



Diploma Supplement

Holder of the information

Balázs Maga

Issued by

Eötvös Loránd University

Faculty of Sciences

The number of pages containing personal data in this document: 10

Institutional data: {A51B3111-C12E-4280-A846-D812CE918600}

1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1.0. Diploma identification number or code: ELTE-TTK-1774/2017 year: 2017
 1.1. Family name: Maga
 1.2. Given name(s): Balázs
 1.3. Date of birth (day/month/year): 01/07/1995 Place of birth: Nyíregyháza Country of birth: Hungary Mother's name: Bálint Borbála
 1.4. Student identification number or code: 79123197305 More identification: CY8RQQ
 1.5. Student registration code: T091556/FI80798
 Study started in 2014-2015-1 Study finished in 2016-2017-2

2. INFORMATION IDENTIFYING THE QUALIFICATION

2.1. Title of qualification conferred: Mathematician
 2.2. Main field(s) of study for the qualification: Mathematics
 2.3. Name of awarding institution: Eötvös Loránd University Faculty: Faculty of Sciences
 Status of awarding institution: university Maintainer: Hungary
 Professional accreditation body by Hungarian Accreditation Board
 2.4. Name of institution administering studies: Eötvös Loránd University (FI80798), university
 2.5. Language of instruction: Hungarian

3. INFORMATION ON THE LEVEL OF THE QUALIFICATION

3.1. Level of qualification: BA/BSc, ISCED 5A, EQF Level 6
 3.2. Official length of programme in semesters: 6 semesters Official length of programme in years: 3 years
 3.3. Access requirement(s): secondary school, ISCED 3A
 Baccalaureate (secondary school leaving final examination)

4. INFORMATION ON THE CONTENTS AND RESULTS GAINED

4.1. Academic Programme requirements:
 4.1.1. Identification number of Law on Qualification Requirements of Academic Programme: 381/2004. (XII.28.) Gov. De.
 4.1.2. Education goals: Mathematician
 4.1.3. Credits to achieve: 180
 4.1.4. System of grading: examinations, comprehensive examinations, degree paper, state examination

4.2. List of subjects / marks / credits:

Legend of the units displayed next to the number of hours taught: s - per semester; w - per week

Completed subjects

Semester: 2014-2015-1, Credits: 30

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<u>Subject</u>	<u>Code</u>	<u>Hours</u>	<u>Grade type</u>	<u>Credit</u>	<u>Grade</u>
Algebra 1 lecture - intensive	mm1c1a1:3	2/0/0/0/w	exam	2	5
Analysis 1E - advanced	mm1c1a1:2	3/0/0/0/w	exam	3	5
Number theory 1 lecture - intensive	mm1c1se1	2/0/0/0/w	exam	2	5
Discrete mathematics 1 lecture - intensive	mm1c1vm1:3	2/0/0/0/w	exam	2	5
Algebra 1 practise - intensive	mm1c2a1	0/2/0/0/w	term mark	3	5
Analysis 1 practise - intensive	mm1c2a1:2	0/4/0/0/w	term mark	5	5
Introductory Mathematics	mm1c2bm1	0/2/0/0/w	term mark	0	Pass
Elementar Mathematics	mm1c2em1:2	0/2/0/0/w	term mark	3	5
Number theory 1 practise - intensive	mm1c2se1:2	0/2/0/0/w	term mark	3	5
Discrete mathematics 1 practise - intensive	mm1c2vm1	0/2/0/0/w	term mark	3	5
Axioms on sphere	mm1n9e30	2/0/0/0/w	exam	2	5
Combinatorial number theory and geometrical problems	mm1n9e51	2/0/0/0/w	exam	2	5

Semester: 2014-2015-2, Credits: 34

<u>Subject</u>	<u>Code</u>	<u>Hours</u>	<u>Grade type</u>	<u>Credit</u>	<u>Grade</u>
Basics of programming - lecture	im1c1pn2	2/0/0/0/w	exam	2	5
Basics of programming - practise	im1c2pn2	0/2/0/0/w	term mark	3	5
Algebra 2. - raised	mm1c1a2:3	2/0/0/0/w	exam	2	5
Analysis 2 - intermediate	mm1c1a2:2	3/0/0/0/w	exam	3	5
Geometry 1 - raised	mm1c1ge2:2	3/0/0/0/w	exam	3	5
Set theory	mm1c1he4m	2/0/0/0/w	exam	2	5
Discrete mathematics 2 - raised	mm1c1vm2:2	2/0/0/0/w	exam	2	5
Algebra 2. - raised	mm1c2a2:3	0/2/0/0/w	term mark	3	5
Analysis 2 - raised	mm1c2a2:2	0/3/0/0/w	term mark	4	5

