Subject Description Form

Subject Code	EIE4116
Subject Title	Surveillance Studies and Technologies
Credit Value	3
Level	4
Pre-requisite/ Co-requisite/ Exclusion	Nil
Objectives	This course aims at providing students with thorough understanding of recent surveillance technologies and their emerging trends. They will also learn the pros and cons of various surveillance technologies.
Intended Subject Learning Outcomes	**Upon completion of the subject, students will be able to:** Category A: Professional/academic knowledge and skills 1. Introduce a brief history to provide context for the evolution of today's surveillance technologies 2. Understand the different surveillance technologies 3. Understand the system design principle of CCTV and other related video security and surveillance technologies Category B: Attributes for all-roundedness 4. Understand professional, ethical, legal, security and social issues and responsibilities
Subject Synopsis/ Indicative Syllabus	**Syllabus:** 1. Overview of Surveillance Studies Brief history, key developments leading to current surveillance technologies; public controversy and accountability. 2. Surveillance Technologies and Techniques Visual surveillance; audio surveillance; aerial surveillance; radio-wave surveillance; GPS surveillance; sensors; computer, Internet and social media surveillance; data cards; biochemical surveillance; animal surveillance; Biometrics; pros and cons of surveillance technologies. 3. Case Study: Video and CCTV Surveillance Video's critical role in the security plan; the evolution of video and CCTV surveillance systems, network videos; cameras – analog, digital and network, cameras technologies; analog and digital video; video compression technologies; video processing equipments; video recorders, servers and storage; video management; video motion detectors; video analytics. 4. Privacy and Legislation Ubiquity of surveillance devices; balance between the needs of law enforcement of the privacy of law-abiding citizens. **Laboratory Experiments:** 1. Analysis of video compression in surveillance systems 2. Critical scene detection in surveillance systems 3. Video signal analysis.

Teaching/Learning Methodology

Teaching and Learning Method	Intended Subject Learning Outcome	Remarks
Lectures	1, 2, 3, 4	fundamental principles and key concepts of the subject are delivered to students
Tutorials	1, 2, 3, 4	supplementary to lectures and are conducted with smaller class size; students will be able to clarify concepts and to have a deeper understanding of the lecture material; problems and application examples are given and discussed
Laboratory sessions	3	students will make use of the software to develop surveillance applications.

Assessment Methods in Alignment with Intended Subject Learning Outcomes

Specific Assessment Methods/Tasks	% Weighting	Intended Subject Learning Outcomes to be Assessed (Please tick as appropriate)			
		1	2	3	4
1. Continuous Assessment (total 40%)					
• Short quizzes/ Assignments	10%	✓	✓	✓	✓
• Tests	20%	✓	✓	✓	✓
• Laboratory sessions	10%			✓	
2. Examination	60%	✓	✓	✓	✓
Total	100%				

The continuous assessment will consist of laboratory reports, a number of short quizzes, assignments, and tests.

<table>
<tr><td></td><td colspan="2">Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

<table>
<tr><th>Specific Assessment Methods/Tasks</th><th>Remark</th></tr>
<tr><td>Short quizzes</td><td>mainly objective tests (e.g., multiple-choice questions, true-false, and matching items) conducted to measure the students' ability to remember facts and figures as well as their comprehension of subject materials</td></tr>
<tr><td>Assignments, tests and examination</td><td>end-of chapter type problems used to evaluate students' ability in applying concepts and skills learnt in the classroom;
students need to think critically and creatively in order to come with an alternate solution for an existing problem</td></tr>
<tr><td>Laboratory sessions</td><td>Each students is required to produce a written report; accuracy and the presentation of the report will be assessed;
oral examination based on the laboratory exercises will be conducted for each student to evaluate his/her technical knowledge and communication skills</td></tr>
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<tr><td rowspan="7">Student Study Effort Expected</td><td>Class contact (time-tabled):</td><td></td></tr>
<tr><td>• Lecture</td><td>24 Hours</td></tr>
<tr><td>• Tutorial/Laboratory/Practice Classes</td><td>15 Hours</td></tr>
<tr><td>Other student study effort:</td><td></td></tr>
<tr><td>• Lecture: preview/review of notes; homework/assignment; preparation for test/quizzes/examination</td><td>36 Hours</td></tr>
<tr><td>• Tutorial/Laboratory/Practice Classes: preview of materials, revision and/or reports writing</td><td>30 Hours</td></tr>
<tr><td>Total student study effort:</td><td>105 Hours</td></tr>
<tr><td>Reading List and References</td><td colspan="2">Reference Books:

1. J.K. Petersen, Introduction to Surveillance Studies, CRC Press, 2013.
2. Vlado Damjanovski, CCTV: Networking and Digital Technology, Elsevier, 2005.
3. Herman Kruegle, CCTV Surveillance: Analog and Digital Video Practices and Technology, Elsevier Butterworth-Heinemann, 2007.
4. Fredrik Nilsson and Axis Communications, Intelligent Network Video: Understanding Modern Video Surveillance Systems, CRC Press, 2009.
5. Daniel Neyland, Privacy, Surveillance and Public Trust, Palgrave Macmillan, 2006.
6. Fredrika Bjorklund and Ola Svenonius, Video Surveillance and Social Control in a Comparative Perspective, Routledge, 2013.</td></tr>
<tr><td>Last Updated</td><td colspan="2">November 2014</td></tr>
<tr><td>Prepared by</td><td colspan="2">Dr YL Chan</td></tr>
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