

Information and Communication Technology (S4 - S6) Curriculum Framework of National Security Education**1. General teaching foci**

- 1.1 The topic “Social Implications” of the senior secondary Information and Communication Technology (ICT) curriculum enables students to learn information technology tools and systems, to develop information literacy, as well as to use ICT effectively and ethically, so that they can understand the importance of cyber security from the perspective of a responsible network user.
- 1.2 The compulsory part of ICT curriculum includes “information literacy” and the use of the Internet. “Information literacy” involves the ability to select, organise, analyse and use information in a critical and effective manner. In today’s knowledge-based society, it is important for students to be able to use the Internet to access information effectively and quickly, and to use the information obtained to construct the knowledge they need. In addition to avoiding falling victim to the Internet world, students should also understand the impact of cyber security on individual and social developments.
- 1.3 By studying topics related to information literacy, students can have a more comprehensive understanding on the importance of cyber security and the impact of false information on individuals, society and national security. The topic will enhance students’ information literacy and enable them to authenticate information in a critical manner, thereby developing students into positive and responsible citizens.

2. Learning foci

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|---|--|--|---|
| Topics | Learning Foci | Strand | Related Learning Elements |
| Compulsory part Module E Social Implications ● Threats and Security on the Internet | <ul style="list-style-type: none"> ● From the users' perspective, understand the possible security threats on the Internet, discuss the possible privacy threats on the Internet and suggest ways to protect privacy. ● Explain authentication and authorisation as a means to control access of information on the Internet <ul style="list-style-type: none"> ➤ When teaching the topic "Social Implications", it is necessary to note the importance of secure use of the Internet and the close relationship between the normal functioning of Internet and the orderly operation of society, such as online shopping and financial services. Students also need to understand the impact of various cybercrimes and the misuse of the Internet on the general public. ● Students should understand, from the perspective of Internet users, the importance of cyber security and how to enhance cyber security through the preventive mechanism at the system level. For example: <ul style="list-style-type: none"> ➤ from the users' perspective, understand the possible security threats on the Internet ➤ discuss the possible privacy threats on the Internet | 7 | <ul style="list-style-type: none"> ● Analyse the credibility and authenticity of information with rational, multiple perspectives and critical thinking, so as to enhance the awareness of safeguarding national security and abiding by the law |

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| | <p>and suggest ways to protect privacy</p> <ul style="list-style-type: none"> ➤ understand the data encryption technologies to prevent eavesdropping and interception ➤ explain authentication and authorisation as a means to control access of information on the Internet ➤ recognise the security measures used in electronic transactions <p>● In addition to avoiding students falling victim to the Internet world, it is also necessary to increase their vigilance against threats including hidden dangers in the network infrastructure and cybercrimes, so that they can become responsible netizens to further enhance cyber security.</p> | | |

3. Suggested learning and teaching activities (examples)




✧ Project learning

- ◆ **【Authenticity of information】** Study in groups the online information designated by the teacher. Discuss different methods to verify and determine the authenticity of such information, and assess the impact of improper dissemination of such information on society.
- ◆ **【Online transaction security】** Study in groups on how to protect users' security and authentication when they do transactions using their online banking accounts, and the role of each stakeholder (e.g. the users, the government, the banks and the Internet service providers) in the protection of cyber security.
- ◆ Design appropriate self-learning activities in line with the curriculum aims and objectives to help students understand the concern of other countries on science and technological security issues.

✧ **Cross-curricular collaboration**

- ◆ **【Authenticity of information】** Collaborate with the panel of Business, Accounting and Financial Studies to discuss the information related to personal wealth management, such as information about wealth management plans and services, that are obtained from newspapers, the Internet or social media, etc. Through these activities, students can apply the concepts and knowledge learned from relevant topics to interpret and verify the authenticity of information, and make smart decisions on wealth management prudently.

✧ **【Authenticity of information on the internet】 examples of teaching**

- ◆ Determine the security of a webpage and the information contained therein by observing the information shown in the browser. For example, after entering the URL `www.aaa.bbb.ccc` in the browser, we can observe the browser:
 1. If the URL begins with “https”, i.e. `https://www.aaa.bbb.ccc...`, it means that this webpage is secure.
 2. Check the symbol to the left or right of the URL to determine the security status of the website:
 -  Secure
 -  Information might be insecure
 -  Insecure or dangerousIf the “bbb” part of the URL is “gov”, it means that this website is a government website, so we can trust the information contained therein.

✧ **Discussion of real cases**

- ◆ **【Consequences of the dissemination of false information】** Teachers read and analyse real cases of disseminating false information together with the students, so as to enable students to understand that anyone who spreads false information would be subjected to criminal and civil liabilities. We shall speak and act cautiously on the Internet and be responsible netizens with a positive attitude.