

DIPLOMA SUPPLEMENT

Number of diploma in the registry of diplomas: BME-0487/2012, year: 2012

1 HOLDER OF THE QUALIFICATION

1.1 Family name(s)	1.2 Given name(s)
<u>Horányi</u>	<u>Gergő</u>
1.3 Date of birth (day/month/year)	1.4 Student identification number or code (if available)
<u>28/03/1990</u>	<u>IMJ7FZ 79713759355</u>

2 INFORMATION ON IDENTIFYING OF THE QUALIFICATION

2.1 Name of qualification and (if applicable) title conferred
<u>Computer Engineer</u>
2.2 Main field(s) of study for the qualification
<u>Computer Engineering</u>
2.3 Name and status of awarding institution
<u>Budapest University of Technology and Economics State university, accredited by the Hungarian Accreditation Committee (HAC) with its resolution 1999/5/II/1.</u>
2.4 Name and status of institution (if different from 2.3) administering studies
<u></u>
2.5 Language(s) of instruction/examination
<u>Hungarian</u>

3 INFORMATION ON THE LEVEL OF THE QUALIFICATION

3.1 Level of qualification	3.2 Official length of program
<u>Bachelor (first cycle)</u>	<u>7 semesters</u>
3.3 Access requirements	
<u>Secondary school leaving certificate (after 12 years of study), entrance procedure</u>	

4 INFORMATION ON THE CONTENTS AND RESULTS GAINED

4.1 Mode of study
<u>Full time training</u>

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4.2 Program Requirements

4.2.1 Program requirements act number

Decree 15/2006 (IV.3.) OM from the study and graduation requirements of the Majors in Bachelor's and Master's Programs.

4.2.2 Aim of study

Education of computer engineers

4.2.3 Required number of credit points

210

4.2.4 System of knowledge checking

Examinations, BSc. thesis and its defending at public final examination

4.2.5 Required professional practice, credit value

4.3 Program details (e.g. modules or units studied), and the individual grades/marks/credits obtained

2008/09/1. credit points: 30

Subject	Subject code	Lessons per week (W)/semester (S)	Requirement	Credit points	Grade	Date
Micro- and Macroeconomics	BMEGT30A001	W: 4/0/0	Exam	4	4	16/12/2008
Psychology	BMEGT52A002	W: 2/0/0	Mid-term mark	2	4	17/12/2008
German for Beginners 1.	BMEGT611011	W: 0/4/0	Mid-term mark	0	5	12/12/2008
Calculus 1 for Informaticians	BMETE90AX04	W: 4/2/0	Exam	7	5	22/01/2009
University Experience	BMEVIDHKONI	W: 0/2/0	Signature	0	Sign	02/02/2009
Basics of Programming 1.	BMEVIEEA100	W: 2/2/0	Exam	5	5	15/12/2008
Software Laboratory 1.	BMEVIEEA101	W: 0/0/2	Mid-term mark	2	5	12/12/2008
Digital Design 1.	BMEVIMIA102	W: 2/2/0	Mid-term mark	5	5	12/12/2008
Introduction to the Theory of Computing 1.	BMEVISZA103	W: 2/2/0	Exam	5	3	07/01/2009

