

2. RATIONALE, AIMS AND INTENDED LEARNING OUTCOMES OF THE PROGRAMME

2.1 Background and Rationale

The recent advance in information and communication technologies (ICT) has brought people great convenience in their daily life. Information has become one of the most valuable assets to any country and any business which requires careful protection. To protect data security and privacy and to safeguard against the risk of potentially devastating security attacks and misuses have thus become a vital concern to all countries and organizations. With the cross-border, open-platform, highly-interconnected nature of the cyberworld, the impacts of security attacks and misuses are far-reaching, and would require integral effort from all parties involved in order to effectively combat these attacks.

In Hong Kong, since the pace of globalization continues to accelerate, supported by domestic consumption as well as the *Mainland and Hong Kong Closer Economic Partnership Arrangement (CEPA)*, the manpower requirement in ICT will follow a growing trend in the long run. However, the further transition to knowledge society and the shifting of the ICT sector towards Cloud Computing and mobile communications requires ICT employees to acquire new skills and knowledge particularly in the area of information security. There is a need to launch relevant degree programmes to satisfy the urgent needs of the society. This programme will thus cover both large-scale and small-scale information security issues which are facing by individuals, organisations, and the society, and provide the necessary training to students so that they will be capable of preventing security threats and solving security problems in different settings.

2.2 Aims

This Programme aims at producing graduates with:

1. a wide range of professional knowledge and skills relevant to Information Security,
2. creativity and innovation,
3. adaptability to changing technology and society, and
4. all-rounded attributes.

2.3 Relationship of Programme Aims to University Missions

The University has the following missions:

1. To nurture graduates who are critical thinkers, effective communicators, innovative problem solvers, lifelong learners and ethical leaders.

2. To advance knowledge and the frontiers of technology to meet the changing needs of society.
3. To support a University community in which all members can excel through education and scholarship.

The following table illustrates the relationship between Programme Aims and University Missions:

Programme Aims	University Missions		
	1	2	3
1	X	X	X
2	X	X	
3	X	X	
4	X		X

2.4 Institutional Learning Outcomes

It is PolyU's educational mission to nurture competent professionals who are also critical thinkers, effective communicators, innovative problem solvers, lifelong learners, and ethical leaders. The institutional learning outcomes for these attributes are provided as follows:

1. **Competent professional:** Graduates should be able to integrate and apply in practice the fundamental knowledge and skills required for functioning effectively as entry-level professionals.
2. **Critical thinker:** Graduates should be able to examine and critique the validity of information, arguments, and different viewpoints, and reach a sound judgment on the basis of credible evidence and logical reasoning.
3. **Effective communicator:** Graduates should be able to comprehend and communicate effectively in English and Chinese, orally and in writing, in professional and daily contexts.
4. **Innovative problem solver:** Graduates should be able to identify and define problems in professional and daily contexts, and produce creative and workable solutions to the problems.
5. **Lifelong learner:** Graduates should recognise the need for continual learning and self-development, and be able to plan, manage and improve their own learning in pursuit of self-determined development goals.
6. **Ethical leader:** Graduates should have an understanding of leadership and be prepared to lead a team, and should acknowledge their responsibilities as

professionals and citizens to society and their own nation, and be able to demonstrate ethical reasoning in professional and daily contexts.

2.5 Intended Learning Outcomes of the Programme

Programme Outcomes are the attributes of the graduates who have completed the Programme successfully. These attributes are classified into two broad categories. Category A embraces such attributes as knowledge, skills, abilities, attitudes that are related to Information Security. Category B embraces all-roundedness attributes possessed by the graduates to support their further development.

Category A: Professional/Academic Knowledge and Skills

On successful completion of the Programme, students should be able to:

1. apply knowledge of mathematics and science appropriate to the discipline of Information Security;
2. apply knowledge of Information Security to the abstraction and conceptualisation of Information and Communications Technology (ICT) models;
3. analyse an Information Security problem, and identify and define the requirements appropriate to its solution;
4. design, implement, and evaluate an Information Security system, process, component, or program to meet desired needs with appropriate consideration for public health and safety, social and environmental considerations; and
5. use current techniques, skills, and tools necessary for the practices in Information Security with an understanding of the limitations.

Category B: Attributes for All-Roundedness

On successful completion of the Programme, students should be able to:

6. function effectively on teams to accomplish a common goal;
7. have an understanding of professional, ethical, legal, security and social issues and responsibilities;
8. communicate effectively with a range of audiences;
9. analyse the local and global impact of Information Security on individuals, organisations, and society; and
10. recognise the need for and engage in continuing professional development.

2.6 Relationship of Programme Outcomes to Programme Aims

The following table illustrates the relationship between Programme Outcomes and Programme Aims:

Programme Outcomes	Programme Aims			
	1	2	3	4
1	X		X	
2	X	X	X	
3	X	X	X	
4	X	X	X	
5	X		X	
6				X
7	X		X	X
8				X
9	X		X	X
10			X	X

2.7 Relationship of Intended Learning Outcomes of the Programme to Institutional Learning Outcomes

The following table illustrates the relationship between Intended Learning Outcomes of the Programme and Institutional Learning Outcomes:

Programme Outcomes	Institutional Learning Outcomes					
	1	2	3	4	5	6
1	X			X		
2	X	X		X		
3	X	X		X		
4	X			X		
5	X					
6			X			X
7	X					X
8	X	X	X	X		
9		X			X	
10					X	