# ÓBUDA UNIVERSITY JOHN VON NEUMANN FACULTY OF INFORMATICS

Preparation guideline of Thesis (BSc)/Thesis work (MSc)

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#### I. Thesis (BSc) / Thesis work (MSc) subjects<sup>1</sup>

#### 1. Subject schedules and guidelines

Thesis I	7 credits	Semester 6
Thesis II	8 credits	Semester 7
Thesis work I	10 credits	Semester 1
Thesis work II	4 credits	Semester 2
Thesis work III	6 credits	Semester 3
Thesis work IV	10 credits	Semester 4

The person in charge of the subjects is the programme responsible, and the work is supported operationally by the BSc coordinator, MSc coordinator, specialisation coordinator, and the supervisor.

It is possible to sign up for these subjects in the Neptun system both in the fall and in the spring semester. All Thesis and Thesis work subjects end with mid-term mark.

Pre-requisites of signing up for the subject titled Thesis I:

 Thesis I must be taken in Neptun according to the specialisation, but does not necessarily have to be a closely related topic. Permission to take a topic not closely related to the specialisation requires the permission of the person responsible for the specialisation.

In duly justified cases, if the topic of the thesis requires, the external partner may, at the **time of announcing the topic**, request the thesis to be classified, in the form of a request addressed to the Vice Dean for Education, but submitted by the student to the Graduation group, accompanied by a detailed justification from the external partner.

Change of topic/supervisor during the preparation of the thesis /thesis work:

- changes of topic or supervisor can only be made with the consent and approval of the former and future supervisor(s) and the director(s) of the institute
- the change of the Thesis II topic in relation to Thesis I (new topic description) and/or a change of the supervisor is only allowed in extremely justified cases. Otherwise, the Thesis I must be taken up and completed again
- During the preparation of the thesis work, a change of topic is possible for Thesis work II. and Thesis work III. in justified cases, but not for Thesis work IV!

It is important to note that it is possible to change the topic and/or the supervisor once during the preparation of a thesis work or diploma work.

<sup>&</sup>lt;sup>1</sup> The guide also applies to the MSc Computer Science Engineering subjects titled Thesis I, II, III, IV as specified in the guide.

In case of Applied Mathematics MSc, the subjects Thesis work I, II shall be equivalent to the guide of Thesis I, II,

#### 2. Subject requirements

- 1. Development of the worksheet
- 2. Developing the detailed table of content and work plan
- 3. Processing and description of the special literature, drawing conclusions
- 4. Production of the plan, program, equipment serving as a basis for the thesis/thesis work, testing the system, evaluation of the results, etc.
- 5. Complete fulfilment of the task items in the thesis description

Items 1-3 of the requirements refer to the subject titled Thesis I, while items 4-5 to the subject titled Thesis II (items 1 to 5 in case of a change of topic). Any deviation from item 5 requires special permission by the supervisor and the director of the institute.

In case of thesis subjects, item 1 is applicable to the subject titled Thesis work I, and the actual work (items 2-5) shall be carried out within the scope of Thesis work II, III, IV.

#### 3. Tasks, parties responsible and deadlines

Responsible for organising and supervising thesis and thesis works:

Graduation group (by informing the subject leader, specialisation coordinator and supervisor(s))).

The thesis and thesis work topic summaries are kept by the Graduation Group, while the specialisation coordinator is responsible for organising the reporting with the support of the coordinators.

## 1) Submission of thesis/thesis work topics to the Graduation group (applicable to Thesis I and Thesis work I)

The submission of the topics goes on: <a href="https://nik.uni-obuda.hu/temaleadas/temabejelento/">https://nik.uni-obuda.hu/temaleadas/temabejelento/</a>

Deadline: Thesis: Friday of the 3rd week of the study period<sup>2</sup>. Deadline:

Thesis work: Friday of the 7th week of the study period.

Parties responsible: students / internal supervisors

Provision of data: Graduation group

Note: The deadline specified may be derogated from (by a

maximum of 1 week) only in highly justified cases, by way of an individual request. In case of failing to meet the deadline,

the subject will be deleted.

<sup>&</sup>lt;sup>2</sup> In case of Thesis work 2 and 3, on occasion of a justified (and authorized) topic change, the deadline is also the Friday of the 3<sup>rd</sup> week of the study period!

#### 2) Thesis/Thesis work description (worksheet)(for Thesis I and Thesis work 1)

The worksheet is produced (according to Annex 6) by the internal supervisor.

Deadline: Thesis I: Friday of the 7th week of the study period.

Deadline: Thesis work I: last week of the study period.

Parties responsible: student and supervisor(s)

Provision of data:

• director of the institute (signs the worksheet)

• Graduation group (collects, records and stores the signed worksheets)

Note: The deadline specified may be derogated from (by a

maximum of 1 week) only in highly justified cases, by way of an individual request. Any failure to complete the worksheet by week 7 shall result in the disablement of the subject titled

Thesis I/Thesis work I.

