



DIPLOMA SUPPLEMENT

This Diploma Supplement follows the model developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of this supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (diplomas, degrees, certificates, etc.) It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free of any value-judgements, equivalence statements or suggestions about recognition. Information should be provided in all eight sections. Where information is not provided, a reason should be given.

1 INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

- 1.1 Family name(s) Tikka
- 1.2 Given name(s) Pauli Tapani
- 1.3 Date of birth 6th of June 1981
- 1.4 Student identification number or code 502508

2 INFORMATION IDENTIFYING THE QUALIFICATION

2.1 Name of qualification and (if applicable) title conferred (in original language)

Diplomi-insinööri

2.2 Main field(s) of study for the qualification

Biotechnology, Technology

2.3 Name (in original language) and status of awarding institution

Turun yliopisto (University of Turku), state recognised university

The quality assurance system of the university has passed the audit conducted by the Finnish Higher Education Evaluation Council. Further information: www.kka.fi

2.4 Name (in original language) and status of institution (if different from 2.3) administering studies

Not applicable

2.5 Language(s) of instruction/examination

Finnish

3 INFORMATION ON THE LEVEL OF THE QUALIFICATION

3.1 Level of Qualification

Second-cycle university degree

See 8.

3.2 Official length of programme

The degree consists of at least
120 credits, 2 years full-time study

Finnish credits are fully compatible with European Credit Transfer System (ECTS)



3.3. Access requirements

See 8. There is numerus clausus, i.e. restricted entry, to all fields of study.

The admission requirement for the second-cycle university degree is a first-cycle higher education degree.

4 INFORMATION ON THE CONTENTS AND RESULTS GAINED

4.1 Mode of study

Full-time

4.2 Programme requirements

		Credits	Grade
Main subject:	Biotechnology	96	Good
	Includes thesis	30	Good
Minor subjects:	Process Technology	21	Very good

Other studies: 16

See transcript of records

Aims of the higher university degree:

1. The education shall provide the student with:

- (1) good overall knowledge of the major subject or a corresponding entity and conversance with the fundamentals of the minor subject or good knowledge of the advanced studies included in the degree programme;
- (2) knowledge and skills needed to apply scientific knowledge and scientific methods or knowledge and skills needed for independent and demanding artistic work;
- (3) knowledge and skills needed for independently operating as an expert and developer of the field;
- (4) knowledge and skills needed for scientific or artistic postgraduate education; and
- (5) good language and communication skills.

2. The education shall be based on scientific research or artistic activity and professional practices in the field.

4.3 Programme details

See transcript of records

4.4 Grading scheme and, if available, grade distribution guidance

	Grade	ECTS	Thesis
Excellent	5	A	L
Very good	4	B	E
Good	3	C	M, C, N
Satisfactory	2	D	B
Sufficient	1	E	A

Note: Finnish grades can also be evaluated on a pass/fail scale: PASS = passed.
The thesis may also be evaluated with KH = Approved with honours.

4.5 Overall classification of the qualification

Not applicable



5 INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1. Access to further study

Eligible for doctoral studies

5.2. Professional status (if applicable)

Under the Finnish legislation, a person who has taken the Degree Diplomi-insinööri is qualified for posts or positions in the public sector for which the qualification requirement is a second-cycle academic degree. In some cases, the qualification requirement also includes the completion of minor or major studies in certain specified fields of study.

The degree falls under the Article 11 of the Directive 2005/36/EC of the European Parliament and of the Council on the recognition of professional qualifications, level e.

6 ADDITIONAL INFORMATION

6.1 Additional information

Turun yliopisto (University of Turku) and Turun kauppakorkeakoulu (Turku School of Economics) have merged into Turun yliopisto, as of 01.01.2010. Turun yliopisto and Turun kauppakorkeakoulu were state recognised universities.

6.2 Further information sources

www.utu.fi, University of Turku
www.minedu.fi, Ministry of Education and Culture
www.oph.fi/recognition, www.oph.fi/qualificationsframework
The Finnish National Board of Education, (The National Academic Recognition Information Centre (NARIC, the National Coordination Point for the European Qualifications Framework (EQF)
www.kka.fi, The Finnish Higher Education Evaluation Council

7 CERTIFICATION OF THE SUPPLEMENT

7.1 Date 12th of June 2014

7.2 Signature

Tapio Salakoski

Tiina Mäkynen

7.3 Capacity Vice Dean

Head of Student and Academic Affairs

7.4 Official stamp or seal

8 INFORMATION ON THE NATIONAL HIGHER EDUCATION SYSTEM

The description of the higher education system has been prepared by the Finnish National Board of Education and approved by the Ministry of Education and Culture.

