MPLA

INTER-UNIVERSITY PROGRAM OF GRADUATE STUDIES "LOGIC AND THEORY OF ALGORITHMS AND COMPUTATION"

EXTERNAL EVALUATION REPORT

1. Introduction

The Program was approved, for a ten year period, by Ministerial Decree Φ.711/B7/146/14-3-1996 (ΦΕΚ 24/B/1996) and started its operation during the spring semester of the academic year 1996-1997, with the admission of its first students. The Ministerial Decree (M.D.) was modified by M.D. Φ.711/B7/38/20-1-1999 (ΦΕΚ 73/B/1999) and M.D. 14711/B7/29-1-2004 (ΦΕΚ 272/B/2004), according to which it is running.

The Program is run by

(1) the Department of Mathematics of N.K.U.A.[1]
(2) the Department of Philosophy and History of Science of N.K.U.A.
(3) the Department of Informatics and Telecommunications of N.K.U.A.
(4) the School of Applied Mathematical and Physical Sciences of N.T.U.A.[2]
(5) the School of Electrical and Computer Engineering of N.T.U.A.
(6) the Department of Computer Engineering and Informatics of the University of Patras.

Administrative support for the program is provided by the Department of Mathematics of N.K.U.A., while the educational and research work is done at all participating Departments and Schools.

The Program awards M.Sc. and Ph.D. degrees in the following specializations:

(1) Logic and Theory of Algorithms and Computation
(2) Mathematical Logic
(3) Computer Science Logic.

During the period from Jan. 1, 1997, to Aug. 31, 2003, the Program was financially supported by funds through E.U. programs ΕΠΕΑΕΚ I and II, while from Sept. 1, 2003, until today the Program has been supported by funds sent annually from the Ministry of Education.

The educational and research work realized in the Program is analysed in detail below.

2. Statistical data concerning students and graduates

2.1. **Master of Science.** In January 1997 the first students were selected, who enrolled and started their studies in the Program in February 1997. Then, before the beginning of each academic year, two selections of new students were made, the first in June and the second in September.

[1]National and Kapodistrian University of Athens
[2]National Technical University of Athens

The number of candidacies that have been submitted until today is four hundred and thirty (430); out of these, the Special Inter-Departmental Committee (S.I.C.) approved of one hundred seventy four (174). One hundred and twenty one (121) of the candidates admitted have enrolled in the Program; out of these, fifty six (56) have graduated with an M.Sc., while an extra eight (8) are expected to graduate during the exam period in June 2007. The table below contains detailed information for each year of operation of the Program.

General Information

Year	Applications	Admissions	Enrollment	Graduates
1996-1997	31	14	9	4
1997-1998	28	12	9	6
1998-1999	35	13	12	6
1999-2000	25	12	6	5
2000-2001	37	18	16	12
2001-2002	32	18	12	8
2002-2003	38	11	9	5
2003-2004	66	19	13	6
2004-2005	54	23	17	4
2005-2006	42	12	8	–
2006-2007	42	22	10	–
Total	**430**	**174**	**121**	**56**

The candidates for studying in the Program aiming at obtaining an M.Sc. had graduated from various Departments/Schools of Universities in Greece or abroad. A percentage of 63% of the candidates came from Departments of Mathematics, a percentage of 22% from Departments of Informatics or Electrical Engineering or Computer Engineering, while the remaining 15% of the candidates were graduates of other Departments (Physics etc.). The table below contains detailed information for each year of operation of the Program.

First Degree of Applicants for the M.Sc.

Year	Applications	Mathematics	Informatics	Other
1996-1997	31	24	4	3
1997-1998	28	22	3	3
1998-1999	35	28	5	2
1999-2000	25	16	5	4
2000-2001	37	27	6	4
2001-2002	32	23	5	4
2002-2003	38	18	10	10
2003-2004	66	37	19	10
2004-2005	54	32	15	7
2005-2006	42	24	12	6
2006-2007	42	20	11	11
Total	**430**	**271**	**95**	**64**

The composition of the set of students is similar to that of the set of applicants; indeed, about 2 out of 3 students (65%) came from Departments of Mathematics, about 1 out of 4 (24%) came from Departments of Informatics or Electrical Engineering or Computer Engineering, while 1 out of 10 (11%) came from other Departments. The table below contains detailed information for each year of operation of the Program.

First Degree of Students for the M.Sc.

Year	Enrollment	Mathematics	Informatics	Other
1996-1997	9	7	1	1
1997-1998	9	6	3	–
1998-1999	12	8	2	2
1999-2000	6	3	2	1
2000-2001	16	12	3	1
2001-2002	12	10	1	1
2002-2003	9	3	2	4
2003-2004	13	10	3	–
2004-2005	17	11	5	1
2005-2006	8	3	5	–
2006-2007	10	6	2	2
Total	**121**	**79**	**29**	**13**

The composition of the set of graduates is also similar to that of the set of candidates and that of the students; indeed, 7 out of 10 graduates (70%) came from Departments of Mathematics, about 2 out of 10 graduates (18%) came from Departments of Informatics or Electrical Engineering or Computer Engineering, while about 1 out of 10 graduates (12%) came from other Departments. The table below contains detailed information for each year of operation of the Program.

First Degree of Graduates with an M.Sc.

Year	Graduates	Mathematics	Informatics	Other
1996-1997	4	3	1	–
1997-1998	6	4	2	–
1998-1999	6	4	–	2
1999-2000	5	3	1	1
2000-2001	12	9	2	1
2001-2002	8	7	–	1
2002-2003	5	2	1	2
2003-2004	6	5	1	–
2004-2005	4	2	2	–
2005-2006	–	–	–	–
2006-2007	–	–	–	–
Total	**56**	**39**	**10**	**7**

2.2. **Doctoral Diploma.** The S.I.C. decided that the selection of students for the Ph.D. should be done sparingly, in order to secure the quality of doctoral candidates and their professional perspective. Until today eight (8) doctoral candidates have been accepted, two (2) of which are expected to complete their theses during the present academic year. The table below contains detailed information concerning all doctoral students studying in the Program.

First Degree of Students for Ph.D.

Year	Enrollment	Mathematics	Informatics	Other
1996-1997	–	–	–	–
1997-1998	–	–	–	–
1998-1999	–	–	–	–
1999-2000	–	–	–	–
2000-2001	1	–	1	–
2001-2002	2	2	–	–
2002-2003	1	–	–	1
2003-2004	1	1	–	–
2004-2005	1	1	–	–
2005-2006	–	–	–	–
2006-2007	2	1	1	–
Total	**8**	**5**	**2**	**1**

3. Career of graduates

The academic or professional career of the 56 M.Sc. holders is very satisfactory, since 46% of them are continuing their studies towards obtaining a doctoral diploma in Greece or abroad, 23% have jobs in the private sector, 13% work in Secondary Education, 7% work in the public sector, while no information is known for the remaining 11% of them.

