



EURO PhD Summer School on MCDA/M 2018

23 July – 3 August 2018

Chania, Greece

FINAL REPORT

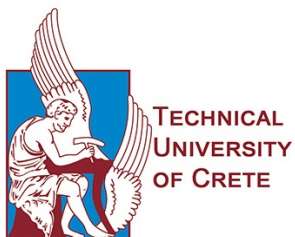


TABLE OF CONTENTS

1. General information	2
1.1 Aims and scope	2
1.2 Dates and venue	2
1.3 Committees	2
1.4 Terms and conditions	3
2. Academic program	3
2.1 Methodology	3
2.2 Lecturers	4
2.3 Schedule	4
2.4 Case study	5
3. Participants	5
3.1 Application process	5
3.2 Students	6
4. Social program	8
5. Some photos	8
6. Financial report	12

1. GENERAL INFORMATION

1.1 Aims and scope

Multiple criteria decision aiding/making (MCDA/M) has evolved as a major area in operations research and management science (OR/MS), which is devoted on the development and implementation of systematic approaches to decision problems that require the consideration of multiple criteria, objectives, goals, and points of view.

The advances in the theory and practice of MCDA/M have been rapid over the years, covering a wide range of issues, including cognitive and problem structuring issues, modeling aspects, computational procedures, software developments, as well as various innovative applications in established and emerging fields in management and engineering.

The 2018 EURO PhD Summer School on MCDA/M (EPS-MCDA/M) was a joint event of the Association of European Operational Research Societies (EURO), the EURO Working Group on Multicriteria Decision Aiding (EWG-MCDA), and the International Society on MCDM.

The EPS-MCDA/M continued the tradition of the previous 12 summer schools on MCDA/M organized by the EWG-MCDA and the International MCDM Society. The first event was organized in 1983, at Catania-Italy by Benedetto Matarazzo and the latest edition was organized in 2016 at Recife-Brazil, by Danielle Costa Morais and Luciana Hazin Alencar.

The aim of the 2018 Summer School was to provide participants with a unique opportunity to get a comprehensive and in-depth view of the state-of-the-art in MCDA/M approaches and methodologies, their applications in various areas, the relevant software decision support tools, and the interconnections of MCDA/M with other closely related theoretical and applied disciplines from OR/MS, computer science, engineering, and social sciences. Thus, the Summer School provided a detailed coverage of all established and emerging areas in MCDA/M and further emphasized the interdisciplinary character of the field, which is fundamental for addressing the challenges that complex decision problems pose, in an effective manner.

Moreover, the Summer School provided a forum through which PhD students exchanged knowledge, ideas and experiences, discussed open problems, obtained feedback from leading scholars in MCDA/M, and built fruitful collaborations.

1.2 Dates and venue

The MCDA/M Summer School was organized by the Technical University of Crete in cooperation with the Mediterranean Agronomic Institute of Chania (MAICh). The School was held at the Conference Center of MAICh, in Chania-Greece, between 23 July and 3 August 2018.

The accommodation of the students and the instructors was arranged at the campus of MAICh.

1.3 Committees

The Summer School was co-chaired by Prof. Constantin Zopounidis and Prof. Michalis Doumpos (Technical University of Crete, Greece). The other members of the Organizing Committee were:

- Emilios Galariotis, Audencia Business School, France
- Evangelos Grigoroudis, Technical University of Crete, Greece

- Nikolaos Matsatsinis, Technical University of Crete, Greece

The Scientific Committee consisted of member of the Executive Committee of the International Society on MCDM, the Board of Directors of the EURO Working Group Multicriteria Decision Aiding, as well as organizers of past Summer Schools on MCDA/M:

- Matthias Ehrgott, Lancaster University, UK
- Jose Figueira, Technical University of Lisbon, Portugal
- Salvatore Greco, University of Catania, Italy & University of Portsmouth, UK
- Murat Köksalan, Middle East Technical University, Turkey
- Banu Lokman, Middle East Technical University, Turkey
- Roman Słowiński, Poznan University of Technology, Poland
- Danielle Costa Morais, Universidade Federal de Pernambuco, Brazil

1.4 Terms and conditions

51 PhD students were admitted to take part in the school. A registration fee of €600 was charged for registrations up to 15 March 2018, whereas the late fee was set to €750. The fees covered all local expenses of the students (accommodation, breakfasts, lunches, dinners) as well as the social activities. Travel costs to and from the school had to be covered by the participants, either themselves or through external funding.