## 3) Submission of the requirements for Thesis I, Thesis work II and III by the end of the study period

The student, led by the (internal and external) supervisor, works on the topic until the end of the study period.

The student uploads the following to the designated task (in Moodle system) by 23:59 Friday of the week 14:

- a written summary of their work (min. 15-20 pages<sup>3</sup>) (not including the cover, the worksheet and the consultation logs) following the formal requirements of preparing the thesis/thesis work (see Annexes),
- the consultation log, with the supervisor's proposal, whether the student is recommended for reporting (see Annex 9),
- the presentation of the student's work.

During the first week of the exam period, the (internal and external) supervisor form their opinion and decide whether the student can be booked for reporting within the scope of Thesis I / Thesis work II and III.

#### Deadline:

- last week of the study period (student)
- first week of the exam period (supervisor)

Parties responsible: student and internal supervisor

Note: Failure to meet these requirements shall entail the prohibition

of the subjects titled Thesis I. / Thesis work II, III.

#### 4) Thesis I / Thesis work II, III topic reports

The Graduation group is informed about students meeting the pre-requisites.

The heads of specializations prepare the schedule of the reports together with the coordinators.

<sup>3</sup> In case of Thesis work II, III it is expected to extend the work submitted in the previous semester by min. 10-15 pages!

Date of reporting: the  $2^{nd}$  weeks' Friday of the examination period (in a justified case, the opportunity to make up for is the  $3^{rd}$  weeks' Friday of the examination period).

Date of reporting in case of Thesis work II, III: the 3<sup>rd</sup> weeks' Friday of the examination period (in a justified case, the opportunity to make up for is the 4<sup>th</sup> weeks' Friday of the examination period).

The report is delivered before a committee of 3 members, with the (internal and external) supervisor being invited. The committee decides whether the student is granted the mid-term mark.

Deadline: second and third week of the examination period

Parties responsible: head of the specialization, BSc and MSc coordinators

#### Subjects titled Thesis II / Thesis work IV

#### Semester 7 (BSc) / Semester 4 (MSc) according to the model curriculum

#### 1) Writing the thesis / thesis work

Deadline: 14<sup>th</sup> week of the study period.

Parties responsible: student and supervisor(s). The internal and external

supervisor propose submission by their signature.

### 2) Plagiarism check in the completed thesis / thesis work and designation of referees

The thesis/thesis work to the Thesis work portal have to be uploaded in the fall semester until 15<sup>th</sup> December, in the spring semester until 15<sup>th</sup> May.

The supervisor will then immediately upload the work to the plagiarism check system.

The supervisor - with the result of the plagiarism detection software "The thesis is ready for refereeing." signs it and forwards it to the Graduation Group, at the same time proposing the person of the referee. Deadline: 20<sup>th</sup> December for the fall semester and 20<sup>th</sup> May for the spring semester.

The referee proposed by the supervisor is requested by the competent head of institute to review the thesis/thesis work.

Deadline: five weeks before the planned date of the final examination.

(If the thesis/thesis work is submitted at a later date, the student may only take part in a final examination held in the

next semester.)

Parties responsible: head of institute and internal supervisor

### 3) Completion of the consultation log of the thesis / thesis work (see Annex 9)

Deadline: end of semester, at the same time with submitting the thesis

/thesis work

Party responsible: internal supervisor

#### 4) Review of the thesis / thesis work

Deadline: tenth working day before the final examination

Parties responsible: internal supervisor and referee

#### Completion of the subjects titled Thesis I /Thesis work II, III

a) Completion by student:

Deadline: the student uploads the following to the designated task (in Moodle system) on the 14<sup>th</sup> week of the study period:

- a written summary of their work (min. 15-20 pages) following the formal requirements of preparing the thesis/thesis work (see Annexes),
- the consultation log signed by his/her supervisor (see Annex 9) and a presentation of the student's work.

Party responsible: student

#### b) Completion by teaching staff:

The internal and external supervisors assess whether the student's work can be submitted for report and certify it by their signature.

Deadline: first week of the examination period

Parties responsible: internal and external supervisor

c) Administration of completion:

The Graduation group summarizes the works submitted electronically (works, consultation log, presentation, supervisor's signature).

Head of the specialization, together with the coordinators:

- by the second week of the examination period prepare the preliminary schedule of Thesis I / Thesis work II, III, including:
  - classroom designation;
  - o arrangements for the committee to report to:
- summarize assessments;
- the BSc and MSc coordinators send to the Graduation group the list of students with their results to enter the results in the NEPTUN system.

#### Completion of the subjects titled Thesis II / Thesis work IV

a) Completion by student: submission of the thesis/thesis work and its attachments

Deadline: thesis /thesis work submission deadline

Party responsible: student

#### b) Completion by teaching staff:

The internal supervisor certifies by their signature the student's work related to their thesis/thesis work, and produces a consultation log for Thesis II / Thesis work IV (see Annex 9).

