

## FME Review of Education Resources

- **Last update:** 2004.05.14.
- **Currently:** 117 modules.
- **Review performed by:** FME-SOE
- **E-mail:** education@fmeurope.org.

### In Europe

- Action Semantics and Compiler Generation [Ref: ascg-01]
  - **Year/Level:**
  - **Contact:** P.D. Mosses
  - **Offered at:** Aarhus
  - **Topics:** Action Semantics
  - **Languages/tools:** Actress ; RAT ; RML
- Programming Languages and Formal Semantics [Ref: dSprog Sem]
  - **Year/Level:**
  - **Contact:** P.D. Mosses
  - **Offered at:** Aarhus
  - **Topics:** Functional Programming ; Formal Semantics
  - **Languages/tools:** Prolog ; Standard ML
- Semantics and Verification 2002 [Ref: F01-Dat4]
  - **Year/Level:**
  - **Contact:** A. Ingólfssdóttir
  - **Offered at:** Aalborg
  - **Topics:** BDD ; Process Algebras
  - **Languages/tools:** CCS ; UPPAAL ; CWB
- Testing and Verification [Ref: TOV04]
  - **Year/Level:**
  - **Contact:** K.G. Larsen
  - **Offered at:** Aalborg
  - **Topics:** Model Checking ; Program verification ; Software Testing
  - **Languages/tools:** MSC ; UPPAAL
- Verification [Ref: V03]
  - **Year/Level:** MSc
  - **Contact:** K.G. Larsen

- **Offered at:** Aalborg
  - **Topics:** LTL ; CTL ; BDD
  - **Languages/tools:** SPIN ; UPPAAL
- Formal Specification [Ref: MSH1012]
  - **Year/Level:** 3
  - **Contact:** N. Dean
  - **Offered at:** Anglia
  - **Topics:**
  - **Languages/tools:** Z-Notation
- Theory of Computation [Ref: ]
  - **Year/Level:** 3
  - **Contact:** S.M. Sousa
  - **Offered at:** Beira-Interior
  - **Topics:** ; Functional Programming ; DMat
  - **Languages/tools:** The CAML Language ; COQ
- Formal Methods [Ref: ]
  - **Year/Level:** MSc
  - **Contact:** S.M. Sousa
  - **Offered at:** Beira-Interior
  - **Topics:** Hoare Logic ; DMat
  - **Languages/tools:** B-Method ; The CAML Language ; COQ ; WHY
- Formal Modelling and Process-oriented Systems [Ref: ]
  - **Year/Level:**
  - **Contact:** J. Padberg
  - **Offered at:** Berlin
  - **Topics:** Petri Nets
  - **Languages/tools:**
- Program Quality Verification [Ref: ]
  - **Year/Level:**
  - **Contact:** C. Laneve
  - **Offered at:** Bologna
  - **Topics:** Abstract Interpretation ; TT
  - **Languages/tools:** T-Logic
- Specification and Formal Verification in B [Ref: ]
  - **Year/Level:** 5/ MSc
  - **Contact:** G.Sutre
  - **Offered at:** Bordeaux

- **Topics:** Algorithm refinement ; Program verification
  - **Languages/tools:** B-Method ; Atelier-B ; B-Toolkit
- Formal Methods in Software Engineering [Ref: ]
  - **Year/Level:**
  - **Contact:** A. Griffault
  - **Offered at:** Bordeaux
  - **Topics:**
  - **Languages/tools:**
- Formal Specifications [Ref: ]
  - **Year/Level:**
  - **Contact:** A. Griffault
  - **Offered at:** Bordeaux
  - **Topics:**
  - **Languages/tools:**
- Specification and synthesis of Haskell programs [Ref: SS03]
  - **Year/Level:**
  - **Contact:** T. Mossakowski
  - **Offered at:** Bremen
  - **Topics:** Functional Programming ; Algebra of Programming
  - **Languages/tools:** Haskell
- Techniques of Correct Software Development [Ref: TEKS]
  - **Year/Level:**
  - **Contact:** C. Lüth
  - **Offered at:** Bremen
  - **Topics:** ADT ; Model Checking
  - **Languages/tools:** CSP ; CASL ; Isabelle ; FDR
- Algebraic Specification [Ref: ]
  - **Year/Level:**
  - **Contact:** L. Schröder
  - **Offered at:** Bremen
  - **Topics:** ADT
  - **Languages/tools:** CASL
- Semantics of Programming Languages [Ref: ]