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Geometry 1 - raised	mm1c2ge2	0/2/0/0/w	term mark	3	5
Discrete mathematics 2 - raised	mm1c2vm2	0/2/0/0/w	term mark	3	5
Set theory optional exercise	mm1c9he2	0/2/0/0/w	term mark	2	5
Additive Combinatorics	mm2n9e11	2/0/0/0/w	exam	2	5

Semester: 2015-2016-1, Credits: 33

<u>Subject</u>	<u>Code</u>	<u>Hours</u>	<u>Grade type</u>	<u>Credit</u>	<u>Grade</u>
Algebra3E-m	mm1c1al3m	2/0/0/0/w	exam	2	5
Analysis 3 - Mathematician	mm1c1an3m	4/0/0/0/w	exam	4	5
Geometry 2E-m	mm1c1ge3m	2/0/0/0/w	exam	2	5
Operations research (lecture)	mm1c1op3m	2/0/0/0/w	exam	2	5
Introduction to topology	mm1c1to3m	2/0/0/0/w	exam	2	5
Probability theory 1 Math.	mm1c1vs3m	2/0/0/0/w	exam	2	5
Algebra 3. - Mathematician	mm1c2al3m	0/2/0/0/w	term mark	3	5
Analysis 3 - Mathematician	mm1c2an3m	0/3/0/0/w	term mark	4	5
Geometry 2G-m	mm1c2ge3m	0/2/0/0/w	term mark	3	5
Operations research 1 math.	mm1c2op3m	0/2/0/0/w	term mark	3	5
Intorduction to Topology pr	mm1c2to3m	0/2/0/0/w	term mark	3	5
Probability theory 1 - Mathematician	mm1c2vs3m	0/2/0/0/w	term mark	3	5

Semester: 2015-2016-2, Credits: 35

<u>Subject</u>	<u>Code</u>	<u>Hours</u>	<u>Grade type</u>	<u>Credit</u>	<u>Grade</u>
Programming Language C++	im1c3pn4	4/0/0/0/w	term mark	5	5
Algebra 4 Mathematician	mm1c1al4m	2/0/0/0/w	exam	2	5
Analysis 4 - Mathematician	mm1c1an4m	4/0/0/0/w	exam	4	5
Geometry 3. - Mathematician	mm1c1ge4m	3/0/0/0/w	exam	3	5
Number theory 2E-m	mm1c1se4m	2/0/0/0/w	exam	2	5

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Algebraic topology	mm1c1to4m	2/0/0/0/w	exam	2	5
Algebra 4 Mathematician	mm1c2al4m	0/2/0/0/w	term mark	3	5
Analysis 4 - Mathematician	mm1c2an4m	0/2/0/0/w	term mark	3	5
Geometry 3G-m	mm1c2ge4m	0/2/0/0/w	term mark	3	5
Algebraic topology	mm1c2to4m	0/2/0/0/w	term mark	3	5
Multiplicative number theory	mm2n1msz	2/0/0/0/w	exam	3	5
Mathematics problem solving seminar	mxxn9m01	0/2/0/0/w	term mark	2	5

Semester: 2016-2017-1, Credits: 31

<u>Subject</u>	<u>Code</u>	<u>Hours</u>	<u>Grade type</u>	<u>Credit</u>	<u>Grade</u>
Differential equationsE-m	mm1c1de5m	2/0/0/0/w	exam	2	5
Differential geometry1E-m	mm1c1dg5m	2/0/0/0/w	exam	2	5
Functional analysis1E-m	mm1c1fa5m	2/0/0/0/w	exam	2	5
Complex analysis supplementE-m	mm1c1fk5m	1/0/0/0/w	exam	1	5
Complex analysisE-m	mm1c1kf5m	2/0/0/0/w	exam	2	5
Numerical analysis 1 math.	mm1c1na5m	2/0/0/0/w	exam	2	5
Probability theory 2 - Mathematician	mm1c1vs5m	3/0/0/0/w	exam	3	5
Differential equationsG-m	mm1c2de5m	0/2/0/0/w	term mark	3	5
Differential geometry1G-m	mm1c2dg5m	0/2/0/0/w	term mark	3	5
Functional analysis1G-m	mm1c2fa5m	0/2/0/0/w	term mark	3	5
Complex analysisG-m	mm1c2kf5m	0/2/0/0/w	term mark	3	5
Numerical analysis 1 math.	mm1c2na5m	0/2/0/0/w	term mark	3	5
Probability theory 2 - Mathematician	mm1c2vs5m	0/2/0/0/w	term mark	2	5

