



UNIVERSIDAD DISTRITAL
FRANCISCO JOSE DE CALDAS

UNIVERSIDAD DISTRITAL
FRANCISCO JOSÉ DE CALDAS
FACULTAD DE INGENIERIA

SYLLABUS

Page 1 de 6

FACULTAD DE INGENIERÍA
Maestría en Ciencias de la
Información y las Comunicaciones

Software Engineering

Emphasis

NAME OF THE SUBJECT: Software Engineering Trends

- Obligatory (X): Basic (X) Complementary ()
- Elective (): Intrinsic () Extrinsic ()

NUMBER OF ACADEMIC CREDITS: Four (4).

COURSE TYPE: THEORETICAL: ___ PRACTICAL: ___ THEORETICAL-PRACTICAL: X

Methodological alternatives:

Master Class (X), Seminar (), Seminar - Workshop (X), Workshop (), Practice (X),

Tutored projects (X), Other: _____

Justification

Software Engineering has developed in such a magnitude that the areas contained in it gain important recognition for the breadth of knowledge that they contain, because of this it is necessary to be in a constant review of key issues that contribute significantly to the discipline of Software Engineering, and are seen as trends in the area. This type of foresight becomes a key factor in providing not only the opportunity to take on cutting-edge topics but also to achieve curricular flexibility.

PREREQUISITE: For the good development of the course it is considered necessary that the student has wide knowledge in computer science, information systems, databases, programming among others.

Content

GENERAL OBJECTIVE

- To provide a space for foresight that allows for a continuous review of areas in the discipline Software Engineering.



UNIVERSIDAD DISTRITAL
FRANCISCO JOSE DE CALDAS

UNIVERSIDAD DISTRITAL
FRANCISCO JOSÉ DE CALDAS
FACULTAD DE INGENIERIA

SYLLABUS

Page 2 de 6

FACULTAD DE INGENIERÍA
Maestría en Ciencias de la
Información y las Comunicaciones

SPECIFIC OBJECTIVES

- To carry out a continuous revision of topics of interest in Software Engineering.
- To propose disciplinary options that empower Software Engineering.

SYNTHETIC PROGRAM:

CHAPTER 1 Knowledge Management

- General Concepts
- Knowledge Frameworks

CHAPTER 2 Big Data

- General Concepts
- Specific concepts

CHAPTER 3 Business Intelligence

- General Concepts
- Specific concepts

CHAPTER 4 Enterprise Architecture

- General Concepts
- Specific concepts

CHAPTER 5 Other issues

Strategies

METHODOLOGY:

The methodological strategy pursues the objective of developing the module by generating participation and integration with the instructors. Therefore, the teacher will create an environment conducive to the teaching-learning process, in which the software development process plays a preponderant role for the development of each class session.

At the beginning of the module, the teacher will present to the students the detailed course of



the subject. The sessions of each subject will be combined with the following strategies.

Face-to-face work

- Master Class
- Personal Study
- Group work dynamics
- Research synthesis
- Theoretical construction
- Tertulia

autonomous work:

- Development of readings on previous topics.
- Investigation of topics to be carried out class discussions and presentations thereof

Type of course	Hours			Teacher hours / week	Student hours / week	Total Hours Student / semester	Academic credits
	DW	CW	AW	(DW + CW)	(DW + CW +AW)	X 18 weeks	
	3	1	8	4	12	192	4

Direct Presential Work (DW): classroom work in plenary session with all students.

Mediated-Cooperative Work (CW): Teacher tutoring work to small groups or individually to students.

Autonomous Work (AW): Student work without the presence of the teacher, which can be done in different instances: in work groups or individually, at home or in a library, laboratory, etc.)

Resources

PHYSICAL RESOURCES REQUIRED:

- Master classes to introduce the basic concepts using different resources: presentations, videos, consultation of links of interest.
- Collaborative workshops to apply the basic concepts
- Bibliographic review, readings and exhibitions by the students.
- Group development of a course project to implement a case of software engineering trends

BIBLIOGRAPHY:

- Craig Larman. "Applying UML and Patterns 2nd Edition". Prentice Hall. 2002.
- Bernd Bruegge, Allen h. Dutoit. "Ingeniería de Software Orientado a Objetos". Prentice Hall. 2002.