The accommodation was in double rooms, but option for single rooms was offered at an extra cost. Additionally, students were provided the option to register without accommodation (at a reduced registration fee of €350 for early registration).

The students were awarded 5 ECTS credits (60 hours: 42 hours lectures, case project 18 hours).

2. ACADEMIC PROGRAM

2.1 Methodology

The schedule of the school consisted of a combination of theoretical classes and case work. The theoretical lectures covered all the main theoretical advances in MCDA/M and their applications. Overall, the program included 26 theoretical lectures for a total of 39 hours (1.5 hours per lecture).

In addition to the theoretical classes, the program also included a lecture by the President of the International MCDM Society, Prof. Murat Köksalan, that introduced the students to the MCDA/M community and its activities, as well as lecture that provided the students with valuable information about the preparation of research publications. The lecture was given by the coordinating Editor-in-Chief of EJOR, Prof. Roman Słowiński.

Most of the afternoon sessions focused on case work. A case study was prepared involving the multicriteria evaluation and rating of the sustainability of cities. The case project was introduced to the students in the first day of the school. Students worked (in groups) on the assigned problem throughout the school and delivered a written essay at the end, together with a presentation on the last day. During the case work sessions of the program, the students cooperated with the instructors who supervised them in their work and provided guidelines on how to tackle the case problem and apply different methodologies.

2.2 Lecturers

The lectures were delivered by well-known scholars in the field:

- Adiel Teixeira de Almeida (Universidade Federal de Pernambuco, Brazil)
- Michalis Doumpos (Technical University of Crete, Greece)
- Matthias Ehrgott (Lancaster University, UK)
- Jose Figueira (Technical University of Lisbon, Portugal)
- Salvatore Greco (University of Catania, Italy & University of Portsmouth, UK)
- Evangelos Grigoroudis (Technical University of Crete, Greece)
- Miłosz Kadziński (Poznan University of Technology, Poland)
- Murat Köksalan (Middle East Technical University, Turkey)
- Kaisa Miettinen (University of Jyväskylä, Finland)
- Yannis Siskos (University of Piraeus, Greece)
- Eleftherios Siskos (National Technical University of Athens, Greece)
- Roman Słowiński, Poznan University of Technology, Poland
- Alexis Tsoukias (Université Paris Dauphine, France)
- Jyrki Wallenius (Aalto University, Finland)

2.3 Schedule

The complete academic program of the Summer School is shown below.

	9:30-11:00	Break	11:30-13:00	Lunch	14:00-15:30	Break	16:00-17:30	17:30-18:30
23-Jul	Opening & Intro to MCDA (R. Słowiński)		Decision Modeling I (A. Tsoukias)		Decision Modeling II (A. Tsoukias)		Case Introduction (E. Grigoroudis, M. Doumpos)	
24-Jul	MAVT/MAUT (A. Tsoukias)		Interactive Methods I (M. Köksalan)		Interactive Methods II (M. Köksalan)		MCDM/A Community (M. Köksalan)	
25-Jul	Outranking I (J.R. Figueira)		Outranking II (J.R. Figueira)		Outranking III (J.R. Figueira)		Case work	
26-Jul	Rule-based Approach I (R. Słowiński)		Rule-based Approach II (R. Słowiński)		How to get published (R. Słowiński)		Case work	
27-Jul	UTA Methods I (Y. Siskos)		UTA Methods II (Y. Siskos)		Group Decision Making (A.T. de Almeida)		Case work	
30-Jul	Decision Deck (M. Kadziński)		Decision Deck (M. Kadziński)		Robustness Analysis I (E. Siskos)		Robustness Analysis II (E. Siskos)	
31-Jul	Robust Ordinal Regression I (S. Greco)		Robust Ordinal Regression II (S. Greco)		Customer Satisfaction (E. Grigoroudis)		Case work	
1-Aug	MOCO I (M. Ehrgott)		MOCO II (M. Ehrgott)		Nonlinear MOO (K. Miettinen)		Excursion	
2-Aug	Applications - Finance (M. Doumpos)		Behavioral Aspects (J. Wallenius)		Case work		Case work	
3-Aug	Case work		Case work		Case presentations		Case presentations	Closing