2008/09/2. credit points: 32

Subject	Subject code	Lessons per week (W)/semester (S)	Requirement	Credit points	Grade	Date
Management and Business Economics	BMEGT20A001	W: 4/0/0	Mid-term mark	4	4	15/05/2009
Ergonomics	BMEGT52A001	W: 2/0/0	Mid-term mark	2	3	15/05/2009
German for Beginners 2.	BMEGT611012	W: 0/4/0	Mid-term mark	0	2	15/05/2009
Physical Education B	BMEGT701008	W: 0/2/0	Signature	0	Sign	15/05/2009
Physics 1i	BMETE11AX03	W: 3/1/0	Exam	4	2	03/06/2009
Calculus 2 for Informaticians	BMETE90AX05	W: 4/2/0	Exam	7	4	11/06/2009
University Experience	BMEVIDHTF02	0/0/0	Signature	0	Sign	17/06/2009
Basics of Programming 2.	BMEVIMIA114	W: 2/2/0	Mid-term mark	4	5	15/05/2009
Software laboratory 2.	BMEVIMIA115	W: 0/0/2	Mid-term mark	2	5	15/05/2009
Digital Design 2.	BMEVIMIA111	W: 2/2/0	Exam	5	5	26/05/2009
Introduction to the Theory of Computing 2.	BMEVISZA110	W: 2/2/0	Exam	4	4	22/05/2009

2009/10/1. credit points: 34

Subject	Subject code	Lessons per week (W)/semester (S)	Requirement	Credit points	Grade	Date
Vision, language and memory	BMEGT47A001	W: 2/0/0	Mid-term mark	2	4	11/12/2009
Business Law	BMEGT55A001	W: 2/0/0	Mid-term mark	2	4	14/12/2009
Physical Education C	BMEGT701009	W: 0/2/0	Signature	0	Sign	11/12/2009
Physics 2i	BMETE11AX04	W: 3/1/0	Exam	4	3	14/01/2010
Coding technology	BMEVIHIA209	W: 3/1/0	Mid-term mark	5	5	11/12/2009
Computer Architectures	BMEVIHIA210	W: 2/2/0	Exam	5	5	06/01/2010
Software Laboratory 3,	BMEVHIA212	W: 0/0/2	Mid-term mark	2	5	23/12/2009
Software Technology	BMEVHIA217	W: 3/1/0	Exam	4	4	05/01/2010
Computer Graphics and Image Processing	BMEVHIA316	W: 3/1/0	Exam	4	5	22/12/2009
Measurement Laboratory 1.	BMEVIMIA211	W: 0/0/2	Mid-term mark	2	5	11/12/2009
Probability Theory	BMEVISZA208	W: 3/1/0	Exam	4	4	15/01/2010

2009/10/2. credit points: 30

Subject	Subject code	Lessons per week (W)/semester (S)	Requirement	Credit points	Grade	Date
Economic Policy	BMEGT35A003	W: 2/0/0	Mid-term mark	2	4	14/05/2010
Pedagogy (Digital Pedagogy)	BMEGT51A001	W: 2/0/0	Mid-term mark	2	5	14/05/2010
Physical Education D	BMEGT701010	W: 0/2/0	Signature	0	Sign	14/05/2010
Software Techniques	BMEVIAUA218	W: 3/1/0	Exam	4	5	25/05/2010
University Experience	BMEVIDHTF04	W: 0/2/0	Signature	0	Sign	14/05/2010
Computer Networks	BMEVIHIA215	W: 3/1/0	Exam	4	4	19/05/2010
Signals and Systems	BMEVIHVA214	W: 3/1/0	Mid-term mark	5	2	14/05/2010
Software Laboratory 4.	BMEVHIA220	W: 0/0/2	Mid-term mark	2	5	14/05/2010
Measurement Laboratory 2.	BMEVIMIA216	W: 0/0/2	Mid-term mark	2	5	14/05/2010
Operating Systems	BMEVIMIA219	W: 3/1/0	Exam	4	5	01/06/2010
Theory of Algorithms	BMEVISZA213	W: 2/2/0	Exam	5	4	03/06/2010

