Teaching

Egon Börger

1 Teaching

- U Salerno (Italy), Istituto di Scienze dell'Informazione (1972-1976)

  1. **Teoria ed Applicazioni delle Machine Calcolatrici.**
     Programming and Computer Architecture, 1972/73 - 1975/76.
  2. **Algoritmi e Calcolabilità.**
     Algorithms and Computability Theory, 1973/74 - 1975/76.
  3. **Metodi per il Trattamento dell'Informazione.**
     Semantics and Complexity Theory, 1974/75.
  4. **Logica matematica per informatici.**
     Logic for Computer Science, Post-graduate-school (Scuola di Perfezionamento in Scienze Cibernetiche e Fisiche), 1973, 1974, 1975.

- U Münster(Germany), Institut für math. Logik und Grundlagenforschung (1972-1978)

  1. **Entscheidungsprobleme in der Prädikatenlogik** (Decision Problems in First-Order Logic), 1972.
  2. **Kalküle und Entscheidungsprobleme** (Calculi and their Decision Problems), 1973/74.
  3. **Formale Sprachen** (Formal Languages), 1975.
  4. **Kombinatorische Logik und Semantik von Programmiersprachen** (Combinatory Logic and Semantics of Programming Languages), 1975/76.
  5. **Algorithmisch unlösbare Probleme in der Mathematik** (Algorithmically Unsolvable Problems in Mathematics), 1976.
  6. **Komplexitätstheorie** (Complexity Theory), 1976/77.
  7. **Seminar Entscheidungsprobleme in der Prädikatenlogik (mit D. Rödding)** (Seminar on Decision Problems in First-Order Logic), 1976/77.
  8. **Konkrete Komplexitätstheorie** (Concrete Complexity Theory), 1977.

9. **Seminar Neuere Forschungen zu prädikatenlogischen Entscheidungsproblemen** (Seminar on Recent Research in First-Order Logic Decision Problems), 1977.
10. **Geschichte der Logik** (History of Logic), 1977/78.
11. **Seminar Themen der Rekursionstheorie** (Seminar on Recursion Theory Themes), 1977/78.
12. **Proseminar Petri Netze** (Undergraduate Seminar on Petri Nets), 1978.
13. **Logik IV (Entscheidungsprobleme und Komplexitätsfragen)** (Decision Problems and Complexity Issues), 1978.
14. **Seminar Komplexitätstheorie (mit D. Rödding)** (Seminar on Complexity Theory), 1978/79.
15. **Einführung in die Komplexitätstheorie** (Introduction to Complexity Theory), 1978/79.
16. **Seminar zur Logik** (Seminar in Logic), 1978/79.
17. **Russische Arbeiten zur Reduktionstheorie** (Russian Research on Reduction Theory), 1979/80.
18. **Entscheidbare Fälle der Prädikatenlogik und deren Komplexität** (Decidable Cases of First-Order Logic and their Complexity), 1980/81.
19. **Logik** (Logic), 1984/85.
20. **Fragen der philosophischen Grundlegung der Mathematik** (Questions concerning a Philosophical Foundation of Mathematics)

    Interdisziplinäres Kolloquium, mit Prof. Dr. phil. F. Kaulbach und Dr. phil. D. Barnocchi, Philosophisches Seminar der Universität Münster. 1978/79.

- U Dortmund (Germany), Abteilung Informatik (1978-1985)

1. **Rechnerstrukturen.** (Computer Architecture)
2. **Formale Sprachen.** (Formal languages)
3. **Schaltwerktheorie.** (Circuit Design Theory)
4. **Berechenbarkeit.** (Computability)
5. **Komplexitätstheorie.** (Complexity Theory)
6. **Kombinatorische Automatentheorie.** (Combinatorial Automata Theory)
7. **Komplexität logischer Entscheidungsprobleme.** (Complexity of Logical Decision Problems)

8. **Logik (mit Anwendungen in Datenbanktheorie und PROLOG).** (Logic with Applications in Data Base Theory and in Prolog)
9. **Grundbegriffe der theoretischen Informatik.** (Introduction to Theoretical Computer Science)

- U Udine (Italy), Dipartimento di Informatica 1982/83

1. **Sistemi II** (Operating Systems) 1982/83

- U Pisa (Italy), Dip. di Informatica (1985-2010)

1. **Metodi per il Trattamento dell'Informazione.**
   Computation Theory, Complexity, Semantics, Specification, Formal Methods.
   Fundamental one year theory course for 3d year students of the regular CS curriculum. 1985-1995.
2. **Logica Matematica per Informatici.**
   One year logic course for 3d/4th year students of the regular cs curriculum. Until 1989.
3. **Seminari di Logica.**
   Advanced Logic Seminar for PH.D. students in Computer Science. Until 1995.
4. **Fondamenti di Informatica.**
   Undergraduate Course for 1st year students of the Applied Computer Science Study Program (Scuola Diretta a Fini Speciali in Informatica). 1986/87
5. **Methods of System Design and Analysis (Programming and Software Engineering Principles)**
   One-semester basic course for 4th year students (1996-2010).
6. **Software Engineering: Modeling Methods.**
   One-semester avanced course for 4th year students (1996-2010).

- External courses (1986-2022)

1. **Introduzione alla Programmazione e Scienza dei Calcolatori.**
   Graduate Architecture and Programming Course (25 lectures), 28.7.-30.8.1986, Università di Perugia, Italy.
2. **Informatica Teorica.**
   Advanced Ph.D. Course on Complexity Theory (20 lectures + 6 seminars)
   Scuola Matematica Interuniversitaria, Cortona, Italy, 5.7.-1.8.1987

3. **Informatica Teorica.**

   Advanced Course on Current Research in Theoretical Computer Science.