- **Year/Level:**
- **Contact:** L. Schröder
- **Offered at:** Bremen
- **Topics:** Formal Semantics
- **Languages/tools:**
- Systems, Automata, and Coalgebras [Ref: ]
  - **Year/Level:**
  - **Contact:** L. Schröder
  - **Offered at:** Bremen
  - **Topics:** Process Algebras
  - **Languages/tools:** CCS
- Temporal and Modal Logics for Parallelism and security [Ref: ]
  - **Year/Level:**
  - **Contact:** L. Schröder
  - **Offered at:** Bremen
  - **Topics:** Temporal Logic ; Process Algebras
  - **Languages/tools:**
- Methodes formelles, verification, model checking [Ref: FORMEL]
  - **Year/Level:** S7
  - **Contact:** L. Marcé
  - **Offered at:** Brest
  - **Topics:** LTL ; CTL ; Model Checking
  - **Languages/tools:** LOTREC
- Software Engineering II [Ref: ]
  - **Year/Level:**
  - **Contact:** L.C. Paulson
  - **Offered at:** Cambridge
  - **Topics:** Algorithm refinement
  - **Languages/tools:** Z-Notation ; Standard ML
- Formal Specification of Data and Process Types [Ref: FSDPT]
  - **Year/Level:**
  - **Contact:** Horst Reichel
  - **Offered at:** T.U. Dresden
  - **Topics:** ADT ; Process Algebras
  - **Languages/tools:** CASL

- System Modelling and Specification [Ref: 4ICT8]
  - **Year/Level:**
  - **Contact:** A. Hughes
  - **Offered at:** Dublin
  - **Topics:** Mathematics of Program Construction
  - **Languages/tools:** Haskell ; Irish VDM ; IVDM Library
- Mathematical Modelling [Ref: 3ICT5]
  - **Year/Level:**
  - **Contact:** M. Tyrrell
  - **Offered at:** Dublin
  - **Topics:** ; Process Algebras ; Algorithms and Complexity ; Pi-Calculus
  - **Languages/tools:**
- Information Systems (part II) [Ref: 4BA1]
  - **Year/Level:**
  - **Contact:** M. Airchinnigh
  - **Offered at:** Dublin
  - **Topics:** Formal Semantics ; Mathematics of Program Construction
  - **Languages/tools:** Irish VDM
- Functional Programming and Specification [Ref: ]
  - **Year/Level:**
  - **Contact:** D. Sannella
  - **Offered at:** Edinburgh
  - **Topics:**
  - **Languages/tools:** Standard ML ; Extended ML
- Formal Methods in the Software Life Cycle [Ref: OOTI]
  - **Year/Level:**
  - **Contact:** E. Vink
  - **Offered at:** Eindhoven
  - **Topics:** Program verification ; Model Checking
  - **Languages/tools:** JML ; ESC/Java 2
- Introduction to Formal Methods [Ref: 2R440]
  - **Year/Level:** 4
  - **Contact:** J. Baeten
  - **Offered at:** Eindhoven

- **Topics:**
- **Languages/tools:**
- Process Algebra [Ref: 2M920]
  - **Year/Level:** 2/3
  - **Contact:** J. Baeten
  - **Offered at:** Eindhoven
  - **Topics:** Process Algebras
  - **Languages/tools:**
- Proving with Computer Assistance [Ref: 2IF40]
  - **Year/Level:** 4.2
  - **Contact:** R. Nederpelt
  - **Offered at:** Eindhoven
  - **Topics:** Automated theorem proving
  - **Languages/tools:**
- Formal Methods in Systems Modeling [Ref: ELINFO 01A00062]
  - **Year/Level:** 1
  - **Contact:** R.T. Boute
  - **Offered at:** Gent
  - **Topics:** Algebra of Programming ; Formal program techniques
  - **Languages/tools:**
- Further Programming 1 [Ref: FP1]
  - **Year/Level:** 1
  - **Contact:** R. Irving
  - **Offered at:** Glasgow
  - **Topics:** Formal program techniques
  - **Languages/tools:**
- Software Technology [Ref: SWT]
  - **Year/Level:** 3
  - **Contact:** B.K. Aichernig
  - **Offered at:** Graz
  - **Topics:** Formal Semantics ; Formal program techniques
  - **Languages/tools:** VDM-SL ; VDMTools
- Selected Topics on Software Technology [Ref: AKSWT]
  - **Year/Level:**
  - **Contact:** P. Lucas
  - **Offered at:** Graz
  - **Topics:** Formal program techniques
  - **Languages/tools:** PVS