Career of Graduates

Name	Ph.D.	Sec.Educ.	Publ.Sect.	Priv.Sect.	Unknown
P. Lekeas	X				
O. Kebapi		X			
A. Dimakakos	X				
Ch. Toga				X	
E. Kalyvianaki	X				
Ch. Kapoutsis	X				
G. Stathopoulou		X			
A. Matzavinos	X				
A. Stavrou	X				
D. Tsiounis					X
D. Ketikidis					X
Ch. Verykios				X	
G. Vafeiadou	X				

Name	**Ph.D.**	**Sec.Educ.**	**Publ.Sect.**	**Priv.Sect.**	**Unknown**
A. Arvanitakis	X				
P. Sypsa		X			
P. Eleftheriou	X				
K. Kypriotakis	X				
M. Liazi	X				
D. Stathopoulos					X
N. Salamanos	X				
D. Spontas				X	
I. Souldatos	X				
O. Raptis	X				
T. Aslanidis	X				
E. Kandilakis			X		
V. Kalliakouda			X		
Ch. Tzetzias		X			
G. Tzachristas		X			
S. Kalliakouda			X		
E. Peroytseas					X
K. Georgiou	X				
N. Maragos				X	
N. Kiourtis				X	
L. Kalantzi	X				
E. Gavatha				X	
E. Kotelida				X	
Ch. Tsironis				X	
G. Kokoretsis		X			
Th. Valaskopoulou				X	
G. Georgiou		X			
A. Vidali	X				
K. Garoufi	X				
G. Tsotakos				X	
M. Marinou				X	
X. Rafios				X	
G. Piliouras	X				
Ch. Konaxis	X				
N. Vaporis	X				
A. Koutsioumbas			X		
Ch. Anagnostopoulos	X				
K. Manouvelos				X	
V. Paschalis	X				
G. Zikos	X				
V. Karadimas					X
D. Diochnos	X				
P. Rouvelas					X
Total	**26**	**7**	**4**	**13**	**6**

Half of the Program's 26 graduates continuing their studies towards obtaining a Ph.D. study in Greece, while the remaining ones abroad. The table below contains detailed information for all graduates of the Program that are doctoral candidates.

Graduates Continuing for a Ph.D.

Name	**MPLA**	**Greece**	**Abroad**
P. Lekeas		NTUA	
A. Dimakakos		Econ. AUEB	
E. Kalyvianaki	X		
Ch. Kapoutsis			C.S. MIT
A. Matzavinos			Math. Dundee
A. Stavrou			C.S. Columbia
G. Vafeiadou	X		
A. Arvanitakis		Math. NKUA	
P. Eleftheriou			Math. Notre Dame
K. Kypriotakis			Math. U.C.Irvine
M. Liazi		Inform. NKUA	
N. Salamanos		Inform. AUEB	
I. Souldatos			Math. UCLA
O. Raptis			Math. CalTech
T. Aslanidis		El.Eng. NTUA	
K. Georgiou			C.S. Toronto
L. Kalantzi	X		
A. Vidali		Inform. NKUA	
K. Garoufi			Phil. Tübingen
G. Piliouras			C.S. Cornell
Ch. Konaxis		Inform. NKUA	
N. Vaporis			Math. Utrecht
Ch. Anagnostopoulos			C.S. Imperial
V. Paschalis	X		
G. Zikos	X		
D. Diochnos			C.S. U.C.Davis
Total	**5**	**8**	**13**

We should add that three of these graduates have already obtained their Doctoral Diplomas and have begun academic careers as follows:

(1) Ch. Kapoutsis, Postdoctoral Associate, E.T.H., Switzerland.
(2) A. Matzavinos, Postdoctoral Associate, University of Minnesota, U.S.A.
(3) A. Arvanitakis, Lecturer, NTUA.

Furthermore, three more graduates are expected to complete their doctoral theses during the current academic year.

4. Teaching-Research Faculty

The educational and research work has been realized with the participation of several faculty members of the 6 Departments/Schools running the Program, as well as Postdoctoral Associates and Visiting Professors from abroad. One of the basic aims of the S.I.C. has been to maintain a high level of participation of external collaborators in all activities of the Program, in order to secure conditions of multi-faceted, quality education for all students. The list below contains names of all faculty members and external collaborators that have taught at least one course in the Program.

Department of Mathematics, N.K.U.A.

V. Farmaki, Associate Professor
Y. Moschovakis, Professor
E. Raptis, Associate Professor
D. Thilikos, Assistant Professor
A. Tsarpalias, Associate Professor

Department of Philosophy and History of Science, N.K.U.A.

C. Dimitracopoulos, Professor

Department of Informatics and Telecommunications, N.K.U.A.

Y. Emiris, Associate Professor
Y. Ioannidis, Professor
I. Karali, Lecturer
S. Kolliopoulos, Assistant Professor
M. Koubarakis, Associate Professor
E. Koutsoupias, Professor
P. Rondogiannis, Assistant Professor
V. Zissimopoulos, Professor

School of Applied Mathematical and Physical Sciences, N.T.U.A.

G. Koletsos, Associate Professor

School of Electrical and Computer Engineering, N.T.U.A.

F. Afrati, Professor
A. Pagourtzis, Lecturer
N. Papaspyrou, Assistant Professor
T. Sellis, Professor
S. Zachos, Professor

Department of Computer Engineering and Informatics, University of Patras

S. Cosmadakis, Professor
E. Kirousis, Professor
S. Nikoletseas, Assistant Professor
P. Spirakis, Professor

Postdoctoral Associates

Th. Andronikos, Ph.D., N.T.U.A.
A. Arvanitakis, Ph.D., N.K.U.A.
Ch. Cornaros, Ph.D., University of Crete
T. Dimitriou, Ph.D., University of California, San Diego
E. Foustoucos, Doctorat, Université Paris XI
P. Karazeris, Ph.D., University of Aarhus
C. Koutras, Ph.D., N.T.U.A.
M. Nikolaidi, Ph.D., N.K.U.A.
Ch. Nomikos, Ph.D., N.T.U.A.
A. Potika, Ph.D., N.T.U.A.
D. Richerby, Ph.D., University of Cambridge, U.K.
N. Rigas, Ph.D., N.T.U.A.
G. Stavrinos, Ph.D., N.T.U.A.
P. Stefaneas, Ph.D., N.T.U.A.
D. Theotokis, Ph.D., N.K.U.A.

Visiting Professors

E. Kranakis, Professor, Carleton University, Canada
K. Georgatos, Associate Professor, John Jay College/C.U.N.Y.
M. Mytilinaios, Professor, A.U.E.B.(†)
P. Peppas, Associate Professor, University of Patras
J. R. Moschovakis, Professor, Occidental College, U.S.A.
I. Soskov, Professor, University of Sofia, U.S.A.
V. Tannen, Professor, University of Pennsylvania, U.S.A.
V. Vassalos, Assistant Professor, A.U.E.B.
S. Weinstein, Professor, University of Pennsylvania, U.S.A.