2010/11/1. credit points: 32

Subject	Subject code	Lessons per week (W)/semester (S)	Requirement	Credit points	Grade	Date
Introduction to Architecture	BMEPUA101	W: 2/0/0	Mid-term mark	2	4	06/01/2011
Taxation	BMEGT35A009	W: 2/0/0	Mid-term mark	2	5	08/12/2010
English for Engineers	BMEGT63A051	W: 0/2/0	Mid-term mark	2	5	10/12/2010
Physical Education A.	BMEGT701007	W: 0/2/0	Signature	0	Sign	10/12/2010
Control Engineering	BMEVIAUA309	W: 3/1/0	Mid-term mark	4	4	10/12/2010
Electronics	BMEVIEEA307	W: 3/1/0	Mid-term mark	4	4	10/12/2010
Virtualization technologies and their applications	BMEVIMIAV89	W: 2/0/0	Mid-term mark	2	5	10/12/2010
Measurement Laboratory 3.	BMEVIMIA312	W: 0/0/2	Mid-term mark	2	5	10/12/2010
Artificial Intelligence	BMEVIMIA313	W: 3/1/0	Exam	5	4	20/12/2010
Telecommunication Networks and Services	BMEVITMA310	W: 3/1/0	Exam	4	5	13/12/2010
Databases	BMEVITMA311	W: 3/1/0	Exam	5	5	12/01/2011

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2010/11/2, credit points: 32

Subject	Subject code	Lessons per week (W)/semester (S)	Requirement	Credit points	Grade	Date
Physical Education E	BMEGT701011	W: 0/2/0	Signature	0	Sign	13/05/2011
Developing data-driven applications	BMEVIAUA369	W: 3/1/0	Exam	4	5	06/06/2011
Object-oriented software design	BMEVIAA371	W: 3/1/0	Exam	4	4	24/05/2011
Eclipse technologies	BMEVIMIAV92	W: 2/0/2	Exam	4	5	16/06/2011
Measurement Laboratory 4.	BMEVIMIA315	W: 0/0/2	Mid-term mark	2	5	13/05/2011
Intelligent Systems Surveillance	BMEVIMIA370	W: 3/1/0	Exam	4	5	01/06/2011
IT Engineering Laboratory 1.	BMEVIMIA373	W: 0/0/2	Mid-term mark	2	5	13/05/2011
Project Laboratory	BMEVIMIA376	W: 0/0/4	Mid-term mark	6	5	13/05/2011
Software Laboratory 5.	BMEVITMA308	W: 0/0/2	Mid-term mark	2	5	27/05/2011
Management of Information Systems	BMEVITMA314	W: 3/1/0	Exam	4	4	26/05/2011

2011/12/1, credit points: 26

Subject	Subject code	Lessons per week (W)/semester (S)	Requirement	Credit points	Grade	Date
Physical Education F.	BMEGT701012	W: 0/2/0	Signature	0	Sign	09/12/2011
European train control system	BMEKOKA8681	W: 2/0/0	Mid-term mark	2	5	16/12/2011
Cloud-based software development	BMEVIAUAV07	W: 2/0/0	Mid-term mark	2	5	09/12/2011
BSc Thesis Project	BMEVIMIA411	W: 0/14/0	Mid-term mark	15	5	19/12/2011
IT Engineering Laboratory 2.	BMEVIMIA429	W: 0/0/2	Mid-term mark	2	5	20/12/2011
Declarative Programming	BMEVISZA402	W: 3/1/0	Exam	5	5	16/12/2011

If the number of lessons contains / marks, like in le/p/ly, its meaning is: number of lectures/class practices/laboratories.

Total number of credits: 216

4.4 Grading scheme and, if available, grade distribution guidance

All grades at least pass (2).

4.5 Overall classification of the qualification

excellent

5 INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1 Access to further study

Continuation of the studies is in Master's Program.