- Reasoning about Programs [Ref: 141@]
  - **Year/Level:** 1
  - **Contact:** K. Broda
  - **Offered at:** Imperial C.
  - **Topics:** Formal program techniques
  - **Languages/tools:**
- Software Engineering Environments [Ref: 475]
  - **Year/Level:**
  - **Contact:** M. Huth
  - **Offered at:** Imperial C.
  - **Topics:** Formal program techniques
  - **Languages/tools:** Alloy
- Software Engineering - Methods [Ref: 302]
  - **Year/Level:**
  - **Contact:** M. Huth
  - **Offered at:** Imperial C.
  - **Topics:** Formal program techniques
  - **Languages/tools:** Alloy
- Software and Systems Design [Ref: CO508]
  - **Year/Level:** BSc 2
  - **Contact:** R. Lemos
  - **Offered at:** Kent
  - **Topics:**
  - **Languages/tools:** Z-Notation ; CADiZ
- Theory of Computer Science [Ref: CO515]
  - **Year/Level:** BSc 2
  - **Contact:** J. Derrick
  - **Offered at:** Kent
  - **Topics:** Functional Programming ; Formal program techniques ; FOL
  - **Languages/tools:** Z-Notation
- Distributed Systems [Ref: CO610]
  - **Year/Level:** BSc 3
  - **Contact:** E.A. Boiten
  - **Offered at:** Kent
  - **Topics:**
  - **Languages/tools:** E-LOTOS ; Estelle ; SDL

- Software Failure and Risk [Ref: CO617]
  - **Year/Level:** BSc 3
  - **Contact:** R. Lemos
  - **Offered at:** Kent
  - **Topics:** Model Checking
  - **Languages/tools:** UPPAAL
- Formal Methods [Ref: CO861]
  - **Year/Level:** MSc
  - **Contact:** H. Bowman
  - **Offered at:** Kent
  - **Topics:** Model Checking
  - **Languages/tools:** LOTOS ; Object-Z ; CADP
- Advanced System Design [Ref: CO7205]
  - **Year/Level:**
  - **Contact:** J. Fiadeiro
  - **Offered at:** Leicester
  - **Topics:** Software architecture
  - **Languages/tools:** Unity ; CommUnity
- Program Verification and Specification [Ref: CS03PV]
  - **Year/Level:** 3
  - **Contact:** D. Clark
  - **Offered at:** London (K.C.)
  - **Topics:** Model Checking ; Program verification
  - **Languages/tools:** B-Method
- Introduction to the Theory of Computation [Ref: CS1ITC]
  - **Year/Level:**
  - **Contact:** A. Kurucz
  - **Offered at:** London (K.C.)
  - **Topics:**
  - **Languages/tools:**
- Applied Logic [Ref: CS2APL]
  - **Year/Level:**
  - **Contact:** M. Zakharyashev
  - **Offered at:** London (K.C.)
  - **Topics:** CTL
  - **Languages/tools:**



- Modal and Temporal Logics [Ref: CSMMTL]
  - **Year/Level:**
  - **Contact:** A. Kurucz
  - **Offered at:** London (K.C.)
  - **Topics:** Temporal Logic
  - **Languages/tools:**
- Formal Methods [Ref: ]
  - **Year/Level:**
  - **Contact:** D. Buchs
  - **Offered at:** Lausanne
  - **Topics:** ADT
  - **Languages/tools:**
- Formal Aspects of Software Engineering I [Ref: 02262]
  - **Year/Level:** S4-S7
  - **Contact:** A. Haxthausen
  - **Offered at:** Lyngby
  - **Topics:**
  - **Languages/tools:** RSL ; RAISE tools
- Formal Aspects of Software Engineering II [Ref: 02268]
  - **Year/Level:** S7-S9
  - **Contact:** D. Bjørner
  - **Offered at:** Lyngby
  - **Topics:** Formal Semantics ; Algebraic Semantics
  - **Languages/tools:** RSL ; RAISE tools
- Software Engineering [Ref: ]
  - **Year/Level:** 4
  - **Contact:** R.G. Crespo
  - **Offered at:** Lisbon
  - **Topics:**
  - **Languages/tools:** Z-Notation ; LOTOS
- Programmation fonctionnelle et preuves [Ref: ]
  - **Year/Level:**
  - **Contact:** Y. Bertot
  - **Offered at:** Lyon
  - **Topics:** ; TT ; Functional Programming