We should add that a significant number of former Postdoctoral Associates of the Program now have regular positions at Universities:

(1) Th. Andronikos, Ionian University
(2) A. Arvanitakis, N.T.U.A.
(3) P. Karazeris, University of Patras
(4) C. Koutras, University of Peloponnese
(5) M. Nikolaidi, Harokopio University
(6) Ch. Nomikos, University of Ioannina.

5. Teaching

A large number of courses has been taught in the Program, many of which for the first time in Greece. These courses were taught by faculty members of the Departments/Schools running the Program, as well as Postdoctoral Associates and Visiting Professors from Greece and abroad. We should note that many of these courses were offered also to students of other Graduate Programs. In what follows, the complete list of courses offered is given, together with the names of corresponding instructors.

Spring semester 1996-1997

Λ1. Mathematical Logic, C. Dimitracopoulos
Λ2. Computability, Y. Moschovakis
Λ3. Algorithms and Complexity I, E. Kirousis
Λ5. Set Theory, A. Tsarpalias

Fall semester 1997-1998

Λ1. Mathematical Logic, C. Dimitracopoulos
Λ2. Computability, Y. Moschovakis and M. Mytilinaios
Λ3. Algorithms and Complexity I, S. Zachos
Λ11. Recursion Theory, Y. Moschovakis
Λ14. Introduction to λ-Calculus, G. Koletsos

Spring semester 1997-1998

Λ4. Algorithms and Complexity II, F. Afrati
Λ5. Set Theory, A. Tsarpalias
Λ15. Model Theory, C. Dimitracopoulos
Λ16. Logic Programming, E. Foutoucos
Λ97A. Probabilistic Algorithms, P. Spirakis

Fall semester 1998-1999

Λ1. Mathematical Logic, C. Dimitracopoulos
Λ2. Computability, Y. Moschovakis
Λ3. Algorithms and Complexity I, Ch. Nomikos
Λ18. Mathematical Theory of Programming Languages, K. Georgatos
Λ98A. Logic Programming II, E. Foustoucos
Λ98B. Principles of Constructive Mathematics, J. R. Moschovakis
Λ98N. Metamathematics of Set Theory, Y. Moschovakis

Spring semester 1998-1999

Λ4. Algorithms and Complexity II, Ch. Nomikos
Λ5. Set Theory, A. Tsarpalias
Λ13. Proof Theory, G. Koletsos
Λ19. Non-classical Logics, C. Koutras
Λ98Γ. Category Theory and Applications, P. Karazeris
Λ98Π. Cryptography, E. Kranakis
Λ98Ο. The *Java* Programming Language, D. Theotokis

Fall semester 1999-2000

Λ1. Mathematical Logic, C. Dimitracopoulos
Λ2. Computability, Y. Moschovakis
Λ3. Algorithms and Complexity I, T. Dimitriou
Λ99A. Introduction to Finite Model Theory, S. Weinstein
Λ99B. Automata and Applications, I. Soskov
Λ99Γ. Modal Logic, C. Koutras
Λ99Δ. Descriptive Set Theory, Y. Moschovakis

Spring semester 1999-2000

Λ4. Algorithms and Complexity II, T. Dimitriou
Λ5. Set Theory, A. Tsarpalias
Λ11. Introduction to λ-Calculus, G. Koletsos
Λ18. Mathematical Theory of Programming Languages, S. Cosmadakis
Λ99Ε. Databases, I. Ioannidis
Λ99Ν. Topics in Set Theory, Y. Moschovakis
Λ99Π. Data Networks, E. Kranakis

Fall semester 2000-2001

Λ1. Mathematical Logic, C. Dimitracopoulos
Λ2. Computability, Y. Moschovakis
Λ3. Algorithms and Complexity I, T. Dimitriou
Λ16. Logic Programming, E. Foustoucos
Λ98Β. Introduction to Constructive Mathematics, J. R. Moschovakis
Λ00Α. Metamathematics of Set Theory, Y. Moschovakis

Spring semester 2000-2001

Λ4. Algorithms and Complexity II, T. Dimitriou
Λ5. Set Theory, A. Tsarpalia
Λ99Ε. Databases, I. Ioannidis and I. Karali
Λ00Β. Mathematics and Cryptography, E. Raptis
Λ00Γ. Combinatorial Optimization, V. Zissimopoulos and E. Koutsoupias
Λ00Δ. Approximation Algorithms and Computational Geometry, S. Zachos

Fall semester 2001-2002

Λ1. Mathematical Logic, C. Dimitracopoulos
Λ2. Computability, Y. Moschovakis
Λ3. Algorithms and Complexity I, Th. Andronikos
Λ19. Non-classical Logics, C. Koutras
Λ00Α. Metamathematics of Set Theory, A. Arvanitakis
Λ01Ν. Introduction to Recursion in Higher Types, Y. Moschovakis
Λ01Ξ. Mathematics and Robotics, E. Raptis
Λ01Β. Online Algorithms, E. Koutsoupias
Λ01Ο. Probabilistic Algorithms, E. Koutsoupias

Spring semester 2001-2002

Λ4. Algorithms and Complexity II, Th. Andronikos
Λ5. Set Theory, A. Arvanitakis
Λ11. Introductrion to λ-Calculus, G. Koletsos and G. Stavrinos
Λ15. Model Theory, C. Dimitracopoulos and Ch. Cornaros
Λ99Ε. Databases, I. Karali and M. Nikolaidi
Λ99Π. Data Networks, E. Kranakis
Λ00Β. Mathematics and Cryptography, E. Raptis
Λ00Γ. Combinatorial Optimization, V. Zissimopoulos
Λ01Γ. Parallel Algorithms and Complexity, S. Zachos

Λ01Π. Data Mining Algorithms, F. Afrati

Fall semester 2002-2003

Λ1. Mathematical Logic, C. Dimitracopoulos
Λ2. Computability, Y. Moschovakis
Λ3. Algorithms and Complexity I, E. Koutsoupias
Λ16. Logic Programming, E. Foustoucos
Λ00A. Metamathematics of Set Theory, A. Arvanitakis
Λ02A. Arithmetic Complexity, Y. Moschovakis
Λ02N. Logic in Databases, V. Tannen

Spring semester 2002-2003

Λ4. Algorithms and Complexity II, Th. Andronikos
Λ5. Set Theory, A. Tsarpalias and C. Dimitracopoulos
Λ99E. Databases, M. Nikolaidou
Λ13. Proof Theory, G. Stavrinos
Λ00B. Mathematics and Cryptography, E. Raptis
Λ02B. Metamathematics of Peano Arithmetic, C. Dimitracopoulos and Ch. Cornaros
Λ02Γ. Cryptography and Complexity, S. Zachos
Λ02Δ. Computational Geometry, Y. Emiris
Λ02E. Computational Angebra, Y. Emiris
Λ02Z. Topics in Game Theory and Computation, E. Koutsoupias
Λ02Ξ. Introduction to network security and cryptography, E. Kranakis
Λ02O. Algebraic specifications and their applications in Computer Science, R. Diaconescu and P. Stefaneas
Λ01O. Probabilistic Algorithms, S. Nikoletseas
Λ02Π. Special Topics of Logic in Computer Science, E. Foustoucos