5.2 Professional status (if applicable)

6 ADDITIONAL INFORMATION

6.1 ADDITIONAL INFORMATION

6.1.1 Information concerning the holder of the diploma

6.1.2 Information on the Institution

The predecessor in title of the Budapest University of Technology and Economics (BME) was founded in 1782. It is a state university, presently the largest technical university in Hungary. The faculties: Civil Engineering, Mechanical Engineering, Architecture, Chemical Technology and Biotechnology, Electrical Engineering and Informatics, Transportation Engineering, Natural Sciences, Economic and Social Sciences. Presently, there are about 17000 full-time, (including 1100 foreign) students, and 5000 corresponding students. 2700 students participate in distance learning. There are 850 PhD/DLA students. The university has about 1300 staff members, including 175 full professors. The courses are offered in Hungarian, English, German, French and Russian. Home page: www.bme.hu/

6.2 Further information sources

<http://www.vik.bme.hu>,

Information concerning the Diploma Supplements in Hungary is available from the DS home page of the Hungarian Ministry of Education (when issuing this document, this is <http://www.om.hu/ds/>), or from that of the Hungarian Europass Centre (when issuing this document, this is <http://www.europass.hu/ds/>). Verification of a printed diploma supplement can be performed starting from the above pages. International information is available starting from the ENIC/NARIC home page: <http://www.enic-naric.net/>.

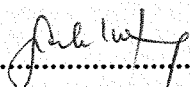
7 CERTIFICATION OF THE SUPPLEMENT

7.1 Date

19/01/2012

7.2 Name and signature

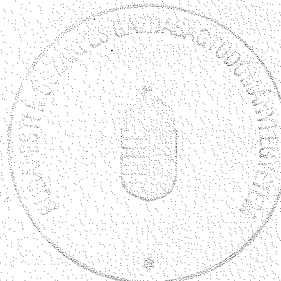
Dr. Mihály Szabó

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7.3 Capacity

Director of Central Study Office

7.4 Official stamp or seal



8 Information on the Hungarian Higher Education System

Within the framework of the Bologna Process the gradual transition from a pre-Bologna higher education system resulting in Egyetemi oklevél (university-level degree) or Főiskolai oklevél (college-level degree) to a higher education system based on three consecutive cycles started in 2004 in Hungary. At the time of drafting this Diploma Supplement pre-Bologna and Bologna - type programmes run parallel.

This description presents the Bologna - type training, and was prepared in 2008 for diplomas awarded within the Bologna-type system.

8.1 Types of Institutions and Institutional Control

The establishment and operation of higher education institutions are regulated by the 2005 Higher Education Act. Operating within the legal framework of the Higher Education Act, Hungarian higher education institutions are autonomous, state-recognised, state or non-state (church or private)

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institutions. The state-recognised institutions are listed in the Annex of the Higher Education Act. There are two types of higher education institutions, egyetem (university) and főiskola (college). Both universities and colleges may offer courses in all three cycles. A university is a higher education institution that is eligible to provide Master courses in at least two fields of study, and to offer Doctorate course as well as to confer Doctoral degrees. The rules applying to universities offering courses in the field of art or religious education are different from the aforementioned.

8.2 Types of Programmes and Degrees Awarded

The consecutive training cycles of the higher education leading to a higher education degree are alapképzés (Bachelor course), mesterképzés (Master course) and doktori képzés (Doctorate course). Bachelor and Master courses are taught in consecutive cycles, in the form of divided training, or in cases specified by law in the form of undivided, one-tier training.

In addition to the aforementioned, higher education institutions may conduct higher-level vocational training and postgraduate specialist training, as well as can offer adult education within the framework of lifelong learning.

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

8.3 Approval/Accreditation of Programmes and Degrees

A higher education institution may launch Bachelor and Master courses after having obtained the consent thereto in the expert opinion of the Hungarian Accreditation Committee of Higher Education, and following the central registration of the given course. In the case of each Bachelor and Master course, the law determines the programme and graduation requirements, thus, all the knowledge and competencies whose acquisition is the precondition for the diploma to be awarded in respect to the given programme.

The launching of Doctorate courses is within the powers of the universities, having obtained the consent thereto in the expert opinion of the Hungarian Accreditation Committee of Higher Education and having fulfilled other conditions prescribed by law.