- **Languages/tools:** The CAML Language ; COQ
- Reasoning about Programs [Ref: CS1112]
  - **Year/Level:** 1
  - **Contact:** K. Lau
  - **Offered at:** Manchester
  - **Topics:** FOL ; Formal program techniques
  - **Languages/tools:**
- Techniques de preuve et vérification formelle [Ref: ]
  - **Year/Level:** MSc
  - **Contact:** J.-R. Abrial
  - **Offered at:** Marseille
  - **Topics:** Abstract State Machines ; Model Checking
  - **Languages/tools:** B-Method
- Méthodes Formelles [Ref: ]
  - **Year/Level:** MSc
  - **Contact:** D. Cansell
  - **Offered at:** Metz
  - **Topics:** Formal program techniques
  - **Languages/tools:** B-Method
- Formal methods for concurrent and distributed systems [Ref: ]
  - **Year/Level:** 4
  - **Contact:** D. Mandrioli
  - **Offered at:** Milan Poli.
  - **Topics:** Hoare Logic ; Refinement in B ; Petri Nets ; Temporal Logic
  - **Languages/tools:** B-Method ; TRIO
- Software engineering II [Ref: ]
  - **Year/Level:** 4
  - **Contact:** P. San Pietro
  - **Offered at:** Milan Poli.
  - **Topics:** Model Checking ; Petri Nets
  - **Languages/tools:** SPIN
- Industrial automation II [Ref: ]
  - **Year/Level:** 4/5
  - **Contact:** L. Mezzalana
  - **Offered at:** Milan Poli.
  - **Topics:** Petri Nets
  - **Languages/tools:** TRIO
- Software Engineering II [Ref: ]

- **Year/Level:**
- **Contact:** C. Ghezzi
- **Offered at:** Milan Poli.
- **Topics:** Model Checking ; Software Testing
- **Languages/tools:** Alloy ; SPIN
- Programming Methodology I [Ref: MP-I]
  - **Year/Level:** 2
  - **Contact:** J.N. Oliveira
  - **Offered at:** Minho
  - **Topics:** Functional Programming ; Algebra of Programming
  - **Languages/tools:** Haskell ; Hugs ; GHC
- Programming Logics II [Ref: 702752]
  - **Year/Level:** 2
  - **Contact:** J.B. Almeida
  - **Offered at:** Minho
  - **Topics:** ; TT
  - **Languages/tools:**
- Programming Logics III [Ref: ELP-III]
  - **Year/Level:** 3
  - **Contact:** J.M. Valença
  - **Offered at:** Minho
  - **Topics:** Petri Nets ; Model Checking
  - **Languages/tools:** NuSMV ; Integrated Net Analyzer
- Programming Method. IV (Concurrency) [Ref: MP-IV]
  - **Year/Level:** 3
  - **Contact:** L.S. Barbosa
  - **Offered at:** Minho
  - **Topics:** Process Algebras ; Pi-Calculus
  - **Languages/tools:** CCS ; CWB ; PICT
- Formal Methods I [Ref: MFP-I]
  - **Year/Level:** 4
  - **Contact:** J.N. Oliveira
  - **Offered at:** Minho
  - **Topics:** Algebra of Programming ; Formal program techniques ; Mathematics of Program Construction
  - **Languages/tools:** VDM-SL ; VDMTools
- Formal Methods II [Ref: MFP-II]
  - **Year/Level:** 4
  - **Contact:** J.N. Oliveira