Fall semester 2003-2004

Λ2. Computability, Y. Moschovakis
Λ3. Algorithms and Complexity I, E. Koutsoupias
Λ5. Set Theory, Y. Moschovakis
Λ14. Introduction to λ-Calculus, G. Stavrinos
Λ00Γ. Combinatorial Optimization, V. Zissimopoulos
Λ03A. Computational Algebraic Geometry, E. Raptis
Π03B. Network Algorithms and Complexity, A. Pagourtzis
Λ03N. Models of Peano Arithmetic, C. Dimitracopoulos
Π03Ξ. Approximation Algorithms, F. Afrati and T. Aslanidis

Spring semester 2003-2004

Λ1. Mathematical Logic, C. Dimitracopoulos
Λ4. Algorithms and Complexity II, A. Pagourtzis
Π6. Databases, T. Selis
Λ15. Proof Theory, G. Stavrinos
Π17. Mathematics and Cryptography, E. Raptis

Π01Α. Online Algorithms, E. Koutsoupias
Π03Α. Structural Complexity, S. Zachos
Π03Β. Semantics of Programming Languages, P. Rondogiannis
Π03Γ. Type Systems of Programming Languages, N. Papaspyrou
Π03Δ. Algorithms in Molecular Biology, Y. Emiris
Π01Π. Data Mining Algorithms, F. Afrati

Fall semester 2004-2005

Λ2. Computability, Y. Moschovakis
Λ3. Algorithms and Complexity I, E. Koutsoupias
Μ6. Set Theory, Y. Moschovakis
Π6. Databases, F. Afrati
Μ12. Model Theory, C. Dimitracopoulos
Λ02Α. Arithmetic Complexity, Y. Moschovakis
Λ03Α. Computational Algebraic Geometry, E. Raptis
Π00Γ. Combinatorial Optimization, V. Zissimopoulos
Λ04Α. Proofs and Programs, G. Koletsos and G. Stavrinos
ΠΑ04. Type Systems of Programming Languages, N. Papaspyrou

Spring semester 2004-2005

Λ1. Mathematical Logic, C. Dimitracopoulos
Λ4. Algorithms and Complexity II, A. Potika
Λ14. Introduction to λ-Calculus, G. Koletsos and G. Stavrinos
Π17. Mathematics and Cryptography, E. Raptis
Π99Π. Data Networks, E. Kranakis
Π00Δ. Approximation Algorithms and Computational Complexity, S. Zachos
Π02Ζ. Topics in Game Theory and Computation, E. Koutsoupias
Π03Β. Network Algorithms and Complexity, A. Pagourtzis
Π03Δ. Semantics of Programming Languages, P. Rondogiannis
Π03Ζ. Geometric and Algebraic Algorithms in Molecular Biology, Y. Emiris
Π04Ν. Logic in Artificial Intelligence, P. Peppas

Fall semester 2005-2006

Λ1. Mathematical Logic, C. Dimitracopoulos
Λ2. Computability, Y. Moschovakis
Λ3. Algorithms and Complexity I, E. Koutsoupias
Π6. Databases, F. Afrati and V. Vassalos
Μ11. Recursion Theory, Y. Moschovakis
Λ15. Proof Theory, G. Koletsos and G. Stavrinos
Λ98Γ. Category Theory and Applications, P. Karazeris and N. Rigas
Λ99Α. Finite Model Theory, D. Richerby
Π00Γ. Combinatorial Optimization, V. Zissimopoulos
Π02Δ. Computational Geometry, Y. Emiris
Λ03Α. Computational Algebraic Geometry, E. Raptis
Π03Γ. Type Systems of Programming Languages, N. Papaspyrou
Π05Α. Cryptography and Complexity, S. Zachos

M05N. Constructive Arithmetic and Analysis, J. R. Moschovakis

Spring semester 2005-2006

Λ4. Algorithms and Complexity II, S. Kolliopoulos
M6. Set Theory, C. Dimitracopoulos
Π6. Foundations of Databases (and Knowledge), M. Koubarakis
Λ14. Introduction to λ-Calculus, G. Koletsos and G. Stavrinos
Π17. Mathematics and Cryptography, E. Raptis
Π01Π. Data Mining Algorithms, F. Afrati
Π02Ξ. Network Security and Cryptography, E. Kranakis
Π01B. Parallel Algorithms and Complexity, S. Zachos
Π01O. Probabilistic Algorithms, E. Koutsoupias
Π03A. Network Algorithms and Complexity, A. Pagourtzis
Π03Δ. Semantics of Programming Languages, P. Rondogiannis
Π03Z. Geometric and Algebraic Algorithms in Molecular Biology, Y. Emiris
Π05B. Computation Models, Formal Languages, Automata Theory and Complexity, S. Zachos
Λ05Γ. Parametric Complexity and Algorithms, D. Thilikos
Λ05Δ. Graph Theory, D. Richerby

Fall semester 2006-2007

Λ1. Mathematical Logic, C. Dimitracopoulos
Λ2. Computability, Y. Moschovakis
Λ3. Algorithms and Complexity I, E. Koutsoupias
Λ99A. Finite Model Theory, D. Richerby
Π00Γ. Combinatorial Optimization, V. Zissimopoulos
Λ02A. Arithmetic Complexity, Y. Moschovakis
Π02Δ. Computational Geometry, Y. Emiris
Π02E. Computational Algebra, Y. Emiris and E. Raptis
Π03Γ. Type Systems of Programming Languages, N. Papaspyrou
Π05A. Cryptography and Complexity, S. Zachos and A. Pagourtzis
Λ06A. Graph Theory, D. Thilikos
M06B. Ergidic Ramsey Theory, V. Farmaki
Λ06N. Category Theory and Applications, G. Koletsos and G. Stavrinos

6. Lectures

6.1. **Seminar in Logic and Algorithms.** In the Logic and Algorithms Seminar, about 215 lectures have been given by faculty members of the Departments/Schools running the Program, as well as visitors from Greece and abroad. The Seminar meets 6-7 p.m. every Friday, during the academic year. In what follows, we give complete lists of all lectures that have been given and the corresponding lecturers, for each academic semester.

Spring semester 1996-1997

21/3/97 Y. Moschovakis, The meaning of the Church-Turing Thesis.

28/3/97 C. Dimitracopoulos, The incompleteness of Peano arithmetic and Ramsey's theorem, I.
4/4/97 C. Dimitracopoulos, The incompleteness of Peano arithmetic and Ramsey's theorem, II.
11/4/97 G. Kapoulas, Computable real numbers and functions, I.
18/4/97 G. Kapoulas, Computable real numbers and functions, II.
9/5/97 M. Mytilinaios, Surprises in Arithmetic.
16/5/97 E. Kranakis, Broadcasting in unlabeled networks.
30/5/97 E. Kirousis, A mathematical approach to experimental conclusions concerning logical propositions.
6/6/97 Y. Moschovakis, The notion of set, from Cantor to Hilbert.
20/6/97 E. Zachos, From computability to computational complexity.

