INFORMATION SYSTEMS TECHNOLOGY AND DESIGN

SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN

Established in collaboration with MIT
The Information Systems Technology and Design (ISTD) pillar focuses on “Information Technology” and its relationship with the world. It integrates the traditional disciplines of Computer Science, Computer Engineering and Information Systems. The aim of such integration is to offer you the flexibility to acquire knowledge and skills in areas of your choice and the ability to interact with other engineering disciplines in creative ways.

The mathematical grounding, algorithmic thinking and intense exposure to design in the context of interdisciplinary education empowers you to tackle challenging problems and develop solutions requiring computing as a core element. Most importantly, you will be able to continually adapt to the rapidly changing landscape of tools and techniques in computing.

All SUTD students will take foundational subjects in humanities and the sciences as part of their curriculum. You are immersed in a rigorous curriculum that is focused on design and a modern pedagogy where students learn how to solve complex problems in interdisciplinary teams.

ISTD pillar graduates will have the knowledge and skill sets to prepare them for leadership positions in areas such as:

- Software Design and Development
- Telecommunications
- Data Analytics
- Game Design
- Consulting
- IT Security
- Academia

CORE SUBJECTS

The six ISTD core subjects that begin in Term 4 aim to equip you with basic mathematical tools needed for problem solving using computers and to instil algorithmic thinking.

- Introduction to Information Systems and Programming
- Computation Structures
- Elements of Software Construction
- Introduction to Algorithms
- Computer System Engineering
- Probability and Statistics

ELECTIVE REQUIREMENTS

- Four track subjects/electives
- One Technical Application Elective (TAE)
- Two subjects as free electives from the ASD, EPD, ESD or ISTD pillars

TECHNICAL APPLICATION ELECTIVES

All engineering pillars have a set of elective subjects associated with different applications streams, which gives greater focus and depth, and promotes inter-pillar interaction. You will be able to take technical application electives in focused areas such as Global Issues, Transportation, Manufacturing Systems, Information Systems and Enterprise Systems.

CAPSTONE

In Terms 7 and 8, the capstone is a culminating project that allows you to use the skills you have mastered in ISTD in a real world industry or research project. The capstone projects focus on interdisciplinary applications, solved by a team of students chosen appropriately from different pillars.

SUTD-SMU DUAL DEGREE PROGRAMME IN TECHNOLOGY AND MANAGEMENT (SUTD-SMU DDP)

For students interested in both technology and management, the SUTD-SMU DDP offered with the Singapore Management University (SMU) brings you the best of both worlds.

Students will graduate with a Bachelor in Engineering from SUTD with a major in one of the following three pillars and a Bachelor in Business Management from SMU.

- Engineering Product Development (EPD)
- Engineering Systems and Design (ESD)
- Information Systems Technology and Design (ISTD)

For more information, visit sutd.edu.sg/ddp

The following chart illustrates the ISTD curriculum structure. It depicts the typical sequence of subjects. Each major row indicates a calendar year with columns representing the Jan-Apr, May-Aug, and Sep-Dec terms ordered from left to right.
The ISTD pillar offers specialisation in one or more tracks, which are designed in accordance with common industry requirements. You will also have the option of creating your own track by suitably mixing ISTD electives with those from other engineering pillars.

The following four tracks offer you the opportunity to focus on specific sub-areas of ISTD, that align with your interests and aspirations. Some tracks are interdisciplinary and require you to take subjects from outside the list of ISTD pillar subjects.

**TRACK SUBJECTS**

**Artificial Intelligence (Interdisciplinary track with the ESD pillar)**

The Artificial Intelligence (AI) track covers core theoretical foundations and provides advanced algorithmic, statistical and engineering knowledge, empowering you to visualise and create the next generation of AI innovations.

**Business Analytics (Interdisciplinary track with the ESD pillar)**

The Business Analytics (BA) track is a joint track between the ISTD and ESD (Engineering Systems and Design) pillars, and focuses on data-driven decision-making. You will take a selection of ISTD and ESD subjects to better understand the interaction between data, models and decisions.

**Computer Engineering (Interdisciplinary track with the EPD pillar)**

The Computer Engineering track is a joint track between the ISTD and Engineering Product Development (EPD) pillars. You will study subjects from the broad area of computer engineering, including hardware engineering, software engineering and information systems engineering.

**Custom Track**

The Custom Track gives you the option of creating a track to best realise your career objectives and to pursue your interests. With the flexibility to select subjects from ISTD as well as other pillars, you can customise an interdisciplinary curriculum which does not fall into other pre-defined tracks, but is firmly grounded in computing around a coherent technical theme.

**Security and Communication**

The Security and Communication track offers you an interdisciplinary approach to security and communication. You will acquire a strong technical foundation in designing, implementing and managing secure software and systems.

Several electives related to security and communication provide you with an in-depth understanding and the design principles of secure information and cyber-physical systems.

**Tracks offered in a year are subject to changes.**