Course Code	TKIT163105
Course Name	Interoperability
Course Instructors	Lukito/Selo
Course Type	Required
Course Classification	Engineering Topics
Credit / Contact Hour per Week	3 / 150 minutes per Week
Course Description	This course aims to deliver fundamental knowledge on interoperability, on various level, such as data, application, architecture and services level. Furthermore, this course also provide some of up-to-date example of framework that support interoperability.
Prerequisites Courses	Software Engineering (TKIT162208)
Covered Student Outcome	**Engineering Knowledge** **Development of Engineering Solution** **Modern Equipment/tool Utilization**

Learning Outcome

		Study Program Student Outcome
No	Learning Outcome	SO (a) – SO (k)
1.	Student are able to explain the concept and theory of interoperability, and to identify interoperability within an organization or issues between organizations.	**Engineering Knowledge**
2.	Student are able to describe important components of interoperable systems and their mechanisms.	**Engineering Knowledge**
3.	Student are able to use available techniques and tools for developing interoperable systems.	**Modern Equipment Utilization**
4.	Students are able to develop a simple interoperability solution for integration and heterogeneity problems.	**Design & Development Solution**

Topic	1. The background of interoperability. 2. Levels of interoperability (hardware, network, data, application, services) 3. Interoperability and system/application integration in organizations 4. Interoperability primitives (IPC-RPC/RMI) 5. Middleware 6. Building blocks of interoperability (object orientation, interface, XML) 7. Technology: CORBA 8. Technology: web services 9. Development of interoperable systems 10. Interoperability frameworks 11. Interoperability blueprintCase study: Identity Metasystem.

Direct Asessment

Direct Asessment Plan	Measured Learning Outcome
Engineering Design Assignment	LO3, LO4
Mid Exam	LO1, LO2, LO3
Final Exam	LO1, LO2, LO3

Indirect Asessment	Questionnaire (EDOM)
References	[1] Supriya Ghosh. Net Centricity and Technological Interoperability in Organizations: Perspectives and Strategies. IGI Global. © 2010. [2] Yannis Kalfoglou. Cases on Semantic Interoperability for Information Systems Integration: Practices and Applications. IGI Global. © 2010.

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	[4] Peltzer, Dwight. .NET & J2EE Interoperability. McGraw-Hill/Osborne. © 2004.
	[5] Troelsen, Andrew. COM and .NET Interoperability. Apress. © 2002.
	[6] Laudati, Peter, and et al. Application Interoperability: Microsoft .NET and J2EE. Microsoft Press. © 2003.
	[7] Wyke, R. Allen, Sultan Rahman, and Brad Leupen. XML Programming. Microsoft Press. © 2002.
	[8] Liang-Jie Zhang. Web Services Research for Emerging Applications: Discoveries and Trends. IGI Global. © 2010.
	[9] Siegel, Jon. CORBA 3: Fundamentals and Programming, Second Edition. John Wiley & Sons. © 2000.
	[10] Sosinsky, Barrie. Cloud Computing Bible. John Wiley & Sons. © 2011.
	[11] Group, Butler. Unified Communications and Collaboration: Laying the Foundations for Business Process Flexibility and Innovation. Butler Group. © 2008.
	[12] Bertocci, Vittorio. Programming Windows Identity Foundation. Microsoft Press. © 2011