Fall semester 1997-1998

24/10/97 Y. Moschovakis, Games in Analysis, Logic and Theoretical Computer Science, I.
31/10/97 Y. Moschovakis, Games in Analysis, Logic and Theoretical Computer Science, II.
7/11/97 S. Cosmadakis, Complexity of logic programs.
14/11/97 A. Tzouvaras, The symmetry axioms of C. Freiling in a general setting and some applications.
21/11/97 H. Kotlarski, An explicit construction of a model of $PA + \neg Con_{PA}$.
28/11/97 K. Skandalis, Computability in real numbers.
5/12/97 Th. Pheidas, The analog of Hilbert's 10th problem for the rational numbers, under the light of new developments in algebraic geometry and number theory.
12/12/97 K. Hatzikiriakou, The research program of "Reverse Mathematics".
16/1/98 C. Dimitracopoulos, Hilbert's 10th problem.
23/1/98 F. Afrati, Query languages for deductive databases.

Spring semester 1997-1998

13/3/98 P. Karazeris, Introduction to Categorical Logic.
20/3/98 I. Karali, Inductive databases with object-oriented extensions.
3/4/98 Y. Moschovakis, Semantics for fair indeterminacy in models of the typed λ-calculus.
10/4/98 K. Drossos, Monoidal Logics.
8/5/98 C. Dimitracopoulos, Subsystems of Peano arithmetic, I.
15/5/98 C. Dimitracopoulos, Subsystems of Peano arithmetic, II.
22/5/98 J. Paris, Semantics for Fuzzy Logic supporting the Truth-Functionality Assumption.
29/5/98 C. Dimitracopoulos, Subsystems of Peano arithmetic, III.
5/6/98 M. Mytilinaios, Game-theoretic semantics.
12/6/98 A. Pagourtzis, Algorithms for graph coloring with applications in optical networks.
19/6/98 M. Fürer, Historical and positional strategies in infinite games.

Fall semester 1998-1999

2/10/98 E. Specker, Epistemic Logic and the Prognostic Paradox.
9/10/98 A. Troelstra, The Intuitionism of Brouwer and Heyting.
16/10/98 K. Georgatos, Non-monotonic logic, belief revision and the logic of scientific discovery.
23/10/98 Ch. Nomikos, Path coloring in graphs.
30/10/98 Y. Moschovakis, The notion of Algorithm.
6/11/98 M. de Rougemont, Interactive proofs on the reals.
13/11/98 M. Vardi, Automated verification=Graphs, automata and logic.
20/11/98 Ph. Kolaitis, On the boundedness problem for fragments of first-order logic.
27/11/98 J. R. Moschovakis, Realizability, models and applications.
15/1/99 C. Dimitracopoulos, The principle of induction for addition.
22/1/99 P. Rondogiannis, Temporal language programming.

Spring semester 1998-1999

5/3/99 C. Dimitracopoulos, Introduction to Aristotle'e logic, I.
12/3/99 P. Stamatopoulos, Constraint satisfaction and applications to AI.
19/3/99 C. Dimitracopoulos, Introduction to Aristotle's logic, II.
26/3/99 J. Lambek, Type Grammars as pregroups.
2/4/99 J. Paris, Common Sense and Uncertain Reasoning.
23/4/99 P. Spirakis, Sufficient conditions for reducing randomness in PCP systems.
7/5/99 I. Manakos, The paradoxes of Russell and the Liar under the light of H. L. Skala's set theory.
14/5/99 P. Karazeris, Topology without points: Logical character and applications.
20/5/99 I. Guessarian, Window-accumulated subsequence matching problem is linear.
21/5/99 J. Hintikka, A Logic for Quantum Theory.
28/5/99 E. Galatoulas, Topos-theoretic models of Quantum Mechanics.
4/6/99 S. Bozapalidis, Formal tree series - Additive program schemes.
4/6/99 E. Kranakis, Dissections: Plane and Efficient.
31/8/99 D. Gounopoulos, Automatic subspace clustering of high dimensional data for data mining applications.

Fall semester 1999-2000

8/10/99 Ph. Kolaitis, The Ordered Conjecture: A status report.
15/10/99 Y. Moschovakis, Three episodes from the history of set theory.
22/10/99 W. Charatonik, Path-based versus set-based analysis of logic programs.
5/11/99 I. Soskov, Degrees of structures.
12/11/99 Y. Emiris, Solving polynomial systems.
19/11/99 C. Dimitracopoulos, Introduction to Stoic Logic - The "indemonstrable moods" of the Stoics.
26/11/99 J. Kennedy, On embedding models of arithmetic into reduced products.

26/11/99 J. Väänänen, Generalized quantifiers and finite model theory.
3/12/99 P. Karazeris, Scott continuous local operators on complete Heyting algebras.
10/12/99 S. Weinstein, A guide to Finite Model Theory.
17/12/99 E. Foustoucos, Persistency numbers of Datalog programs.
20/1/00 J. van Benthem, Modal Foundations for Predicate Logic.

Spring semester 1999-2000

11/2/00 E. Zachos, S-terms revisited.
18/2/00 J. Moschovakis, The Gödel-Gentzen Negative Translation and Classical Function Realizability.
25/2/00 Y. Moschovakis, Meanings, algorithms and games.
3/3/00 P. Peppas, Belief Revision, I.
10/3/00 C. Dimitracopoulos, End extensions of models, I.
17/3/00 P. Peppas, Belief Revision, II.
31/3/00 C. Dimitracopoulos, End extensions of models, II.
7/4/00 S. Weinstein, The Role of Decidability in First Order Separations over Classes of Finite Structures.
14/4/00 T. Dimitriou, Algorithms for random generation and counting.
19/5/00 C. Koutras, Modal Logics of Knowledge and Multiple Intelligent Agents.
26/5/99 E. Kranakis, Strategies for Assigning Hotlink in Web Pages.
2/6/00 S. Baratella, Quantifier elimination for first order theories.
9/6/00 Th. Pheidas, Lang's conjecture in Arithmetic Algebraic Geometry and its solution by model-theoretical means.
16/6/00 A. Dawar, Formulas, Games and Circuits.
6/7/00 Ph. Kolaitis, On the Complexity of Counting Problems in Equational Matching and Unification.
11/7/00 J.-L. Krivine, The Curry-Howard correspondence in set theory.
12/7/00 V. V. Vazirani, The Primal-Dual Schema for Approximation Algorithms Where Does it Stand, and Where Can it Go?
20/7/00 A. Kechris, The complexity of the isometric classification of Polish metric spaces and the structure of their isometry groups.

Fall semester 2000-2001

13/10/00 E. Kranakis, Searching with Uncertainty in Communication Networks.
20/10/00 Y. Moschovakis, The logic of (complete and partial) equations.
3/11/00 Ch. Cornaros, Wilkie's problem.
10/11/00 C. Dimitracopoulos, Hilbert's 10th problem.
1/12/00 P. Karazeris, An application of categorical logic to declarative semantics.
8/12/00 E. Kirousis, Dichotomy theorems on the satisfiability of propositional formulas.
15/12/00 C. Koutras, Theory of definability and completeness in Modal Logic.
12/1/01 Y. Christianidis, Hermeneutical problems in the history of Algebra.