Semester: 2016-2017-2, Credits: 22

<u>Subject</u>	<u>Code</u>	<u>Hours</u>	<u>Grade type</u>	<u>Credit</u>	<u>Grade</u>
Computational theory	mm1c1cs6m	2/0/0/0/w	exam	2	5

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Functional analysisE-m	mm1c1fa6m	2/0/0/0/w	exam	2	5
Function seriesE-m	mm1c1fs6m	2/0/0/0/w	exam	2	5
Partial differential equationsE-m	mm1c1pd6m	2/0/0/0/w	exam	2	5
Mathematical StatisticsE-m	mm1c1st6m	2/0/0/0/w	exam	2	5
Computational theory	mm1c2cs6m:2	0/2/0/0/w	term mark	3	5
Functional analysis 2	mm1c2fa6m	0/2/0/0/w	term mark	3	5
Partial differential equationsG-m	mm1c2pd6m	0/2/0/0/w	term mark	3	5
Mathematical statistics	mm1c2st6m	0/2/0/0/w	term mark	3	5
Other results					
<u>Subject</u>	<u>Code</u>	<u>Hours</u>	<u>Grade type</u>	<u>Credit</u>	<u>Grade</u>
Thesis	-	-	-	10	5
Final examination	-	-	-	-	5

Sum of Creditpoints contained in the transcript of records: 195

Overall classification of the thesis: 5

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Additional accredited qualification(s) and achievements:

general medium proficiency examination in French, 1833406,
12.10.2016
general advanced proficiency examination in English, 1661729,
06.11.2014
general medium proficiency examination in French, 1741876,
23.09.2015

4.3. System of assessment: Grading in a given subject is done on a five point scale:

Excellent (5) grade is assigned to the student who thoroughly knows the entire subject matter in all of its inherent relationships and is able to independently apply his/her knowledge with absolute certainty;

Good (4) grade is assigned to the student who thoroughly knows the entire subject matter of the course and can safely apply its content;

Satisfactory (3) grade is assigned to the student who knows significant parts of the subject matter of the course and is able to apply them with suitable safety;

Pass (2) grade is assigned to the student who knows significant parts of the course on a satisfactory level and is able to demonstrate an acceptable level of familiarity in the application of the content of the course;

Fail (1) grade is assigned to the student who does not command sufficient knowledge and cannot demonstrate skills in applying the practices of his/her chosen field.

Qualification - excellent (Exc), average (Av) or fail (Fail).

Signature - pass (Pass) or fail (Fail).

4.4. Degree classification: with honours

5. INFORMATION ON ENTITLEMENTS BY THE QUALIFICATION

5.1. Access to further study: MA/MSc, ISCED 5A

pon successful entrance examination MSc, PhD studies in science, preferably Mathematics.

5.2. Professional status: Mathematician

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6. ADDITIONAL INFORMATION

6.1. Further information:

Discrepancies in codes: due to changes in the electronic administration system of the University, there may be discrepancies in the subject codes or the subject features such as 'hours' recorded in the electronic system and those found in the student's mark/grade book (index). This discrepancy is restricted to the above data only, all other data pertaining to the subjects recorded here are identical with those found in the mark/grade book.

6.2. Eötvös Loránd University:

Facts and figures

Eötvös Loránd University - situated in Budapest - is the oldest and biggest university in Hungary. The number of its students has reached 32 500, the number of teachers and researchers is 2400.