The Finnish education system consists of basic education, general and vocational upper secondary education, higher education and adult education. The basic education consists of a 9-year compulsory school for all children from 7 to 16 years of age.



Post-compulsory education is given by general upper secondary schools and vocational institutions. The general upper secondary school provides a 3-year general education curriculum, at the end of which the pupil takes the national Matriculation examination (ylioppilastutkinto/studentexamen). Vocational institutions provide 3-year programmes, which lead to upper secondary vocational qualifications (ammattillinen perustutkinto/yrkesinriktad grundexamen).

General eligibility for higher education is given by the Matriculation examination and the upper secondary vocational qualification. These qualifications require at least 12 years of schooling. Equivalent foreign qualifications also give general eligibility for higher education.

The Finnish higher education system comprises of universities (yliopisto/universitet) and polytechnics (ammattikorkeakoulu, AMK/yrkeshögskola, YH). All universities engage in both education and research and have the right to award doctorates. The polytechnics are multi-field institutions of professional higher education. Polytechnics engage in applied research and development. The polytechnics use the terms polytechnic or university of applied sciences when referring to themselves. This higher education system description uses the term polytechnic.

Higher education studies are measured in credits (opintopiste/studiepoäng). Study courses are quantified according to the work load required. One year of studies is equivalent to 1600 hours of student work on the average and is defined as 60 credits. The credit system complies with the European Credit Transfer and Accumulation System (ECTS).

8.1. University degrees

The Government Decree on University Degrees (794/2004) defines the objectives, extent and overall structure of degrees. The universities decide on the detailed contents and structure of the degrees they award. They also decide on their curricula and forms of instruction.

8.1.1. First-cycle university degree

The first-cycle university degree consists of at least 180 credits (3 years of full-time study). The degree is called kandidaatti/kandidat in all fields of study except Law (oikeusnotaari/rättsnotarie) and Pharmacy (farmaseutti/farmaceut). The determined English translation for all these degrees is Bachelor's degree, the most common degrees being the Bachelor of Arts or Bachelor of Science.

Studies leading to the degree provide the student with: (1) knowledge of the fundamentals of the major and minor subjects or corresponding study entities or studies included in the degree programme and the prerequisites for following developments in the field; (2) knowledge and skills needed for scientific thinking and the use of scientific methods or knowledge and skills needed for artistic work; (3) knowledge and skills needed for studies leading to a higher university degree and for continuous learning; (4) a capacity for applying the acquired knowledge and skills to work; and (5) adequate language and communication skills.

Studies leading to the degree may include: basic and intermediate studies; language and communication studies; interdisciplinary programmes; other studies and work practice for professional development. The degree includes a Bachelor's thesis (6 – 10 credits).

8.1.2. The second-cycle university degree

The second-cycle university degree consists of at least 120 credits (2 years of full-time study). The extent of studies required for a programme leading to the second cycle university degree which is geared towards foreign students is a minimum of 90 credits. The degree is usually called maisteri/magister. Other second-cycle degree titles are diplomi-insinööri/diplomingenjör (Technology), proviisori/provisor (Pharmacy) and arkkitehti/arkitekt (Architecture). The determined English translation for all these degrees is Master's degree, the most common degrees being the Master of Arts or Master of Science. The second-cycle university degree title in the fields of Medicine, Veterinary Medicine and Dentistry is lisensiaatti/licentiat, the English title being Licentiate. The admission requirement for the second-cycle university degree is a first-cycle degree.

In the fields of Medicine and Dentistry the university may arrange the education leading to the second-cycle university degree without including a first-cycle university degree in the education. In Medicine the degree consists of 360 credits (6 years of full-time study) and in Dentistry the degree consists of 300 credits (5 years of full-time study).

Studies leading to the second-cycle university degree provide the student with: (1) good overall knowledge of the major subject or a corresponding entity and conversance with the fundamentals of the minor subject or good knowledge of the advanced studies included in the degree programme; (2) knowledge and skills needed to apply



scientific knowledge and scientific methods or knowledge and skills needed for independent and demanding artistic work; (3) knowledge and skills needed for independently operating as an expert and developer of the field; (4) knowledge and skills needed for scientific or artistic postgraduate education; and (5) good language and communication skills.