Spring semester 2000-2001

13/2/01 Ph. Kolaitis, Existential second-order logic over graphs: charting the tractability frontier.
2/3/01 P. Spirakis, Competing Intelligent Agents: The case of no communication.
9/3/01 K. Drossos, Imaginary elements: A philosophico-mathematical view.
16/3/01 F. Afrati, Approximation schemes to minimize the average completion time.
23/3/01 E. Koutsoupias, Optimization problems in congestion control.
27/4/01 K. Hatzikiriakou, Lindström's Theorem.
4/5/01 S. Cosmadakis, Approaches to Query Optimization.
23/5/01 E. Kranakis, Electronic payment protocols.
1/6/01 V. Zissimopoulos, On the hardness of some combinatorial optimization problems with generalized local search methods.
8/6/01 Ch. Papadimitriou, Algorithms, Games and the Net.
29/6/01 A. Kiagias, Electronic voting: the secrecy of vote.

Fall semester 2001-2002

5/10/01 Y. Moschovakis, The complexity of Euclid's algorithm.
2/11/01 M. van Lambalgen, Moschovakis's notion of meaning as applied to linguistics.
2/11/01 F. Hamm, Perfect, imperfect nominals and the progressive.
30/11/01 K. Dosen, Categories and their interpretation.
7/12/01 Ph. Kolaitis, Phase Transitions of PP-Complete Satisfiability Problems.
21/12/01 C. Dimitracopoulos, Indicators and the incompleteness of Peano arithmetic.

Spring semester 2001-2002

15/2/02 E. Zachos, Counting functions.
1/3/02 C. Dimitracopoulos, Finite axiomatizability of subsystems of P.
29/3/02 F. Ferreira, Amending Frege's "Grundgesetze der Arithmetic".
5/4/02 P. Spirakis, Game Theory and Complexity.
12/4/02 F. Afrati, Answering Conjunctive Queries with Comparisons Using Views.
26/4/02 E. Kranakis, Node Discovery in Ad Hoc Networks.
17/5/02 A. Tzouvaras, A structural approach of fuzzy sets.
24/5/02 E. Foustoucos, *Datalog* with greatest fixed points can express various temporal logics.
7/6/02 P. Rondogiannis, Minimum model semantics for logic programs with negation.
14/6/02 A. Arvanitakis, Η απόδειξη της Generalized Banach Contraction Conjecture.
21/6/02 Yu. Matiyasevich, Hilbert's Tenth Problem today: Main results and Open Problems.

15/7/02 A. Kechris, The Vaught Conjecture.

Fall semester 2002-2003

11/10/02 R. Kahle, Applicative Theories and their Applications.
18/10/02 V. Tannen, XML Query Reformulation.
1/11/02 Y. Moschovakis, Inductive relations.
8/11/02 S. Kreutzer, Ficed-Point Logics on Finite and Infinite Structures.
15/11/02 C. Dimitracopoulos, The MacDowell-Specker theorem and generalizations.
22/11/02 Chr. Verykios, Morley's theorem and concepts from stability theory.
29/11/02 A. Shlapentokh, Hilbert's Tenth Problem over Number Fields.
6/12/02 V. Kanellopoulos, Ramsey theorems for trees.
13/12/02 Chr. Chartonas, A minimal calculus for situated multi-agent systems.
10/1/03 A. Pagourtzis, Communication algorithms in wireless networks of unknown topology.

Spring semester 2002-2003

14/2/03 Y. Emiris, The theory of algebraic sparse elimination.
21/2/03 C. Dimitracopoulos, The pigeonhole principle and the infinitude of primes.
28/2/03 S. Nikoletseas, Smart Dust Protocols for Local Detection and Propagation.
14/3/03 D. Kavvadias, Generating extreme structures: algorithms and complexity.
21/3/03 R. Diaconescu, From Birkhoff axiomatizability to interpolation: a categorical model-theoretic approach.
28/3/03 G. Kapoulas, Infinitesimals via the cofinite filter.
4/4/03 Th. Andronikos, Automatic system verification and synthesis.
11/4/03 M. Mavronikolas, Game-theoretic techniques in package routing.
18/4/03 E. Koutsoupias, Coordination Mechanisms.
9/5/03 N. Rigas, Intersection types and applications to lambda calculus.
16/5/03 P. d' Aquino, Weak fragments of arithmetic.
23/5/03 E. Kranakis, Compasses, Faces and Butterflies: Route Discovery in Ad-hoc
Networks.
30/5/03 P. Stefaneas, Information technology and ethics.
6/6/03 K. Drossos, Infinitesimals and non-standard mathematics.
20/6/03 D. Thilikos, Retreat is futile when you want to take over the world.
30/6/03 A. Kechris, Fraissé limits, Ramsey theory and topological dynamics of automorphism groups.

Fall semester 2003-2004

3/10/03 Y. Moschovakis, Is Euclid's algorithm optimal?
10/10/03 B. Löwe, Deterministic and nondeterministic supertask computation.
24/10/03 A. Louveau, Dichotomy results for Borel graphs.

31/10/03 D. Thilikos, The theory of minor graphs and its use in the design of subexponential parametric algorithms.
7/11/03 P. Spirakis, Communication problems in ad-hoc mobile nets: Multi-particle interactions and concurrent random walks.
21/11/03 J. R. Moschovakis, Hierarchies in realistic extensions of intuitionistic theories.
28/11/03 S. Ghilezan, Intersection types in classical logic.
5/12/03 F. Afrati, The complexity of conjunctive query containment.
12/12/03 G. Barbalias, Hypersimple semicomputable sets in the weak truth table degrees.
19/12/03 C. Koutras, Multiple-valued Modal Logic: definability, completeness, model theory.
23/1/04 C. Dimitracopoulos, The "indemonstrable moods" of the Stoics.

Spring semester 2003-2004

12/3/04 E. Zachos, Descriptive complexity: complexity classes and operators.
19/3/04 R. Kossak, Automorphisms of models of arithmetic, non-classification and some classification results.
23/4/04 Th. Pheidas, Using Logic to solve problems in Algebra.
30/4/04 Ph. Kolaitis, On preservation under homomorphisms in the finite.
7/5/04 C. Dimitracopoulos, Ramsey's Theorem.
21/5/04 E. Kranakis, Mobile agent rendez-vous problem.
28/5/04 A. Tzouvaras, Why is the operation of powerset so special?
4/6/04 N. Papaspyrou, Programming with proofs: Type systems based on logic ... and other frightening stories ...
11/6/04 A. Potika, Problems of path routing and coloring in totally optical networks with multiple fibers.
18/6/04 N. Lygeros, Algorithms for enumerating posets, prosets and mixed models.
2/7/04 T. Viglas, On complexity class separations and algorithmic simulations.
23/7/04 A. Kechris, Generic symmetries.

