

Implementation plan Finished

Study unit	Developing ICT Systems (A0107), 10.0
Implementation	NIA1221: 2/2012-2013 (07.01.2013 - 21.06.2013)
Type	INITIATION OF PROFESSIONAL GROWTH (A029)
Groups	Primary: NIA12SN Others :
Involved in the project	
Lecturers	
Number of participants	Minimum: Maximum:
Enrolment period	26.11.2012 08:00 - 02.12.2012
Main timing for implementation	
Applicability	For exchange students: Yes For elective studies: No Open UAS student: No Suitable for virtual UAS: No
Teachers	De Arruda Camara Antonius (Teacher in charge), Rathod Paresh (Other teacher)
Campus	Laurea Leppävaara
Main location for implementation	
Implementation method	Optima realization/student group, Other method of implementation, Project/venture/R&D, Web/virtual Language: English Virtuality: 4 cr Integration of R&D: 0 cr
Implementation class	
Focus areas	
Evaluation at the latest	17.07.2013 Storing of graded material ends.: 17.06.2014
Exam days	
Having completed the study unit the student is able to	• analyze and explain the behaviour of simple programs involving the fundamental programming constructs covered by this unit • design, implement, test, and debug a program that uses each of the following fundamental programming constructs: basic computation, simple I/O, standard conditional and iterative structures, and the definition of functions • choose appropriate conditional and iteration constructs for a given programming task • implement object-oriented programming in working life projects. • analyze to differentiate and use key terms such as: information, data, database, database management system, metadata, and data mining • explain the role of data, information, and databases in organizations • describe and interpret Entity Relationship and Object Modeling • formulate and test SQL queries • design, develop and manage the database system • describe the structure of the World Wide Web as interconnected hypertext documents
Previous studies	Designing ICT Systems
Previous studies, more information	A0105 - Designing ICT Systems
Learning objectives	
Contents	Section-1: Fundamentals of programming (5 CR) • information technology: purpose, use, value • programming basics including variables, operators, expressions, statements and modifier • control/Block structures • class and methods • Object-oriented programming - overloading, encapsulation, constructors, inheritance, exception and IO Section-2: Relational Database Design and Development (5 CR)

Implementation plan Finished

	• introduction to Database Systems • Design of relational databases using UML class diagrams • relational database model • Basics of SQL • create and manage databases with a DBMS
Study material	Virtual Learning Environment will be provided
Tutoring and communication	Teachers will guide students during workshop based contact sessions. During the workshops teachers will introduce key concepts and support students in completing exercises from the virtual learning environment.
Evaluation criteria and methods	For both sections: Individual evaluation based on tasks assigned on class. There are two possibilities to complete the tasks: - For each section (programming and DB): completing three small tests during the semester Or - For each section (programming and DB): completing a large test at the end of the semester FINAL GRADE: 50% from the programming section and 50% from the DB part
Project (name)	
R&D methods	
Other arrangements	Complete details will be given during Induction class.

Learning events

Date	o'clock/at h	Subject	Content	Status	Teachers
01.02.2013	09:00 - 15:00	Orientation	09:00 - 10:00 Orientation to study-unit 10:00 - 11:30 Intro to database systems and relational databases 11:30 - 12:30 Lunch 12:30 - 13:00 Getting access to Viope 13:00 - 15:00 Basics of SQL - Viope chapters 1,4,7 Check also good SQL tutorial on www.w3schools.com/sql	246 (morning), 206 (afternoon)	Antonius De Arruda Camara, Paresh Rathod
08.02.2013	09:00 - 16:00	DB	Morning: SQL (Viope chapters 6,7,8) Afternoon: - Design process for relational databases (conceptual model, logical model, physical model) - Using UML Class diagrams to create a conceptual model		
15.02.2013	09:00-16:00	DB	Morning: Guided exercises with SQL Afternoon: Design of relational databases. Evolving a conceptual model (UML class diagram) into a logical model (relational schema) FOR STUDENTS THAT ARE NOT ATTENDING THE CLASS SESSIONS ON DATABASE DESIGN: Please study viope chapters 3,9 and 10. These chapters show a similar design process as we are seeing in class		
22.02.2013	09:00-16:00	Programming	Introduction to Java - algorithm, types, variables, statements and blocks (Focus on Viope Virtual Learning - chapter 1 to 4)		
01.03.2013	09:00-16:00	Programming	Printing, reading, operators and Methods in Java (Focus on Viope chapter 5 & 7)		
08.03.2013	09:00-12:00	Programming	Continue with Methods in Java and Block Structures (Focus on Viope Chapter 5 & 7)		

