



Programma del Corso integrato "Advanced Models for Software Engineering"

Il corso e' composto da 2 moduli: 1) Advanced Modelling Techniques, 2) Advanced Verification and Validation

Programma del Modulo "Advanced Modelling Techniques"

- Codice: DT0318
- Tipo di corso: Opzionale (Laurea Magistrale in Informatica percorso GSEEM), Opzionale (Laurea Magistrale in Informatica percorso NEDAS), Opzionale (Laurea Magistrale in Informatica percorso SEAS), Opzionale (Laurea Magistrale in Informatica percorso UBIDIS)
- Livello del corso: Lauree Magistrali
- Semestre: 2

Numero di crediti ECTS: (Laurea Magistrale in Informatica) 3 (carico 75 ore)

Docenti: Alfonso Pierantonio (Alfonso.Pierantonio@univaq.it)

1	Obiettivi del corso	
2	Contenuti del corso e risultati formativi (descrittori di Dublino)	
3	Prerequisiti	
4	Modalita' e lingua di insegnamento	Lingua: Inglese
5	Metodi di accertamento	

Programma del Modulo "Advanced Verification and Validation"

- Codice: DT0319
- Tipo di corso: Opzionale (Laurea Magistrale in Informatica percorso GSEEM), Opzionale (Laurea Magistrale in Informatica percorso NEDAS), Opzionale (Laurea Magistrale in Informatica percorso SEAS), Opzionale (Laurea Magistrale in Informatica percorso UBIDIS)
- Livello del corso: Lauree Magistrali
- Semestre: 2

Numero di crediti ECTS: (Laurea Magistrale in Informatica) 3 (carico 75 ore)

Docenti: Vittorio Cortellessa (Vittorio.Cortellessa@univaq.it)

1	Obiettivi del corso	This course aims to study advanced concepts in the area of software performance and reliability analysis, such as the ones related to the interpretation of analysis results. The main objective is to achieve a deep knowledge of some of the most recent techniques to address advanced problems in this area.
2	Contenuti del corso e risultati formativi (descrittori di Dublino)	<p>Gli argomenti trattati nel corso comprendono:</p> <ul style="list-style-type: none"> • Introduction to advanced problems in performance and reliability analysis • The backward path : Interpretation of results and generation of feedback • Performance Antipatterns <p>Alla fine del corso, lo studente dovrebbe:</p> <ul style="list-style-type: none"> • o Be aware of techniques that can address advanced problems in performance and reliability analysis of software systems. o Be experienced in the integration of multiple tools for the analysis of software systems. o Be able to design, solve and interpret models that reflect non-functional aspects of abstract architectures of software systems. o Have effectively worked on team to deliver some group homework.
3	Prerequisiti	This is a very advanced course in the area of reliability and performance analysis of software systems, so it is assumed that students have already taken a course of performance and reliability basics, as well as a course on advanced software engineering.

4	Modalita' e lingua di insegnamento	The course language is English. It includes 48 hours of frontal lectures, which are partitioned in theory (about 50%), exercises and homework discussions (about 50%). Lingua: Inglese
5	Metodi di accertamento	There is no formal pre-assessment, apart from Course pre-requisites. Fulfilment of such pre-requisites is verified by formative assessment. The formative assessment is performed via interactions between teacher and students during lectures. Students are aware since the beginning of the Course that they will be involved (in turns) in: Questioning and discussion, by means of open oral questions to the class or to single students; Summative Assessment Group project followed by an optional oral exam. The group project is aimed at: (1) verification of theoretical competences, and in particular of knowledge and comprehension of Course contents; (2) verification of skills in understanding and solving significant problems, and in explaining the proposed solutions, (3) capability of collaborative work. This is aimed at verifying the ability of application of techniques learnt during the Course, of analysis of problems and synthesis of suitable solutions, and of evaluation of alternative solutions. Criteria of evaluation will be: the level of knowledge and practical ability; the property of use of a technical/mathematical language; the clarity and completeness of explanations. The oral exam will occur within one week from the project delivery and will typically cover the areas of the project that need clarification. The oral test takes place for all students. Assessment breakdown: 100% end-of-semester summative assessment.