Fall semester 2004-2005

1/10/04 F. Hamm, Plan-goal structures and the dynamics of temporal reasoning.
8/10/04 D. Thilikos, Wagner's conjecture and its proof: A short description of the theory of minor graphs, I.
15/10/04 D. Thilikos, Wagner's conjecture and its proof: A short description of the theory of minor graphs, II.
22/10/04 E. Zachos, The complexity of counting functions with easy decision version.
5/11/04 Y. Moschovakis, Inductive relations.
19/11/04 A. Kaporis, The problem of satisfiability of random logical propositions: constructive techniques for solving, techniques of solution existence.

26/11/04 C. Dimitracopoulos, Hilbert's 10th problem, I.
3/12/04 W. Demopoulos, Carnap and the rational reconstruction of the language of Physics.
10/12/04 G. Plotkin, A calculus for chemical systems.
21/1/05 C. Dimitracopoulos, Hilbert's 10th problem, II.

Spring semester 2004-2005

18/3/05 S. Kolliopoulos, Edge pricing of multicommodity networks for selfish users.
1/4/05 Y. Moschovakis, Recursion and complexity.
8/4/05 P. Peppas, Distance semantics for relevance-sensitive belief revision.
15/4/05 E. Kranakis, Asymptotics of random RNA.
22/4/05 L. Kirby, A fine structure for the hereditarily finite sets.
27/5/05 N. Foo, Games, equilibria and logic programs.
3/6/05 C. Tsinakis, A general approach to the study of logical consequence relations.
17/6/05 Y. Stephanou, Fuzziness and super-valuations.

Fall semester 2005-2006

7/10/05 Y. Moschovakis, Kleene's infamous second recursion.
14/10/05 S. Terwijn, Intuitionistic Logic and Medvedev Degrees.
21/10/05 R. Iemhoff, An alternative Skolemization method.
4/11/05 P. Karazeris, Geometrical theories, classifying topoi.
11/11/05 D. Richerby, Is there a logic for polynomial time?
16/12/05 C. Dimitracopoulos, Subsystems of first-order arithmetic.
20/1/06 S. Artemov and E. Nogina, Proofs, Evidence, Knowledge.
27/1/06 E. Zachos, Hierarchies of complexity classes.

Spring semester 2005-2006

24/3/06 Y. Moschovakis, Recursion and complexity.
31/3/06 D. Richerby, Hilbert's ε-operator.
7/4/06 E. Paschos, Robustness under uncertainty.
14/4/06 D. Thilikos, Using submodular functions to generate with parameters: the issues of monotonicity and connectivity.
5/5/06 Ch. Nikolaidis, Combinatorial algorithms for the symmetric group S_n.
12/5/06 E. Kranakis, Local computation and global communication in wireless networks.

Fall semester 2006-2007

6/10/06 K. Yamazaki, Relationships between the class of unit grid intersection graphs and other classes of bipartite graphs.
13/10/06 H. Schwichtenberg, Logic for computable functionals and their approximations.
20/10/06 Y. Moschovakis, "... $(a + bn)/n = x$, hence God exists" – with Logic only!

3/11/06 D. Richerby, How to kill a Minotaur: An introduction to graph searching.
10/11/06 Ch. Kapoutsis, Small sweeping 2NFAs are not closed under complement.
15/11/06 V. Selivanov, Fine hierarchy of regular aperiodic ω-languages.
24/11/06 R. Kaye, Nonstandard symmetric groups.
1/12/06 D. Gounopoulos, Top-K Query Processing.
22/12/06 Th. Pheidas, Decidability in algebra - for beginners.
19/1/07 G. Longo, Logic, determination and predictability.

6.2. **Lecture Series.** During visits to the Program, many distinguished researchers from abroad have given series of talks, of duration 4 to 6 hours each, concerning advanced topics. The list below contains details for all series that have been given, for each academic year.

1998-1999 A. Troelstra, University of Amsterdam,
Introduction to basic proof theory.
J. Paris, University of Manchester,
Non-monotonic logic.
1999-2000 W. Charatonik, Max Planck Institut, Saarbrücken,
Type systems and set constraints in logic programming.
J. Sifakis, VERIMAG, France,
Formal methods in Computer Science.
J. van Benthem, University of Amsterdam,
Logic and games.
J. Paris, University of Manchester,
Predicate uncertain reasoning.
Th. Pheidas, University of Crete,
Quantifier elimination and applications.
A. Kechris, California Institute of Technology,
A theory of complexity of classification problems in mathematics.
2000-2001 K. Dosen, Serbian Academy of Sciences, Belgrade,
Categories and their interpretation.
2001-2002 Ph. Kolaitis, University of California, Santa Cruz,
Combinatorial games in Finite Model Theory.
J. Krajíček, Czech Academy of Sciences, Prague,
Propositional proof complexity and bounded arithmetic.
2002-2003 L. van den Dries, University of Illinois,
Lower bounds in arithmetic complexity.
2003-2004 A. Louveau, Université Paris VI,
Effective methods in Descriptive Set Theory.
2004-2005 G. Plotkin, University of Edinburgh,
The algebra of computational effects.
2005-2006 R. Iemhoff, University of Vienna,
Intuitionistic Logic and Heyting Algebras.

2006-2007 H. Schwichtenberg, University of Munich,
Proof interpretations.
R. Kaye, University of Birmingham,
Recursive saturation, resplendency and beyond.

7. M.Sc. Dissertations

The M.Sc. dissertations that have been completed concern a large variety of topics in the broad research area of Logic and its applications to Computer Science. Below we give a list of these, mentioning (in parentheses) the time of completion and the names of the faculty members/external collaborators that supervised them.

(1) P. Lekeas: A static algorithm for frequency assignment on rings of odd length (February 1999, F. Afrati).
(2) O. Kebapi: Locally finitely presentable categories as categories of models of L_ω (June 2000, P. Karazeris and C. Dimitracopoulos).
(3) A. Dimakakos: Morley's categoricity theorem (June 2000, C. Dimitracopoulos).
(4) Ch. Toga: Matching problems - Algorithms and complexity (July 2000, S. Zachos).
(5) E. Kalyvianaki: Formal verification and scheduling for real-time systems (July 2000, G. Koletsos).
(6) Ch. Kapoutsis: Block cryptosystems: from DES to AES (July 2000, S. Zachos).
(7) G. Stathopoulou: Optimization problems in circular arc graphs (November 2000, S. Zachos).
(8) A. Matzavinos: Ramsey theory and applications (July 2001, Y. Moschovakis).
(9) A. Stavrou: Routing in satellite networks (July 2001, E. Kranakis and C. Dimitracopoulos).
(10) D. Tsiounis: Neighbor discovery in satellite networks (July 2001, E. Kranakis and Y. Moschovakis).
(11) D. Ketikidis: DNA computers (October 2001, A. Dimitriou and E. Koutsoupias).
(12) Ch. Verykios: Ultrafilters, dynamical systems and ergodic theory in Ramsey theory (October 2001, A. Tsarpalias).
(13) G. Vafeiadou: Intuitionistic analysis - Basic principles and realizability interpretations (December 2001, J. Rand Moschovakis and G. Koletsos).
(14) A. Arvanitakis: The problem of isometry in Polish spaces (December 2001, Y. Moschovakis).
(15) P. Sypsa: Diophantine equations and Hilbert's 10th problem (March 2002, C. Dimitracopoulos).
(16) P. Eleftheriou: Model-theoretic constructions in many-valued modal logic (July 2002, C. Koutras and C. Dimitracopoulos).

