

**Subject Description Form**

<b>Subject Code</b>	AAE2002																									
<b>Subject Title</b>	Aviation Information Systems																									
<b>Credit Value</b>	3																									
<b>Level</b>	2																									
<b>Pre-requisite/ Co-requisite/ Exclusion</b>	Pre-requisite: ENG2003 Information Technology, and ENG2002 Computer Programming																									
<b>Objectives</b>	To provide students with essential knowledge of Aviation Information Systems.																									
<b>Intended Learning Outcomes</b>	<p><b>Upon completion of the subject, students will be able to:</b></p> <ol style="list-style-type: none"> <li>1. Possess essential knowledge and skills in the area of informationsystems;</li> <li>2. Apply their knowledge, skills and hand-on experience to maintain information systems;</li> <li>3. Extend their knowledge to analyze and develop new modules and components for aviation applications.</li> </ol>																									
<b>Subject Synopsis/ Indicative Syllabus</b>	<p><b>Managing data processing and information systems</b> Review of database systems: database architectures and DBMS systems; Managing data processing: SQL programming language; stored procedures; functions; triggers; cursors; exception handling, normalization; Managing database in information systems: SQL injection and data recovery Case studies on <b>Aeronautical Data ARINC 424, ARINC 816</b></p> <p><b>Data communications protocols for aviation</b> Review of TCP/IP suite; IP networks; Aeronautical Telecommunication Network (ATN) using the Internet Protocol suite (IPS)</p> <p><b>Data Transmission</b> Characteristics of transmission lines; Line drivers &amp; receivers and their impacts on Line Replaceable Units (LRU); Multiple Access; transmission error detection and corrections.</p>																									
<b>Teaching/Learning Methodology</b>	<ol style="list-style-type: none"> <li>1. The teaching and learning methods include lectures/tutorial sessions, laboratories, tests, case study project and examination.</li> <li>2. The continuous assessment and examination are aimed at providing students with integrated knowledge required for aviation information systems.</li> <li>3. Technical/practical examples and problems are raised and discussed in class/tutorial sessions.</li> </ol> <table border="1" data-bbox="475 1727 1522 2056"> <thead> <tr> <th rowspan="2">Teaching/Learning Methodology</th> <th colspan="3">Intended subject learning outcomes</th> </tr> <tr> <th>1</th> <th>2</th> <th>3</th> </tr> </thead> <tbody> <tr> <td>1. Lecture</td> <td align="center">√</td> <td align="center">√</td> <td></td> </tr> <tr> <td>2. Tutorial</td> <td align="center">√</td> <td align="center">√</td> <td></td> </tr> <tr> <td>3. Laboratory</td> <td align="center">√</td> <td align="center">√</td> <td></td> </tr> <tr> <td>4. Case study report</td> <td align="center">√</td> <td align="center">√</td> <td align="center">√</td> </tr> </tbody> </table>			Teaching/Learning Methodology	Intended subject learning outcomes			1	2	3	1. Lecture	√	√		2. Tutorial	√	√		3. Laboratory	√	√		4. Case study report	√	√	√
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<b>Assessment Methods in Alignment with Intended Learning Outcomes</b>	<b>Specific assessment methods/tasks</b>		<b>% weighting</b>	<b>Intended subject learning outcomes to be assessed</b>		
				<b>1</b>	<b>2</b>	<b>3</b>
	1. Laboratory		20 %	✓	✓	
	2. Test		20 %	✓	✓	
	3. Case study project		20 %	✓	✓	✓
	4. Examination		40 %	✓	✓	✓
	Total		100 %			
<p><b>Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:</b></p> <p>Overall Assessment:</p> <p>0.40 End of Subject Examination + 0.60 Continuous Assessment</p> <p>The continuous assessment consists of three components: laboratories, tests, and case study project. They are aimed at evaluating the progress of students' study, assisting them in self-monitoring of fulfilling the respective subject learning outcomes, and enhancing the integration of the knowledge learnt.</p> <p>The examination is used to assess the knowledge acquired by the students for understanding and analyzing the problems critically and independently; as well as to determine the degree of achieving the subject learning outcomes.</p>						
<b>Student Study Effort Expected</b>	<b>Class contact:</b>					
	• Lecture					26 Hrs.
	• Tutorial					13 Hrs.
	<b>Other student study effort:</b>					
	• Self-Study					22 Hrs.
	• Case Study					44 Hrs.
	<b>Total student study effort</b>					<b>105 Hrs.</b>
<b>Reading List and References</b>	<ol style="list-style-type: none"> <li>1. Ramez Elmasri, Fundamentals of database systems, 7th Edition, Pearson, 2016.</li> <li>2. Helfrick A, Principles of Avionics, 9th Edition, Avionics Communications, 2015.</li> <li>3. Leanna Rierson, Developing safety-critical software: a practical guide for aviation software and DO-178c compliance, CRC Press, 2013.</li> <li>4. Edited by Sarhan M. Musa, Aeronautical telecommunications network: advances, challenges, and modeling, CRC Press, 2016.</li> <li>5. Edited by Thomas L. Seamster, Aviation information management: from documents to data, Ashgate, 2002.</li> </ol>					

Revised in August 2018