2.4 Case study

Except for the theoretical lectures, during the Summer School the students were asked to work on a case study to apply the MCDA/M theory and methodologies. The case study involved the modeling and analysis of an evaluation problem related to urban sustainability assessment. The case study was presented on the first day of the Summer School, by Prof. Evangelos Grigoroudis and Prof. Michalis Doumpos., who acted as tutors for the students' work on the case study.

Students were organized into 7 groups. The groups were formed considering the background and research interests of the students, with emphasis given to form diversified groups and promote the exchange of different ideas and knowledge among students.

Each group was asked to apply a different MCDA/M methodology. Throughout the two weeks of the Summer School, the program included case work sessions, during which the student groups worked independently. The tutors and the instructors were also present and provided constructive feedback to the students and responded to questions regarding the handling of the case project and the application of MCDA/M methodologies.

On the last day of the Summer School each student group provided an open presentation of their work. The presentations and the results of the groups were evaluated by the Organizing Committee, who also provided feedback and suggestions during the presentation session. Three student groups were award an acknowledgement of excellence for the quality of their work.

3. PARTICIPANTS

3.1 Application process

In accordance with previous summer schools on MCDA/M organized by the EURO Working Group on Multicriteria Decision Aiding and the International Society on MCDM, a target of approximately 50 participants was set. Ultimately, 51 students from 18 countries have chosen by the Organizing Committee out of 62 candidates who submitted their application by the given deadline. Approximately 15 more participants showed late interest in attending the EPS-MCDA/M, but these cases were not considered, because all positions have already been filled.

Only applications by PhD students were considered, with priority given to applicants from EURO member society countries. In the final selection, 46 out of the 51 candidates were from EURO member society countries. The remaining participants were from Brazil, Canada, and Mexico.

Interested participants had to submit their application by email by January 31st, 2018 and were notified for the results of the selection process by February 15th, 2018. In order to apply, the participants had to submit the following material:

- a detailed CV,
- an abstract describing their PhD,
- a letter from their supervisor specifying the motivations to attend the summer school,
- an application form including information regarding the title of the PhD, the supervisor, research interests, and a letter describing the participants' motivation to attend the summer school.

In the first round of the selection process 50 applications were accepted and a waiting list was prepared. The waiting list was used to fill open positions due to cancellations from participants.

The table below provides details about the applications by country, including the accepted and rejected applications, as well as the cancellations.

Country	Accepted	Cancelled	Rejected
Australia	0	0	1
Austria	1	0	0
Belgium	4	0	1
Brazil	3	1	0
Canada	1	0	0
Denmark	0	1	0
Finland	2	0	0
France	3	0	0
Germany	3	0	0
Greece	5	0	0
Iran	0	0	1
Italy	10	1	0
Mexico	1	0	0
Netherlands	2	0	0
Nigeria	0	0	1
Norway	2	0	0
Poland	1	0	0
Portugal	3	0	0
South Africa	0	1	0
Spain	1	1	0
Sweden	1	0	0
Turkey	2	1	1
United Kingdom	6	0	0
Total	51	6	5

3.2 Students

51 students (males: 28, females: 23) attended the summer school, as shown in the detailed table below.

Name	Institution	Country
Adiyeye, Esra	Boğaziçi University	Turkey
Aktas, Dilay	Middle East Technical University	Turkey
Anastasiou, Zoe	Loughborough University	UK
Andreolli, Francesca	Universita Degli Studi di Padova	Italy
Arcidiacono, Sally Giuseppe	University of Catania	Italy
Asta, Veronica	University of Genoa	Italy
Crivellari, Anna	University of Bologna	Italy
De Sousa Pereira, Leydiana	Universidade Federal de Pernambuco	Brazil