(17) K. Kypriotakis: Logical games and Blackwell games (July 2002, A. Arvanitakis and Y. Moschovakis).
(18) M. Liazi: On the k-densest subgraph problem (July 2002, V. Zissimopoulos).
(19) D. Stathopoulos: On the number of points and the existence of a minimum Steiner triangulation (July 2002, Ch. Nomikos and F. Afrati).
(20) N. Salamanos: Algorithmic mechanism design (July 2002, E. Koutsoupias).
(21) D. Spontas: An application for the presentation of results during modern Olympic Games (July 2002, I. Ioannidis).
(22) I. Souldatos: Propositional proof complexity (July 2002, G. Koletsos).
(23) O. Raptis: Extensions of Hilbert's 10th problem (September 2002, C. Dimitracopoulos).
(24) T. Aslanidis: Complexity theory and approximation algorithms (September 2002, E. Babis and F. Afrati).
(25) E. Kandilakis: Digital signatures and cryptography (September 2002, E. Raptis).
(26) V. Kaliakouda: Hybrid logics (July 2003, C. Koutras and C. Dimitracopoulos).
(27) Ch. Tzetzias: Braid groups and cryptography (November 2003, E. Raptis).
(28) G. Tzachristas: The MacDowell-Specker theorem (December 2003, C. Dimitracopoulos).
(29) S. Kalliakouda: Cost models in communication networks (June 2004, L. Merakos).
(30) E. Peroutseas: Congestion games and price of anarchy (June 2004, E. Koutsoupias).
(31) C. Georgiou: Fairness in online problems (August 2004, E. Koutsoupias).
(32) N. Maragos: Web-based systems and operation dictionary development (September 2004, M. Nikolaidou and I. Karali).
(33) N. Kiourtis: Wormhole attacks in wireless networks (October 2004, E. Kranakis and Y. Moschovakis).
(34) L. Kalantzi: MSO-evaluation and automata (November 2004, E. Fousttoucou and S. Cosmadakis).
(35) E. Gavatha: Edge coloring in graphs (December 2004, Th. Andronikos and S. Zachos).
(36) E. Kotelida: The web as a graph (December 2004, Th. Andronikos and S. Zachos).
(37) Ch. Tsironis: Arthur-Merlin games and interactive proof systems (December 2004, Th. Andronikos and S. Zachos).
(38) G. Kokoretsis: Automatic timetable construction for secondary schools using constraint logic programming (December 2004, P. Stamatopoulos).

(39) Th. Valaskopoulou: An application for database administration tutoring (January 2005, M. Nikolaidou and I. Karali).
(40) G. Georgiou: Algorithms for routing and wavelength assignment in all-optical networks - Implementations and experimental comparison (April 2005, A. Pagourtzis and S. Zachos).
(41) A. Vidali: Continued fractions and the subtractive Euclidean algorithm (September 2005, Y. Moschovakis).
(42) K. Garoufi: Formal languages and models of computation with limited resources (September 2005, C. Koutras and C. Dimitracopoulos).
(43) G. Tsotakos: A linear analysis of classical proofs (October 2005, G. Stavrinos and G. Koletsos).
(44) M. Marinou: Edge coloring in bipartite multigraphs (December 2005, A. Pagourtzis and S. Zachos).
(45) X. Rafios: Quantum physics and computers (April 2006, A. Pagourtzis and S. Zachos).
(46) G. Piliouras: Information networks and game theory (June 2006, S. Zachos).
(47) Ch. Konaxis: Triangulations and resultant (July 2006, Y. Emiris).
(48) N. Vaporis: The admissible rules of intermediate logics (September 2006, J. Rand Moschovakis and G. Koletsos).
(49) A. Koutsioumbas: The problem of fairness in cost allocation (September 2006, E. Koutsoupias).
(50) Ch. Anagnostopoulos: Bertrand paradoxes and Kolmogorov's foundations of the theory of probability (October 2006, Y. Moschovakis).
(51) C. Manouvelos: Algebraic modal logic and applications (November 2006, C. Dimitracopoulos).
(52) V. Paschalis: Recursive algorithms and implementations (December 2006, Y. Moschovakis).
(53) G. Zikos: An introduction to dynamic logic (December 2006, C. Koutras and C. Dimitracopoulos).
(54) V. Karadimas: Efficient algorithms for cardinal direction constraints (February 2007, E. Koubarakis).
(55) D. Diochnos: Real solving of algebraic systems of small dimension (March 2007, Y. Emiris).
(56) P. Rouvelas: Anti-foundation (March 2007, A. Tzouvaras and C. Dimitracopoulos).

8. Expediency for extension

The Program is the unique of its kind in Greece, i.e., the unique Program of Graduate Studies whose subject of teaching and research is grounded on Logic, Mathematics and Informatics, but also which provides mathematical foundations and applications to all three. The uniqueness of the Program in Greece is indicated by the fact that its students and graduates come from

ten (10) Higher Education institutions in Greece, as can be seen in the tables below.

Origin of Students for M.Sc.

Institution	Students
N.K.U.A.	57
Univ. Patras	17
Univ. Crete	14
Univ. Thessal.	10
N.T.U.A.	7
Univ. Ioannina	4
Univ. Piraeus	3
A.U.E.B.	3
Univ. Abroad	3
Cadet Academy	2
Univ. Aegean	1
Total	**121**

Origin of Graduates with M.Sc.

Institution	Graduates
N.K.U.A.	28
Univ. Patras	9
Univ. Crete	5
Univ. Thessal.	5
A.U.E.B.	2
Cadet Academy	2
Univ. Piraeus	2
N.T.U.A.	1
Univ. Abroad	1
Univ. Ioannina	1
Univ. Aegean	–
Total	**56**

During the last five years, the number of faculty members appointed in the Departments/Schools running the Program and specializing in areas belonging to the Program's subject has increased significantly. This fact shows the vigorous and contemporary character of the Program's subject of study and, consequently, that there is a lot of room for further educational and research work.

There have been serious expressions of interest for closer co-operation with similar Programs abroad, especially in the E.U., the medium-term aim being the organization of a joint Program, especially in the framework of the European Action ERASMUS-MUNDUS. In particular, such interest has been expressed by the Directors of similar Programs at the University of Manchester (U.K.), the University of Munich (Germany) and the University of Sofia (Bulgaria).

In view of all the above, we believe that the Program should approved for a further period of ten academic years, that is, until the academic year 2017-2018.