



(A) GENERAL DATA

Title	Master's Programme in Meteorology
Degree	Meteorologist
Type	Degree program
Level	Master level
Accreditation number	FF/1442-2/2015.
Faculty	Faculty of Science
Institute	Institute of Geography and Earth Sciences
Department(s)	Department of Meteorology
Language	English
Duration	4 semester
ECTS credits	120
Place	Lágymányosi Campus
Minimum number of new students¹	3
Maximum number of new students	10

¹ If the number of admitted students does not reach threshold the program may be cancelled.



(B) PROGRAM CONTENT

Short description:

The meteorology master program is intended to be a training of meteorologists who will have appropriate atmospheric oriented scientific viewpoint and high level of theoretical and practical knowledge by the end of the programme. They will have the skill set to be able to apply the practice, measurement and observation oriented analysis methods, as well as the knowledge for weather forecasting and climate modelling. They will also obtain scientifically based meteorological and environmental viewpoint. Depending on their ambitions they will be able to continue their studies in a PhD programme. The courses are divided into two parts. Students have compulsory courses covering general meteorology fields required for everybody (e.g., advanced mathematics, fluid dynamics, dynamical meteorology, informatics, climatology, synoptical meteorology, environmental protection and numerical modelling). By the end of the first semester, the students have to choose a specialization: weather forecaster or climate researcher. The specialization will cover 30 credits of compulsory classes in the next three semesters. The courses for the specializations cover the full spectrum of the selected field. Students with missing background in a particular field of meteorology are required to fulfil prescribed BSc classes up to 20 additional credits. The master thesis work is taken into account as 20 credits.

Strength of program:

The meteorology master studies offer high level of theoretical meteorology courses as well as diverse courses on applications. Students are encouraged to participate in the projects of the professors, where they can learn the newest methods of a certain research field; acquire experience in working in team and have a glimpse on project related administration. Students who are willing to spend extra work on a subject lead by their professors can participate in a national scientific competition among students from all universities. This competition have more than 70 year of history and acknowledged advantage regarding PhD studies in Hungary and plays a vital part in the higher education system in the country. In addition to the faculty members, lead researchers of the Hungarian Meteorological Service, the Meteorology Division of the Hungarian Military, and the Meteorological Service of the Liszt Ferenc International Airport also offer a limited number of thesis supervisions. This helps the students to find the most appealing topic for their thesis lead by the most appropriate expert.



(C) STRUCTURE

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code	course	semester								accountability*		credits
		1st		2nd		3rd		4th		exam	p.e.	
		l.	p.	l.	p.	l.	p.	l.	p.			
I. Mathematics, physics, informatics module (István Matyasovszky)												
I.1	Analysis	2	1							5	5	3
I.2	Informatics in meteorology	0	2							-	5	2
I.3	Fluid dynamics	3	0							5		3
I.4	Thermodynamics			2	1					5	5	3
I.5	Partial differential equations			2	1					5	5	3
	<i>Summary:</i>	5	3	4	2	0	0	0	0			14
II. Dynamic and synoptic meteorology module (Tamás Weidinger)												
II.1	Dynamic meteorology 3	2	1							5	5	3
II.2	Synoptic meteorology 3	2	2							5	5	4
II.3	Dynamic meteorology 4			2	1					5	5	3
II.4	Dynamic modelling 1			3	0					5	-	3
II.5	Synoptic meteorology 4			2	1					5	5	3
II.6	Mesosynoptics					2	1			5	5	3
		4	3	7	2	2	1	0	0			19
III. Atmospheric Physics and climatology module (Bartholy Judit)												
III.1	Atmospheric physics 3	3	0							C	-	3
III.2	Climatology 2	2	1							5	5	3
III.3	Analysis of climate data 1	0	2							-	5	2
III.4	Surface-atmosphere interactions			4	0					C	-	4
III.5	Climate models					2	0			C	-	2
III.6	Physical oceanography					1	0			5	-	1
III.7	Atmospheric environment protection							2	1	5	5	3



<i>Summary:</i>		5	3	4	0	3	0	2	1		18	
IV. Meteorological methods (Mészáros Róbert - coordinator)												
IV.1	Meteorological instruments and observations	1	2							C	5	3
IV.2	Mid-semester practice	0	1							-	3	1
IV.3	Summer practice			0	1					-	3	1
IV.4	Satellite meteorology and remote sensing			2	1					C	5	3
IV.5	Time series analysis					2	1			5	5	3
<i>Summary:</i>		1	3	2	2	2	1	0	0			11
V. Optional subjects (Ferenc Ács) Any physics, mathematics, chemistry, v. meteorology course (it is recommended)												
V.1	Meteorology in english	2	0							C	-	2
V.2	Micrometeorology			2	0					C	-	2
V.3	Ecological climatology							2	0	C	-	2
V.4	Trace gas flow modelling							2	0	C	-	2
V.5.	Numerical modelling 2							0	2	5	-	2
V. 6.	Modern meteorological data formats					0	2			C		2
V.7.	Programming problems in meteorology			0	2					5	-	2
V.8.	Boundary Layer Meteorology			2	0					C	-	2
<i>Summary (should be added to the end of the semester 10):</i>										8		
code	course	semester								accountability*		credits
		7.		8.		9.		10.				
		l.	p.	l.	p.	l.	p.	l.	p.	exam	p.g.	
VI-A Weather forecasting specialisation (Tasnádi Péter)												
VI-A.1	Informatics in weather forecast			1	2					5	5	3
VI-A.2	Weather forecast practice 1			0	3					-	5	3
VI-A.3	Atmospheric energetics			2	0					5	-	2
VI-A.4	Synoptic meteorology 5					2	4			5	5	6
VI-A.5	Dynamic modelling 2					2	1			5	-	3
VI-A.6	Weather forecast practice 2					0	3			-	3	3