It is the task of the Hungarian Accreditation Committee of Higher Education to authorize and assess the quality of education and scientific activities of the higher education institutions. The Hungarian Accreditation Committee of Higher Education once in every eight years examines in which field of study, discipline of science and at what level of training does an institution fulfil accreditation requirements in respect of lecturers and infrastructure. The assessment also extends to examine the adequacy of the institutional quality development scheme. Within the framework of programme accreditation the Hungarian Accreditation Committee of Higher Education examines the institutional programme curricula, the fulfilment of programme and graduation requirements, as well as the adequacy of the lecturers' qualifications and the quality of the infrastructure in respect to the given programme.

8.4 Organisation of Studies

Students studying in Bachelor and Master courses complete their studies by passing a final examination. The final examination may consist of the defence of the degree thesis, and additional oral, written or practical examinations.

8.4.1 Integrated "Long" (One-tier) Programmes

An undivided one-tier programme resulting in mesterfokozat (Master degree) is a training with the length of 10-12 semesters, requiring the completion of 300-360 credits. Besides religious education and some programmes of arts, the following programmes are conducted within one-tier Master courses: veterinary medicine, architecture, dentistry, pharmaceuticals, law and medicine.

8.4.2 First/Second Degree Programmes (Two-tier)

The first higher education degree is the alapfokozat (Bachelor degree) along with a professional qualification. A Bachelor course requires gaining 180-240 credits. The length of the programme is 6-8

semesters.

The second higher education degree is the mesterfokozat (Master degree) along with a professional qualification. Built on a Bachelor course Master courses require gaining 60-120 credits. The length of the programme is 2-4 semesters.

8.5 Specialised Graduate Studies

Higher education institutions may also offer szakirányú továbbképzés (postgraduate specialist training) for Bachelor and Master degree holders. Through the completion of 60-120 credits a specialised qualification can be obtained. Students complete their studies by passing a final examination. The length of the programme is 2-4 semesters.

8.6 Doctorate

Built on a Master course and a Master degree the doktori képzés (Doctorate course) requires gaining at least 180 credits. The length of the programme is 6 semesters. Following a Doctorate course, in a separate degree awarding procedure, the scientific degree "Doctor of Philosophy" (abbreviation: PhD), or in art education "Doctor of Liberal Arts" (abbreviation: DLA) may be awarded.

8.7 Grading Scheme

The assessment of knowledge is generally carried out according to a five-grade scale: excellent (5), good (4), satisfactory (3), pass (2), and fail (1) or a three-grade scale: excellent (5), satisfactory (3), fail (1). Nevertheless, higher education institutions may also use other systems for assessing if they are comparable to those mentioned above.

8.8 Access to Higher Education

The number of students admitted to higher education is limited. Applicants' ranking is based on their secondary school grades and their érettségi vizsga (secondary school leaving examination) results or based solely on the latter, considering the interest of the applicant. The requirement for admission to Bachelor and undivided one-tier 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 Érettségi bizonyítvány (secondary school leaving certificate). The admission to certain programmes is based on an additional aptitude test or a practical examination. To Master courses students can be admitted if they possess Főiskolai oklevél (college-level degree) or Egyetemi oklevél (university-level degree) or a Bachelor degree. To postgraduate specialist training students can be admitted if they possess college or university-level degree, or a Bachelor or a Master degree. Only applicants with university-level degree or Master degree may be admitted to Doctorate courses. Higher education institutions may set additional requirements for admission to Master, postgraduate specialist and Doctorate courses.

8.9 National Sources of Information

Ministry of Education and Culture¹, Hungarian ENIC/NARIC², Hungarian Accreditation Committee of Higher Education³, Educational Authority⁴, National Higher Education Information Centre⁵.

1 Web site: www.nefmi.gov.hu

2 Web site: www.naric.hu

3 Web site: www.mab.hu

4 Web site: www.oh.gov.hu

5 Web site: www.felvi.hu

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