History

The predecessor of the University was founded in 1635 by Péter Pázmány, the Archbishop of Esztergom as a catholic university for teaching Theology and Philosophy. The Faculty of Law was opened as early as 1667. With the foundation of the Medical Faculty in 1769, it became a classical university with four faculties. In 1777, the University was transferred to Buda and in 1784 to Pest. In 1780 - according to the Diploma Inaugurale, issued by Queen Maria Theresa - the catholic university, which had been established in Nagyszombat, became the Royal Hungarian University. During the 19th century the University developed into the academic centre of Hungary covering every scholarly field. At the turn of the century it belonged to the 15 biggest universities in the world. In 1921 the University took up the name of its founder and became the Royal Hungarian Pázmány Péter University. Since 1950 the University has borne the name of one of its previous rectors, the world-famous professor of Physics, Loránd Eötvös. Over the last hundred years, Eötvös Loránd University has had many world famous scientists and four Nobel Prize laureates among its teachers and alumni.

Faculties

Since 2003, the University has had 8 faculties: Faculty of Law and Political Science, Bárczi Gusztáv Faculty of Special Education, Faculty of Humanities, Faculty of Informatics, Faculty of Education and Psychology, Faculty of Primary and Pre-school Education, Faculty of Sciences and the Faculty of Social Sciences.

Training

Eötvös Loránd University offers training at all levels of higher education (BA, BSc, MA, MSc, PhD). Although the language of teaching is mainly Hungarian, a wide range of programmes - either full-time or part-time - is available in English.

Degrees

Eötvös Loránd University is internationally recognized and its programmes are accredited by the Hungarian Accreditation Board. The diplomas issued by Eötvös Loránd University are acknowledged worldwide, and its course credits are transferable in all countries in the European Union.

International Relations

Eötvös Loránd University has extensive relationships with universities all over the world. The University has formal agreements for cooperation and exchange with 120 universities in Europe, Asia, Africa, North and South America at institutional or faculty level. The main areas of cooperation are joint training and research projects, the exchange of students and guest lecturers, joint participation in international conferences and workshops, and also the exchange of guest lecturers.

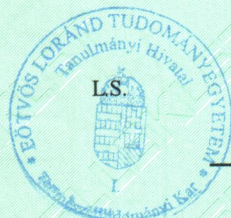
6.3. Further information sources:

www.elte.hu

Further validation and explain these data: 1117 Budapest Pázmány Péter sétány 1/A., Phone: 06-1-372-2500

7. CERTIFICATION OF THE DOCUMENT

Date: 10/07/2017



T. L. Gabriella

Gabriella Török

Head of Bureau of Education

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8. INFORMATION ON THE HUNGARIAN HIGHER EDUCATION SYSTEM

8.1. Types of Institutions and Institutional Control

The establishment and operation of higher education institutions are regulated by Act No. 204 of 2011 (National Higher Education Act). Operating within the legal framework of the National Higher Education Act, Hungarian higher education institutions are recognized state (public) or non-state (church or private) institutions. The list of recognized institutions is indicated in Annex 1 of the National Higher Education Act. Higher education studies are offered at two types of higher education institutions, *egyetem* (university) and *főiskola* (college). Universities and colleges may offer courses in all three training cycles. The programmes are identical at both types of institutions.

8.2. Types of Programmes and Degrees Awarded

The consecutive training cycles of higher education leading to a higher education degree are *alapképzés* (Bachelor course), *mesterképzés* (Master course) and *doktori képzés* (Doctoral course). In cases set by government decree or legislation, Master degrees can also be awarded after the completion of integrated, one-tier training.

In addition to the aforementioned, higher education institutions may conduct non-degree vocational higher education programmes and postgraduate specialist trainings and may offer adult education within the framework of lifelong learning as well.

Higher education institutions apply a credit system based on the European Credit Transfer and Accumulation System. Accordingly, one credit stands for an average of 30 hours of student workload.

8.3. Approval/Accreditation of Programmes and Degrees

In the case of each vocational higher education programme, Bachelor and Master course, the programme and outcome requirements are set in legal regulations, i.e. the level of the training, the professional qualification that can be obtained and all the competencies the acquisition of which are the preconditions for obtaining the diploma in the given programme.