The studies leading to the second-cycle university degree may include: basic and intermediate studies and advanced studies; language and communication studies; interdisciplinary study programmes; other studies; and internship improving expertise. The degree includes a Master's thesis (20 – 40 credits).

8.2. Doctoral degrees

Students can apply for doctoral studies after the completion of a relevant second-cycle degree. The aim of doctoral studies is to provide student with an in-depth knowledge of their field of research and capabilities to produce novel scientific knowledge independently.

A pre-doctoral degree of *lisensiaatti/licentiat* (Licentiate) may be taken before the Doctor's degree and in general it takes 2 years of full-time study to complete.

The Doctor's degree takes approximately 4 years to complete after the second-cycle degree or 2 further years following the pre-doctoral degree. A student who has been admitted to complete the Doctor's degree must complete a given amount of studies, show independent and critical thinking in the field of research and write a Doctor's dissertation and defend it in public.

8.3. Polytechnic degrees

The government decree on polytechnics (352/2003 including amendments) defines the objectives, extent and overall structure of polytechnic degrees. The Ministry of Education confirms the degree programmes of polytechnics, and within the framework of these regulations, the polytechnics decide on the content and structure of their degrees in more detail. The polytechnics also decide on their annual curricula and forms of instruction.

8.3.1. First-cycle polytechnic degrees

The first-cycle polytechnic degree consists of 180, 210 or 240 credits (3 to 4 years of full-time study) depending on the study field. For specific reasons, the Ministry of Education may confirm the scope of the degree to exceed 240 credits. The first-cycle polytechnic degree is called *ammattikorkeakoulututkinto/yrkeshögskoleexamen*. The determined English translation for the degree is Bachelor's degree. The degree titles indicate the field of study, e.g. Bachelor of Engineering or Bachelor of Health Care.

Studies leading to the degree provide the student with (1) broad overall knowledge and skills with relevant theoretical background for working as expert of the field; (2) knowledge and skills needed for following and advancing developments in the field; (3) knowledge and skills needed for continuous learning; (4) adequate language and communication skills; and (5) knowledge and skills required in the field internationally.

The first-cycle polytechnic degree comprises basic and professional studies, elective studies, a practical training period and a Bachelor's thesis or a final project.

8.3.2. The second-cycle polytechnic degrees

The second-cycle polytechnic degree consists of 60 or 90 credits (1 or 1.5 years of full-time study). The degree is called *ylempi ammattikorkeakoulututkinto/högre yrkeshögskoleexamen*. The determined English translation for the second-cycle polytechnic degree is Master's degree. The degree titles indicate the field of study, e.g. Master of Culture and Art or Master of Business Administration. Eligibility for second-cycle polytechnic degrees is given by a relevant first-cycle degree with at least 3 years of relevant work or artistic experience.

Studies leading to the degree provide the student with (1) broad and advanced knowledge and skills for developing the professional field as well as the theoretical skills for working in demanding expert and leadership positions in the field; (2) profound understanding of the field, its relation to work life and society at large as well as the knowledge and skills needed for following and analysing both theoretical and professional developments in the field; (3) capacity for life-long learning and continuous development of one's own expertise (4) good language and communication skills required in work life; and (5) knowledge and skills needed to function and communicate in the field internationally.

The second-cycle polytechnic degree comprises advanced professional studies, elective studies and a final thesis or a final project.

TRANSCRIPT OF STUDY RECORDS

Studies included for one degree or module

PAULI TAPANI TIKKA
 Töölönkatu 8 a4

00100 HELSINKI

Student's Name TIKKA, PAULI TAPANI
 Date of Birth 06.06.1981
 Registered (University) 2011
 Student Number 502508