- **Offered at:** Minho
  - **Topics:** Algebra of Programming ; Data refinement ; Mathematics of Program Construction
  - **Languages/tools:** VDM-SL ; VDM++ ; VDMTools
- Formal Methods Laboratory [Ref: LAB-MF]
  - **Year/Level:** 5
  - **Contact:** J.N. Oliveira
  - **Offered at:** Minho
  - **Topics:**
  - **Languages/tools:** Alloy ; B-Method ; VDM++ ; VDMTools
- Specification and Verification [Ref: ]
  - **Year/Level:**
  - **Contact:** T. Nipkow
  - **Offered at:** T.U. München
  - **Topics:** FOL ; Formal program techniques ; Automated theorem proving
  - **Languages/tools:** Standard ML ; Isabelle ; HOL
- Programming Language Semantics [Ref: ]
  - **Year/Level:**
  - **Contact:** T. Nipkow
  - **Offered at:** T.U. München
  - **Topics:** Formal Semantics ; TT ; Hoare Logic ; Automated theorem proving
  - **Languages/tools:** Isabelle
- Foundations of Systems Development [Ref: ]
  - **Year/Level:**
  - **Contact:** M. Wirsing
  - **Offered at:** L-M-U München
  - **Topics:** ADT ; Formal program techniques ; TLA ; LTL ; Model Checking
  - **Languages/tools:** Z-Notation ; SPIN ; CASL
- Inform. Syst. Specification and Modelling [Ref: ]
  - **Year/Level:** 5/ MSc
  - **Contact:** D. Méry
  - **Offered at:** Nancy
  - **Topics:** DMat
  - **Languages/tools:** B-Method

- Models and Algorithms [Ref: ]
  - **Year/Level:** 2
  - **Contact:** D. Méry
  - **Offered at:** Nancy
  - **Topics:** Formal program techniques ; Functional Programming
  - **Languages/tools:** Standard ML
- Model-Oriented Formal Methods [Ref: MSF-CA]
  - **Year/Level:** MSc
  - **Contact:** J.C. Attiogbé
  - **Offered at:** Nantes
  - **Topics:**
  - **Languages/tools:** Z-Notation ; B-Method ; ZTC ; ZANS ; Z/EVES ; Atelier-B
- Méthode de spécification formelle B [Ref: ]
  - **Year/Level:**
  - **Contact:** H. Habrias
  - **Offered at:** Nantes
  - **Topics:**
  - **Languages/tools:** B-Method
- Formal Methods Integration [Ref: IFM-CA]
  - **Year/Level:** MSc 1-2
  - **Contact:** J.C. Attiogbé
  - **Offered at:** Nantes
  - **Topics:** Multi-paradigm Specifications ; Process Algebras
  - **Languages/tools:** CCS ; CSP ; B-Method
- Formal Specification of Software [Ref: CSC227]
  - **Year/Level:** 2
  - **Contact:** S. Riddle
  - **Offered at:** Newcastle
  - **Topics:**
  - **Languages/tools:** VDM-SL ; VDMTools
- Formal Methods in Practice [Ref: CSC230]
  - **Year/Level:** 2
  - **Contact:** J. Steggles
  - **Offered at:** Newcastle

- **Topics:**
- **Languages/tools:** VDM-SL ; VDMTools
- Méthodes Formelles et Fiabilité des Systèmes Embarqués [Ref: ]
  - **Year/Level:** MSc
  - **Contact:** M. Auguin (contact)
  - **Offered at:** Nice
  - **Topics:** BDD ; Temporal Logic ; Model Checking ; Program verification
  - **Languages/tools:**
- Mathematics of Program Construction [Ref: G51MPC]
  - **Year/Level:** 1
  - **Contact:** R. Backhouse
  - **Offered at:** Nottingham
  - **Topics:** Mathematics of Program Construction
  - **Languages/tools:**
- Programming Algebra [Ref: G53PAL]
  - **Year/Level:** 3
  - **Contact:** R. Backhouse
  - **Offered at:** Nottingham
  - **Topics:** Algebra of Programming ; Fixed Point Calculus ; Polytypism
  - **Languages/tools:**
- Specification of Reactive Systems [Ref: ]
  - **Year/Level:**
  - **Contact:** H. Wehrheim
  - **Offered at:** Oldenburg
  - **Topics:**
  - **Languages/tools:** CSP ; SPIN ; FDR
- Formal Program Design I [Ref: FPD-I]
  - **Year/Level:**
  - **Contact:** G. Jones
  - **Offered at:** Oxford
  - **Topics:** Algorithm refinement
  - **Languages/tools:**
- Formal Program Design II [Ref: FPD-II]
  - **Year/Level:**