**Implementation plan Finished**

08.03.2013	13:00-16:00	DB	Design of relational databases. Exercise in class: based on a given problem domain we will create a conceptual model and transform it into a relational model		
15.03.2013	09:00-12:00	Programming	TEST-1: Programming Test Target: Covering Viope Chapter 1 to 5 and Methods (only learned in classroom workshop)		
15.03.2013	13:00-16:00	DB	TEST-1: Design of a relational database. Conceptual model and Relational model		
22.03.2013	09:00-12:00	Programming	Test-01 Programming Solution Block Structures ('for' loop) (Focus and Student Assignment - Viope Chapter 06)		
22.03.2013	13:00-16:00	DB	Guided studies focusing on Viope DB course chapters 11,12,13		
05.04.2013	09:00-12:00	Programming	Continue Block Structure ('while' and 'do-while' loops) (Focus area and assignment Viope Chapter 6 & 7)		
05.04.2013	13:00-16:00	DB	Creating database and tables (viope chapter 5) Creating databases using MySQL (XAMPP) - http://www.apachefriends.org/en/xampp.html		
12.04.2013	09:00-12:00	Programming	Topics: - 'switch-case', break, continue - Method, Object and Method Overloading (Take-away assignment study and finishing exercises - Viope Chapter 7)		
12.04.2013	13:00-16:00	DB	Using a given relational schema implement the SQL scripts that will create the database and implement the database in MySQL (XAMPP)		
19.04.2013	09:00-12:00	Programming	Topic: Revision Assignment - Finishing all exercises of Viope until chapter 07		
19.04.2013	13:00-16:00	DB	TEST-2: DB (SQL) Covering following chapters from Viope: 6,7,8,11,12,13	NOTE: Room 182!	
26.04.2013	09:00-12:00	Programming	TEST-2: Programming Test Target: Covering Viope Chapter 5,6,7. Test format: Same as previous test	NOTE: Room 182!	
26.04.2013	13:00-14:30	DB	NO CONTACT SESSION - Self-study time for students to review DB topics		
03.05.2013	09:00-12:00	Programming	(Focus on Viope chapter 8 & 9)		
03.05.2013	13:00-16:00	DB	Clearing questions students may have related to DB topics Collecting feedback on course (also about using Viope) Course closure		
10.05.2013	09:00-12:00	Programming	(Focus on Viope chapter 8 & 9)		
10.05.2013	13:00-16:00	Programming	(Focus on Viope chapter 10 & 11)		
17.05.2013	09:00-12:00	Programming	TEST-3: Programming Test Target: Covering Viope Chapter 08 to 11		
17.05.2013	13:00-16:00	DB	TEST-3: DB Creating databases Using MySQL/XAMPP Viope chapters 5 and 6		
24.05.2013	09:00-12:00	Programming	LARGE TEST: Programming Test		

Implementation plan Finished

				Target: Covering Viope Chapter 1 to 11		
24.05.2013	13:00-16:00		DB	Format and content of DB large test Using paper&pencil and some supporting material provided by the teacher: - Design of relational databases (using UML Class diagrams to represent a conceptual model. Creation of a relational schema) - Creation of SQL queries related to Viope chapters: 5,6,7,8,11,12,13 - Supporting material: example of conceptual model (UML class diagram), example of relational schema, steps to convert a conceptual model into a relational schema, SQL syntax Using MySQL/phpMyAdmin (XAMPP) in a computer having access to the internet: - Implementation and testing of SQL scripts related to creation of a relational database and insertion of data		
31.05.2013	09:00-12:00		Programming	LARGE TEST: Programming Test Target: Covering Viope Chapter 1 to 11		
31.05.2013	13:00-16:00		DB	2nd and final Large Test DB Format and content of DB large test Using paper&pencil and some supporting material provided by the teacher: - Design of relational databases (using UML Class diagrams to represent a conceptual model. Creation of a relational schema) - Creation of SQL queries related to Viope chapters: 5,6,7,8,11,12,13 - Supporting material: example of conceptual model (UML class diagram), example of relational schema, steps to convert a conceptual model into a relational schema, SQL syntax Using MySQL/phpMyAdmin (XAMPP) in a computer having access to the internet: - Implementation and testing of SQL scripts related to creation of a relational database and insertion of data		