   Post-graduate School *Scuola di Specializzazione in Logica Matematica*, Universita di Siena, Italy, Winter Term 1987/88 (48 lectures)

4. **Calcolatori Elettronici.**

   Introductory Course on Architecture and Programming.
   Post-graduate Program of Accademia Navale, Livorno, Italy 1988/89

5. **Semantik für PROLOG.**

   Spezialvorlesung (16 hrs), June 1989, Universität Dortmund, Germany, Abteilung Informatik, Diplomanden-und Doktorandenseminar (Prof. H. Ganzinger, Prof. A. B. Cremers)

6. **Informatica Matematica.**

   Advanced Ph.D. Course (18 lectures + 7 seminars) on *Semantics of programming languages (Modula, Prolog, Occam)*, Scuola Matematica Interuniversitaria, Cortona, Italy, 9.7.-30.7.1989

7. **Computational Complexity of Logical Theories.**

   Ph.D. Course (12 Lectures), First International School for Computer Science Researchers, Acireale (Sicily) 20.11.-9.12.1989

8. **Semantique de Prolog et Prolog III.**

   Special Course (6 Lectures) to Groupe de Logique e Informatique, Faculte' des Sciences de Luminy (Marseille) and l'Universite' de Montpellier, France, 10.-19.9.1990

9. **Complexity of Logical Decision Problems and Finite Model Theory.**

   Introductory Course (10 hrs.), European School on Logic, Language and Information, Colchester (GB), 17.-28.8.1992

10. **Evolving Algebra Based Specification and Verification of Logic Programming Systems.**

    Ph.D. course (12 hrs.), 5th International School for Computer Science Researchers, Lipari (Sicily), 21.6.-3.7.1993

11. **Die Komplexität logischer Entscheidungsprobleme.**

    Ph.D. course (14 hrs.) at Graduiertenkolleg, Centrum für Informations- und Sprachverarbeitung, Universität München, Germany, May 1994.

12. **Die Methode der dynamischen Algebren zur Sicherung der Qualität von Software.**

    Ph.D. course (12 hrs.) at Institut für Informatik und Gesellschaft, Universität Freiburg/Brsg., Germany, September 1994.

13. **Formale Methoden zur Spezifikation und Implementierung von Programmiersprachen.**

    Vorlesung für Studenten höherer Semester (24 Std.), TU Wien, Austria, Mai 1995.

14. **Evolving Algebras.**

    Intensive mini-course, held jointly with Yuri Gurevich at BRICS, University of Aarhus, Danemark, August 7–10, 1995.

15. **Hardware specification, design and verification using Abstract State Machines.**

    Ph.D. course (12 hrs.), 9th International School for Computer Science Researchers, Lipari (Sicily), June-July 1997.

16. **Specification, design and verification methods in hardware and software engineering.**

    Ph.D. course (10 hrs.) at Graduiertenkolleg TU Dresden, Germany, July 1997.

17. **Using Abstract State Machines for specification, analysis and design of industrial software.**

    Industrial Tutorial (20 hrs.), Fabbrica Servizi Telematici, Gruppo Atlantis, Cagliari (Italy) 19.-23.7.1999 and DIRON Software House, Muenster (Germany) April 1999.

18. **Using Abstract State Machines in Requirements Engineering.**

    Tutorial, Fourth IEEE International Conference on Requirements Engineering (ICRE'2000), Schaumburg, Illinois/USA (June 19-23, 2000)

19. **Tutorial on the employment of Abstract State Machines for industrial software design.**

    5th NASA Langley Formal Methods Workshop (Lfm2000), Williamsburgh, Virginia/USA (June 13-15, 2000)

20. **Reliable Software Development Using Abstract State Machines.**

    Course (5 hrs.) for the School on "Formalware Engineering" (Formal Methods for the Engineering of Software), held at CISM, Udine, September 24-28, 2001.

21. **Using Abstract State Machines for Requirements Engineering.**

    Ph.D. course (8 hrs.), 14th International School for Computer Science Researchers (Software Technology), Lipari (Sicily), July 2002.

22. **High-Level Modeling Patterns.**

Ph.D. course (8 hrs.), 19th International School for Computer Science Researchers on *Advances in Software Engineering*, Lipari (Sicily), July 2007. See Springer LNCS 5316 (2008).

23. **Einführung in die Abstract State Machines-Methode**.
    CS, TU Braunschweig, 6 lectures, May 2011
24. **Using Abstract State Machines for Modeling Embedded Systems**.
    PhD Course at Department of Engeneering, University of Pisa, June/July 2012
25. **Approaches to Systems Modeling**.
    PhD Course at Computer Science Department, University of Pisa, January **2014** and March **2018**
26. **Abstract State Machines Kurs fuer Softwareentwickler**.
    FH Oberösterreich, Fakultät für Informatik, Kommunikation und Medien, Hagenberg bei Linz (Austria), 24 lectures, 28.3.-15.4.**2011**, 13.-30.3.**2012**, 5.3.-21.3.**2013**, 25.3.-10.4.**2014**, 5.-22.5.**2015**, 21.3.-6.4.**2017**, 24.4-8.5.**2018**, 26.3.- 11.4.**2019**
27. **Rigorous Specification Methods**.
    PhD Course at Computer Science Department, University of Pisa, 16 lectures, February 2021
28. **Modeling Programming Language Constructs**.
    PhD Course at Computer Science Department, University of Pisa, 18 lectures, March 2022