- **Contact:** R. Bird
  - **Offered at:** Oxford
  - **Topics:** Data refinement
  - **Languages/tools:**
- Lambda Calculus [Ref: LC]
  - **Year/Level:**
  - **Contact:** A. Ker
  - **Offered at:** Oxford
  - **Topics:** ; Functional Programming
  - **Languages/tools:**
- Application-Oriented Program Semantics [Ref: AOPS]
  - **Year/Level:**
  - **Contact:** J. Sanders
  - **Offered at:** Oxford
  - **Topics:** Formal Semantics
  - **Languages/tools:**
- Domain Theory [Ref: DTS]
  - **Year/Level:**
  - **Contact:** G.M. Reed
  - **Offered at:** Oxford
  - **Topics:** Domains ; Pi-Calculus
  - **Languages/tools:**
- Software Engineering Mathematics [Ref: SEM]
  - **Year/Level:** M
  - **Contact:** A. Martin
  - **Offered at:** Oxford
  - **Topics:** DMat
  - **Languages/tools:** Z-Notation
- Specification and Design [Ref: SDE]
  - **Year/Level:** M
  - **Contact:** A. Martin
  - **Offered at:** Oxford
  - **Topics:**
  - **Languages/tools:** Z-Notation ; FuZZ
- Advanced Software Development [Ref: ASD]
  - **Year/Level:** M

- **Contact:** J. Davies
  - **Offered at:** Oxford
  - **Topics:** Refinement Calculus ; Data refinement
  - **Languages/tools:** Z-Notation
- Machine-Assisted Software Engineering [Ref: MAS]
  - **Year/Level:** M
  - **Contact:** J. Davies
  - **Offered at:** Oxford
  - **Topics:**
  - **Languages/tools:** B-Method ; B-Toolkit
- Concurrency and Distributed Systems [Ref: CDS]
  - **Year/Level:** M
  - **Contact:** J. Davies
  - **Offered at:** Oxford
  - **Topics:**
  - **Languages/tools:** CSP ; FDR
- Advanced Concurrency Tools [Ref: ACT]
  - **Year/Level:** M
  - **Contact:** J. Davies
  - **Offered at:** Oxford
  - **Topics:**
  - **Languages/tools:** CSP ; FDR
- Functional Programming [Ref: FPR]
  - **Year/Level:** M
  - **Contact:** J. Gibbons
  - **Offered at:** Oxford
  - **Topics:** Functional Programming
  - **Languages/tools:** Haskell ; Hugs ; Gofer
- Theory of Computation [Ref: TC]
  - **Year/Level:** 4
  - **Contact:** M. Florido
  - **Offered at:** Porto
  - **Topics:** ; Formal Semantics ; DMat ; TT
  - **Languages/tools:** Haskell ; Prolog
- Logics and Verification [Ref: ]
  - **Year/Level:**



- **Contact:** P. Habermehl
  - **Offered at:** Paris VII
  - **Topics:** BDD ; Model Checking ; Temporal Logic
  - **Languages/tools:** BBDC
- Méthodes Formelles de spécification des Systèmes Informatiques [Ref: MF]
  - **Year/Level:** 5
  - **Contact:** S. Vignes
  - **Offered at:** Paris (ENST)
  - **Topics:**
  - **Languages/tools:** Z-Notation ; B-Method
- Foundations of Abstract Interpretation [Ref: ]
  - **Year/Level:** MSc
  - **Contact:** P. Cousot
  - **Offered at:** Paris VII (et al)
  - **Topics:** Abstract Interpretation
  - **Languages/tools:**
- Verification of infinite systems [Ref: ]
  - **Year/Level:** MSc
  - **Contact:** P. Schnoebelen
  - **Offered at:** Paris VII (et al)
  - **Topics:** Petri Nets ; Program verification
  - **Languages/tools:**
- Foundations of Informatics: Semantics A [Ref: ]
  - **Year/Level:**
  - **Contact:** U. Montanari
  - **Offered at:** Pisa
  - **Topics:** Formal Semantics
  - **Languages/tools:**
- Foundations of Informatics: Semantics II [Ref: ]
  - **Year/Level:**
  - **Contact:** U. Montanari
  - **Offered at:** Pisa
  - **Topics:** TT ;
  - **Languages/tools:**
- Spécifications Formelles [Ref: ]
  - **Year/Level:** 4/5

