this course, student-centred learning and teaching activities are designed to enable students to understand fundamental theories and concepts, develop their generic skills, and address their career aspirations in railway related field.

Different modes of activities are employed to provide students with a systematic understanding about the context (e.g. lectures on the overview of railway development) and eye-opening opportunities to experience the complexity of the context (e.g. site visit to railway facilities, including depot and stations, and sharing by practitioners).

Students acquire an understanding of the requirements, fundamental knowledge and skills essential for further learning within the area through learning-by-practising opportunities in an authentic or near-authentic environment (e.g. train driving simulation, practical exercise in simulated work environment, role play as a station officer and railway engineering team).

Students are also encouraged to develop and apply conceptual, practical and reflective skills to demonstrate entrepreneurship and innovation. Students are given opportunities to integrate the knowledge and skills acquired and consolidate their learning (e.g. in a group project, students apply technologies to solve practical problems in railway, research on feasibility to adopt a new technology, and produce a preliminary design of a new metro line with appropriate technologies in a given city).

9. Curriculum Pillars of Applied Learning

Through related contexts, students have different learning opportunities, for example:

(i) Career-related Competencies

- outline the development of operations and technology systems in railway;
- discuss the complexity of an issue in railway industry by referring to structure, stakeholders and safety requirements; and
- demonstrate the understanding of competency requirements through practical exercises which are set according to the railway industry standards.

(ii) Foundation Skills

- enhance communication skills both in verbal and written forms through working on self-reflection report, presentation, role play and project reports;
- apply mathematical skills in preparing data for case study analysis; and
- apply information technology skills in research for projects.

(iii) Thinking Skills

- apply critical thinking skills in analysing the efficiency and development of railway operations and technology systems based on given and self-fetched information;
- apply innovative and creative thinking skills in providing suggestions to improve operational efficiency and customer experience satisfaction; and
- analyse technological problems logically.

(iv) People Skills

- demonstrate collaborative skills through sharing knowledge and ideas, solving problems and settling conflicts in group projects;
- demonstrate self-management skills through planning, implementing and evaluating project outcomes; and
- demonstrate team spirit and interpersonal skills in group discussions and group projects through handling conflicts and misunderstandings.

(v) Values and Attitudes

- demonstrate a basic understanding of social responsibilities, professional ethics and attitudes related to the railway industry; and
- develop enthusiasm and plan for career in the industry and further studies.