UNIVERSIDAD DISTRITAL
FRANCISCO JOSÉ DE CALDAS

UNIVERSIDAD DISTRITAL
FRANCISCO JOSÉ DE CALDAS
FACULTAD DE INGENIERIA

SYLLABUS

Page 4 de 6

FACULTAD DE INGENIERÍA
Maestría en Ciencias de la
Información y las Comunicaciones

- Salvador Sanchez, Miguel Ángel Sicilia, Daniel Rodriguez. Ingeniería del Software un enfoque desde la guía SWEBOK. Alfaomega 2012.
- Perdita Stevens, Rob Pooley. "Utilización de UML en Ingeniería del Software con Objetos y Componentes". Addison Wesley. 2002.
- Grady Booch, James Rumbaugh, Ivar Jacobson. "The Unified Modeling Language User Guide". Addison-Wesley. 1999.
- Ramirez, A. "Introducción a los Patrones de Diseño." Creative Commons. Agosto 2004.
- J. y Rodríguez, G. "Patrones de Interacción: Una Solución para el Diseño de la Retroalimentación Visual de Sistemas Interactivos". CIC. 2002.
- C. Alexander, S. Ishikawa, M. Silverstein, M. Jacobson, I. Fiksdahl-King, y S. Angel, "A Pattern Language", Oxford University Press, New York, 1977
- P. Coad, D. North y M. Mayfield, "Object Models Strategies, Patterns, and Applications", Yourdon Press, Prentice Hall, 1995.
- J.O. Coplien, "Generative Pattern Languages: An emerging direction of software design", C++ Report, julio-agosto 1994.
- J.O. Coplien, "Advanced C++ Programming Styles and Idioms", Addison-Wesley, 1992.
- E. Gamma, R. Helm, R. Johnson y J. Vlissides, "Design Patterns Elements of Reusable Object-Oriented Software", Addison-Wesley, 1995.
- R. Helm, "Patterns in Practice", Proceedings OOPSLA'95, ACM SigPlan Notices vol.30, No. 10, octubre 1995.
- D.C. Schmidt, "Using Design Patterns to Develop Reusable OO Communication Software", CACM Vol.38, No. 10, 1995.
- H.A. Schmid, "Crating the Architecture of a Manufacturing Framework by Design Patterns", Memorias de OOPSLA'95.
- H.Huni, R. Johnson, R. Engel, "A Framework for Network Protocol Software", Memorias de OOPSLA'95. G. Booch, "Designing an Application Frameworks", Dr. Dobb's Journal, Febrero de 1994.
- R.E. Johnson, "Documenting Frameworks using Patterns", Memorias de OOPSLA'92. D.B. Lange, Y. Nakamura, "Interactive Visualization of Design Patterns", Memorias de



UNIVERSIDAD DISTRITAL
FRANCISCO JOSE DE CALDAS

UNIVERSIDAD DISTRITAL
FRANCISCO JOSÉ DE CALDAS
FACULTAD DE INGENIERIA

SYLLABUS

Page 5 de 6

FACULTAD DE INGENIERÍA
Maestría en Ciencias de la
Información y las Comunicaciones

OOPSLA'95.

- R. Helm y E. Gamma, "Patterns for Resusable O-O Software", Dr. Dobb's Sourcebook, marzo-abril de 1995.
- Eds. J.O. Coplien y D.C. Schmidt, "Pattern Languages of Program Design", AddisonWesley 1995., "ectures, and projects
- W.J. Brown, R.C. Malveau, H.W. "Skip" MacCormick III y T.J. Mowbrayin AntiPatterns, Refactoring Software, ArchitCrisis", John Wiley & Sons, 1998.

BIBLIOGRAPHIC RESOURCES:

- IEEE Database
- SPRINGER Database
- ELSEVIER Database
- Kaggle

Course Schedule

Week /Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Big Data	x	x	x													
2. Business Intelligence				x	x	x	x	x	x	x						
3. Knowledge Management											x	x	x			
4. Entrprise Architecture														x	x	x



UNIVERSIDAD DISTRITAL
FRANCISCO JOSÉ DE CALDAS

UNIVERSIDAD DISTRITAL
FRANCISCO JOSÉ DE CALDAS
FACULTAD DE INGENIERIA

SYLLABUS

Page 6 de 6

FACULTAD DE INGENIERÍA
Maestría en Ciencias de la
Información y las Comunicaciones

Evaluation

ASPECTS TO EVALUATE

The teacher explains and describes the criteria to be taken into account when evaluating. For example:

- Evaluation of the teacher's performance by the students
- Evaluation of student learning in its dimensions: individual /group, theoretical/practical, oral/written.
- Self-evaluation:
- Co-evaluation of the course: orally and in writing between students and teacher.

TEACHER INFORMATION:

NAME: José Nelson Pérez Castillo