	Credit	L	Gr	Date
University Degrees in the University of Turku				
Master of Science (Technology)	133	O	HYV	12.06.2014
Advanced Studies in Biotechnology	96	O	3	02.06.2014
Other Studies for Master's Degree	16	O	HYV	11.04.2013
Process Technology	21	O	4	11.04.2013
Biotechnology (tech. field)				
Advanced Studies in Biotechnology	96	O	3	02.06.2014
Advanced Biotechnology Exam	4	S	4	26.05.2014
(The Immunoassay Handbook, D. Wild (ed.), Ch. 3-5, 8-9 (1-14))				
Advanced Laboratory Course in Biotechnology 1	6	S	HYV	22.10.2013
Advanced Laboratory Course in Biotechnology 2	6	S	HYV	22.10.2013
Application Area of Biotechnology, Part 1	4	S	4	07.01.2013
Application Area of Biotechnology, Part 2	4	S	4	08.02.2013
Assignments in Fermentation and Downstream Techniques	3	S	HYV	31.01.2013
Biotechnical Applications of Nucleic Acids	4	S	HYV	13.05.2013
Biotechnology in Health and Disease I	2	S	HYV	05.11.2012
Degree Qualifying Examination for Master's Degree	0	S	HYV	05.05.2014
(Kieli: suomi)				
Fermentation and Downstream Techniques	3	S	4	01.10.2012
In Vitro Diagnostics - Advanced Course	3	S	3	19.11.2012
Master's Thesis in Technology	30	S	3	27.05.2014
Master's Thesis Seminar	5	S	HYV	11.04.2014
Possibilities of Diagnostics	3	S	HYV	03.12.2012
Reaction Kinetics	7*	S	3	08.02.2012
08.02.2012 Åbo Akademi University				
Transport Processes	4*	S	5	14.03.2012
14.03.2012 Åbo Akademi University				
Work Placement	4	S	HYV	02.06.2014
Working in a Research Project	4	S	HYV	02.06.2014
Process Technology	21	O	4	11.04.2013

Continued

TIKKA, PAULI TAPANI

Date of Birth 06.06.1981

Studies Completed at Other Universities	3*	P	HYV	08.09.2011
10.05.2004 Helsinki University of Technology				
(Introdukt.till syst.- och reglerteknik ,sis.DI-tutk.18.12.06)				
Studies Completed at Other Universities 2	6*	P	HYV	08.09.2011
21.12.2004 Helsinki University of Technology				
(Processteknikens grunder ,sis.DI-tutk. 18.12.2006)				
Mass Transfer and Separation Technology	7*	A	4	23.05.2012
23.05.2012 Åbo Akademi University				
Principles of Chemical Reaction Engineering	5*	A	4	01.02.2012
01.02.2012 Åbo Akademi University				
Total 117 CP				

Common Studies

Other Studies for Master's Degree	16	O	HYV	11.04.2013
Metabolism	4	P	4	21.08.2012
Molecular Biology, Laboratory Course	5	A	2	11.04.2013
Scientific Publications	1	A	HYV	02.10.2012
Introduction to Bioinformatics	4	S	5	20.07.2012
Basic Academic Writing	2	K	HYV	30.11.2011
Total 16 CP				

Total credits completed 133

* = transferred credits (total 32)

Affirmed to be a true transcript from the Study Register
of the University of Turku

University of Turku
Faculty of Mathematics
and Natural Sciences

Turku 12.06.2014


Anneli Salminen
Ex officio

Stamp

List of abbreviations:

Credit Point (CP): Credit points are based on the ECTS system. The bachelor's degree consists of 180 credit points and the master's degree of 120 credit points. The only exception is the Master of Psychology degree, which is 150 credit points. The extent of the Licentiate in Medicine degree is 360 credit points and the Licentiate degree in Dentistry 300 credit points. The normative yearly amount of studies is 60 credit points with a duration of three years of the bachelor's degree and two years of the master's degree. Lectures, exercises, and other forms of instruction as well as independent study are included in the hours required for one credit.

Level of Studies (L): Y General Studies, P Basic Studies, A Intermediate Studies, S Advanced Studies, J Postgraduate Studies, K Language Studies, V Preparatory Studies, O Study Module

Grades (Gr) are classified as follows:

	Gr	ECTS	Thesis
excellent	5	A	L, 10
very good	4	B	E, 9
good	3	C	M, C, N, 8, 7, 6
satisfactory	2	D	B
sufficient	1	E	A

Continued

TIKKA, PAULI TAPANI

Date of Birth 06.06.1981

Note: Finnish grades can also be evaluated on a pass-fail scale: pass=HYV.
The thesis may also be evaluated with KH: Approved with honours.

University of Turku
Faculty of Mathematics
and Natural Sciences