- **Contact:** E. Andres (contact)
  - **Offered at:** Poitiers
  - **Topics:** Formal program techniques ; Formal Semantics
  - **Languages/tools:** B-Method
- Formal methods in informatics [Ref: ]
  - **Year/Level:**
  - **Contact:** A. Labella
  - **Offered at:** Roma
  - **Topics:** Algebraic Semantics ; Fixed Point Calculus ; Domains
  - **Languages/tools:**
- Paradigmi di Programmazione [Ref: ]
  - **Year/Level:**
  - **Contact:** P. Cenciarelli
  - **Offered at:** Roma
  - **Topics:** Hoare Logic ; ; TT ; Polytypism ; Formal program techniques ; Formal Semantics
  - **Languages/tools:** Standard ML
- Introduction to Formal Methods [Ref: CM140]
  - **Year/Level:** 1
  - **Contact:** M.J. Butler
  - **Offered at:** Southampton
  - **Topics:** Program verification
  - **Languages/tools:** Z-Notation ; ZTC
- Z Specification Design Exercise [Ref: EL208]
  - **Year/Level:** 2
  - **Contact:** M.J. Butler
  - **Offered at:** Southampton
  - **Topics:**
  - **Languages/tools:** Z-Notation ; ZTC
- Critical Systems [Ref: CM314]
  - **Year/Level:** 3
  - **Contact:** M.J. Butler
  - **Offered at:** Southampton
  - **Topics:** Safety Analysis Techniques ; Refinement in B
  - **Languages/tools:** B-Method ; B-Toolkit
- Systems and Software Engineering [Ref: CS L3]
  - **Year/Level:** S2

- **Contact:** A. Abdallah
  - **Offered at:** London (S.B.)
  - **Topics:**
  - **Languages/tools:** CSP ; Z-Notation ; Haskell
- Software Engineering II [Ref: 31P6]
  - **Year/Level:**
  - **Contact:** S. Maharaj
  - **Offered at:** Stirling
  - **Topics:**
  - **Languages/tools:** Z-Notation
- Spécifications formelles, connaissances et raisonnement [Ref: ]
  - **Year/Level:** MSc
  - **Contact:** P. Gancarski (contact)
  - **Offered at:** Strasbourg
  - **Topics:** ; Program verification
  - **Languages/tools:** COQ
- Foundations of Informatics (semantics) [Ref: ]
  - **Year/Level:**
  - **Contact:** M. Ciancaglini
  - **Offered at:** Torino
  - **Topics:** Formal Semantics ; ; TT
  - **Languages/tools:**
- Modélisation et analyse des systèmes à événements discrets [Ref: ]
  - **Year/Level:**
  - **Contact:** Robert Valette
  - **Offered at:** Toulouse
  - **Topics:** Petri Nets
  - **Languages/tools:**
- Formal Methods for Software Engineering [Ref: 213520]
  - **Year/Level:**
  - **Contact:** E. Brinksma
  - **Offered at:** Twente
  - **Topics:** Process Algebras
  - **Languages/tools:** Z-Notation ; SDL ; FSP ; Z/EVES ; LTSA

- Protocol Validation [Ref: 214012]
  - **Year/Level:**
  - **Contact:** J.-P. Katoen
  - **Offered at:** Twente
  - **Topics:** LTL ; CTL ; Program verification
  - **Languages/tools:** SPIN ; UPPAAL ; NuSMV
- Functional programming in Standard ML [Ref: ]
  - **Year/Level:** 3/4
  - **Contact:** A. Tarlecki
  - **Offered at:** Warsaw
  - **Topics:** FOL ; Functional Programming ; Formal program techniques ; Formal Semantics ;
  - **Languages/tools:** Haskell ; Standard ML
- Semantics and Specifications [Ref: ]
  - **Year/Level:**
  - **Contact:** A. Tarlecki
  - **Offered at:** Warsaw
  - **Topics:** Formal Semantics ; Hoare Logic
  - **Languages/tools:**
- Design of Information Structures [Ref: CS126]
  - **Year/Level:** 1
  - **Contact:** S. Russ
  - **Offered at:** Warwick
  - **Topics:** ADT
  - **Languages/tools:**
- Formal Methods in Software Engineering [Ref: MFIEng]
  - **Year/Level:** 5
  - **Contact:** M. Alpuente
  - **Offered at:** Univ. Polit. Valencia
  - **Topics:** Program verification ; Model Checking
  - **Languages/tools:**
- Introd. to high-level system design and analysis [Ref: 37-483]
  - **Year/Level:** S1
  - **Contact:** R.F. Staerk
  - **Offered at:** Zuerich
  - **Topics:** Abstract State Machines
  - **Languages/tools:**

## Outside Europe

- See Formal Methods Education Resources (which also includes European courses)