Name	Institution	Country
Dejaegere, Gilles	Université Libre de Bruxelles	Belgium
Dell' Anna, Federico	Politecnico di Torino	Italy
Dias, Luis	Universidade do Porto	Portugal
Dikopoulou, Zoumpoulia	Hasselt University	Belgium
Enderle, Christian	University of Portsmouth	UK
Esguerra, John Laurence	Linköping University	Sweden
Ferreira de Lima Silva, Diogo	Universidade Federal de Pernambuco	Brazil
Gansen, Fabia	University of Bremen	Germany
Gok, Yagmur Simge	University of Edinburgh	UK
Guerreiro, Andreia	University of Coimbra	Portugal
Haddad, Malik	University of Portsmouth	UK
Hartmann, Julia	Delft University of Technology	Netherlands
Hubinont, Jean Philippe	Université Libre de Bruxelles	Belgium
Johansen, Børge Heggen	Norwegian University of Science & Technology	Norway
Kania, Adhe	University of Jyväskylä	Finland
Khannoussi, Arwa	IMT Atlantique	France
Labijak, Anna	Poznan University of Technology	Poland
Liang, Fuqi	Delft University of Technology	Netherlands
Maltoudoglou, Lysimachos	Democritus University of Thrace	Greece
Marleau Donais, Francis	Université Laval	Canada
Mazumdar, Atanu	University of Jyväskylä	Finland
Mazzarella, Chiara	University of Naples Federico II	Italy
Melchiori, Anna	National Research Council of Italy	Italy
Miteloudi, Konstantina	Technical University of Crete	Greece
Pereira, Miguel	Universidade de Lisboa	Portugal
Pliousis, Athanasios	Technical University of Crete	Greece
Pohl, Erik	Georg-August-University Göttingen	Germany
Porro, Olga	Universitat Politècnica de Catalunya	Spain
Raboun, Oussama	Université Paris-Dauphine	France
Rafiaani, Parisa	University of Liège	Belgium
Regalbutto, Stefania	University of Naples Federico II	Italy
Rezaeinia, Nahid	Norwegian School of Economics	Norway
Sakellaris, Alkaios	Technical University of Crete	Greece
Scherz, Marco	Graz University of Technology	Austria
Schettini, Tommaso	Politecnico di Milano	Italy
Silva, Anderson	Federal University of Pernambuco	Brazil
Sitorus, Fernando	Imperial College London	UK
Solares, Efrain	Autonomous University of Sinaloa	Mexico
Thies, Christian	Technische Universität Braunschweig	Germany
Tselika, Kyriaki	University of Perugia	Italy
Vafadarnikjoo, Amin	University of East Anglia	UK
Valko, Arthur	IMT Atlantique	France
Xenos, Thomas	Technical University of Crete	Greece

4. SOCIAL PROGRAM

Besides the academic program, a social program was included to strengthen ties between the participants to establish a future network. The events organized during the Summer School included a social dinner and an excursion.

The social dinner was held on the evening of Saturday 28th at the Mediterranean Agronomic Institute of Chania, whereas the excursion was organized on the afternoon of August 1st. The excursion included a visit at Venizelos tombs and the traditional village of Stavros.

5. SOME PHOTOS

Students and instructors



Opening session



Lecture by Roman Słowiński



Lecture by Jyrki Wallenius



Lecture by Murat Köksalan



Lecture by Yannis Siskos



Lectures



Summer school dinner



Group photo during the excursion



Case project presentations



Closing session



6. FINANCIAL REPORT

We would like to express our gratitude to EURO for its valuable financial support as well as to the International MCDM Society who funded the participation of four students from developing countries who asked for financial support. The financial details (income and expenses) are presented in the table below.

<i>Income</i>		<i>Expenses</i>	
Registration fees	€28 500	Accommodation	
EURO support	€15 000	Participants	€15 025
MCDM Society support	€2 400	Lecturers	€3 312
		Lecturers' travel expenses	€5 784
		Meals	
		Coffee breaks	€3 901
		Lunches	€7 085
		Dinners	€4 542
		Social activities	
		Banquet	€1 625
		Bus for excursion	€248
		School material & administration	€1 978
		Financial support to students from developing countries	€2 400
Total	€45 900	Total	€45 900