Upon request of the higher education institution, the Educational Authority – after having obtained the expert opinion of the Hungarian Accreditation Committee – licenses and registers the launching of all vocational higher education programmes, a Bachelor or Master courses or Doctoral schools. Also, the operating licenses of higher education institutions are revised by the Educational Authority in every 5 years, taking into account the expert opinion of the Hungarian Accreditation Committee. The above mentioned procedures apply for all recognized, state or non-state higher education institutions, except for religious studies, since the Hungarian Accreditation Committee and the Educational Authority have no competence over the quality assurance in this field. In the case of religious studies only the requirements in respect of infrastructure can be examined.

8.4. Organisation of Studies

Students studying in vocational higher education programmes, Bachelor and Master courses, as well as postgraduate specialist trainings complete their studies by passing a final examination. The final examination may consist of the defense of the degree thesis or diploma project, and additional oral, written or practical examinations.

8.4.1. Vocational Higher Education Programmes

From 1 September 2013 higher-level vocational training has been replaced by vocational higher education programmes. This type of training no longer forms part of the National Register of Vocational Qualifications.

The diploma obtained after the completion of a vocational higher education programme testifies a vocational higher education qualification, but it is not per se an academic degree. A vocational higher education programme requires the completion of 120 to 150 credits; generally the length of the programme is 4-5 semesters.

8.4.2. First/Second Cycle Degree Programmes

The first higher education degree is the *alapképzés* (Bachelor degree) ending in a professional qualification. A Bachelor course requires the completion of 180 to 240 credits. The length of the programme is 6-8 semesters.

The second higher education degree is the *mesterképzés* (Master degree) ending in a professional qualification. Based on a Bachelor course, Master courses require the completion of 60 to 120 credits. The length of the programme is 2-4 semesters.

8.4.3. Integrated Programmes

The integrated, one-tier programmes, which are based on the secondary school leaving examination (*érettségi vizsga*), lead to *mesterképzés* (Master degree), have the length of 10-12 semesters and require the completion of 300 to 360 credits. Besides teacher education, religious studies and some programmes of arts, e. g. the following programmes are offered as integrated programmes: veterinary medicine, architecture, dentistry, pharmaceuticals, law and medicine.

8.4.4. Specialised Graduate Studies

Higher education institutions may also offer *szakirányú továbbképzés* (postgraduate specialist training) for Bachelor and Master degree holders in this type of a training. Through the completion of 60 to 120 credits a specialised qualification can be obtained. The length of the programme is 2-4 semesters.

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8.4.5. Doctoral Programmes

Based on a Master degree the *doktori képzés* (Doctoral course) requires the completion of at least 180 credits. The length of the programme is 36 months. Following the Doctoral course, or within the framework of the Doctoral course through a separate degree obtaining procedure, the scientific degree "Doctor of Philosophy" (abbreviation: PhD), or in the field of art "Doctor of Liberal Arts" (abbreviation: DLA) may be obtained. The maximum length of the degree obtaining procedure is 2 years.

8.5. Grading Scheme

The performance of students is generally assessed following a five-grade scale: excellent (5), good (4), satisfactory (3), pass (2), and fail (1) or a three-grade scale: pass with merit (5), pass (3), and unsatisfactory (1). Nevertheless, higher education institutions may also use other systems for assessment if they are comparable to those mentioned above.

8.6. Access to Higher Education Programmes

The ranking of students applying for higher education programmes is primarily based on their secondary school grades and their *érettségi vizsga* (secondary school leaving examination) results or based solely on the latter. The requirement for admission to vocational higher education programmes, Bachelor and integrated Master courses is the secondary school leaving examination taken – as a rule – after the completion of the 12th grade of a secondary school, certified by the *Érettségi bizonyítvány* (secondary school leaving certificate). The admission to certain programmes may also be based on health or professional requirements or aptitude tests. To Master courses students holding a Bachelor degree can be admitted. To postgraduate specialist trainings students holding a Bachelor or a Master degree may be admitted. To Doctoral courses only applicants holding a Master degree can be admitted. Higher education institutions may set additional requirements for admission to Master, postgraduate specialist and Doctoral courses.

8.7. Additional Sources of Information

Hungarian ENIC/NARIC⁶, Ministry of Human Resources⁷, Educational Authority⁸, Hungarian Accreditation Committee⁹, Educatio¹⁰.

⁶Web site: www.naric.hu

⁷Web site: www.kormany.hu/hu/emberi-eroforrasok-miniszteriuma

⁸Web site: www.oktatas.hu

⁹Web site: www.mab.hu

¹⁰Web site: www.felvi.hu