VI-A.7	Random field analysis							2	1	5	5	3
VI-A.8	Numerical prediction					3	0			5	-	3
VI-A.9	Aviation meteorology							2	0	C	-	2
VI-A.10	Media meteorology							2	0	C	-	2
<i>Summary:</i>		0	0	3	5	7	8	6	1			30
VI-B Climate research specialisation (Bartholy Judit)												
VI-B.1	Analysis of climate data 2			1	3					5	5	4
VI-B.2	Global and regional climate change			2	0					5	-	2
VI-B.3	Climate modelling					2	1			C	5	3
VI-B.4	Ocean and cryosphere			2	0					C	-	2
VI-B.5	Hydrology					2	1			5	-	3
VI-B.6	Chemical processes in the atmosphere					2	1			5	5	3
VI-B.7	Agroclimatology					1	1			C	-	2
VI-B.8	Renewable energy sources							2	1	C	-	3
VI-B.9	Biogeochemical processes							2	0	C	-	2
VI-B.10	Statistical climatology							2	0	C	-	2
VI-B.11	Urban climate							2	2	5	5	4
<i>Summary:</i>		0	0	5	3	7	4	8	3			30
Thesis												
VII.1	Thesis related professional lab 1					0	4			-	5	4
VII.2	Thesis related professional lab 2							0	16	-	5	16
<i>Summary:</i>		0	0	0	0	0	4	0	16			20
Summaries												
lectures + practical exercises (Weather forecasting specialisation)		17	12	22		11	16	14	10	18		120
lectures + practical exercises (Climate research specialisation)		17	12	24		9	16	10	12	20		120
All semester load (Weather forecasting specialisation)		29		33			30			28		
All semester load (Climate research specialisation)		29		33			26			32		



(D) CAREER

Career opportunities:

The Hungarian Meteorological Service, the Hungarian Military and the private meteorological sector are major employers of our graduates. Furthermore, a large number of graduates continue their research as PhD students in various universities in Europe.

The degree enables the students

- To understand and forecast weather events
- To be able to use, adapt, and modify climate and weather models
- To assess model results and measurements of related fields to meteorology

Job examples

Weather forecaster at national meteorological services, at military and commercial airports, and in public sector. Researcher at national meteorological services and research institutes. PhD studies, university professorial jobs. Environmental analysis in public sector.



(E) ADMISSIONS FOR THE ACADEMIC YEAR 2017/2018

TUITION AND OTHER FEES

	EU/EEA students	non-EU/EEA students
Tuition fee/semester	4190 (EUR)*	4190 (EUR)*
Application fee	160 (EUR)	160 (EUR)
Registration fee	60 (EUR)	60 (EUR)

* It is possible to apply for scholarship to reduce tuition fee.

Offered for the academic year 2017/2018?	YES
Deadline for applications – September intake	15 February 2017
Is there a February intake?	NO

Admission requirements – Language requirements:

Applicants should possess a BSc degree in Meteorology (or equivalent) and an appropriate command of either the English or the Hungarian language

BSc – courses attended should – by all means – include:

- Mathematics (Basic, Analysis, Partial Differential Equations, Probability and Statistics) worth at least 12 credits,
- Physics (Basic, Mechanics, and Thermodynamics) worth at least 12 credits,
- Informatics (Numerical Methods, Programming, Data Processing) worth at least 6 credits,
- Meteorology (Basic, Climatology, Dynamic Meteorology, Synoptic Meteorology, Atmospheric Physics, Atmospheric Chemistry, Applied Climatology) worth at least 10 credits
- optional Earth Sciences (general astronomy, geography, geophysics, geology and cartography) worth maximum 10 credits.

One-third of the missing courses can be completed during the MSc studies as additional courses.

The successful applicant must have a good command of English. Several kind of internationally respected certificate of English language at advanced level is accepted.

Admission requirements – Documents to submit with application:

- ✓ Bachelor-level degree
- ✓ Transcript of records
- ✓ CV
- ✓ Motivation letter



- ✓ Letter of recommendation
- ✓ Application form
- ✓ Copy of the main pages of the passport (needs to be valid)
- ✓ Passport photo
- ✓ Medical certificate
- ✓ Copy of application fee transfer
- ✓ Other: synopsis of the completed relevant courses

Application procedure:

As a first step, it is suggested to contact the program coordinator by email to obtain a guess on the reliability of your application based on the previous achievements and certificates. The coordinator will inform you on your chances to be enrolled without an entrance examination, or you have to take part on it. General information about studying in Hungary can be obtained from the faculty coordinator.

The official application starts by completion of the registration form (<https://registration.elte.hu/>) and by the payment of the application fee. Within few weeks the applicant will be informed, if he/she is enrolled due to the high quality of the previous studies, if he/she needs to take part at an entrance exam in Budapest, or the application is refused. In the case an entrance examination, the details of the written/oral exam in Budapest will be arranged by emails.

Procedure of the entrance examination:

The Applicant's abilities in Meteorology, Mathematics and Physics will be orally tested by an examination committee (either personally or by telecommunication).



(F) CONTACT

Website: http://nimbus.elte.hu/index_en.html

Program leader

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