Deadline: the last day of the study period in the current semester

Party responsible: internal supervisor

#### c) Administration of completion:

The internal supervisor enters the results of the subjects titled Thesis II / Thesis work IV to the NEPTUN study registration system.

Deadline: last day of the study period in the current semester

Party responsible: internal supervisor

## II. Form and content requirements of the thesis / thesis work

General requirements

Purpose of completing the thesis / thesis work:

The purpose of completing the thesis /thesis work to solve a complex task of computer science engineering generally in line with their specialization at the end of their study period, by which they prove to have the professional knowledge and skills meeting the requirements specified in the training objectives.

The thesis / thesis work task enables students to carry out independent creative work and to present their knowledge on substantial correlations between the parts of their specialty as well as on the practical technical and economic requirements related thereto.

A thesis / thesis work topic can be:

- external origin. In this case, an external institution or a private individual proposes a task to be solved in the thesis /thesis work and a student to work out such task. It is mandatory to have an internal supervisor associated with such topic on behalf of the faculty! External topics are also published on the website. The internal supervisor decides on the acceptance of the application, taking into account the opinion of the external institution or individual on the application.
- university (internal) origin. In this case, a professor at one of the institutes of the
  faculty makes a proposal regarding the problem to be solved on the basis of their
  knowledge of the industry and their individual professional interest. Topics of
  university origin can be found on the faculty website, students can choose from
  topics. The teacher decides whether the application is accepted.

Acceptance of the thesis / thesis work:

Students are required to defend their thesis / thesis work before the Final Examination Committee. The final mark of the thesis / thesis work is determined by the Final Examination Committee considering the supervisors' evaluation.

Thesis / thesis work structure

The thesis / thesis work consists of 40–60 pages (max. 80 pages by including annexes).

As regards the wording of a thesis / thesis work, due care is required to be taken for the proper use of professional technical terminology in Hungarian (in English). Superfluous abbreviations and terms pertaining to the professional jargon are required to be avoided (abbreviations have to be specified at the beginning or at the end of the study). Efforts should be made to produce a professional composition, which is readable and easy flowing at the same time. Spelling errors considerably deteriorate the quality standard of the work.

The method of referencing is set out in Annex 1.

The proposed thesis/thesis work structure is provided in Annex 3. Compliance with the proposal is recommended, but in a justified case, thesis / thesis works may derogate therefrom.

#### Typography requirements

(Sample, template)

The thesis /thesis work is required to be produced in an A4 format. Recommended page layout data are as follows: margin settings are 40 mm at the bottom, 25 mm at the top and at outer edges, and 35 mm on the side of the binding (because of being bound), with page numbering at the bottom, centered or 20 mm from the edge of the page.

The recommended font type of the text is Times New Roman, the recommended size is 12 points, with a recommended spacing of 1.15 rows, in a justified format. The text should be divided as appropriate.

The titles of chapters should be numbered using Arabic numbers; they are recommended to consist of capitals of 14 point size, aligned to the left, on the top of the page. The titles of subchapters should be numbered down to three digits as a maximum, using 12 point bold characters, aligned to the left, with one row before and after them.

The formal requirements described above apply to the use of other word processing software products (e.g. LaTex) as well.

#### The following front pages are mandatory:

- Inside cover page (Annex 5)
- Worksheet (Thesis /Thesis work description) (Annex 6)
- Student's declaration (Annex 7)
- Consultation logs referring to the subjects titled Thesis I and II / Thesis work II, III, IV (Annex 9)

#### Submission requirements

The thesis /thesis work is required to be submitted in two forms, in 1 copy each: **Bound** and electronically uploaded to the Thesis work Portal.

#### Binding the thesis / thesis work

The thesis /thesis work to be submitted is required to be bound in hard black (imitation leather) cover, with data in gilded letters (as per Annex 4). It is mandatory to indicate the name and the year on the spine of the book!

#### Declaration to be submitted

Student's declaration (A

#### Supervisor and referee tasks

- The internal supervisor is supposed to formulate the task and requirements of the thesis /thesis work (to complete the Worksheet (thesis /thesis work description), and in addition to professional assistance to monitor progress in solving the task and compliance with formal requirements.
- **The external supervisor is supposed to** assist the professional part of the work. The external supervisor is approved on proposal by the internal supervisor by the director of the institute, at the latest by signing the worksheet.
- The referee is supposed to review the thesis /thesis work, and to make a proposal for the mark of the work. The referee will be given by the internal supervisor on the Thesis Work Portal, after approval by the Director of the Institute.

#### III. Annexes

#### References

#### Referencing

It is an obligation to respect copyright and to make precise references.

Any failure to make references is deemed as plagiarism – a serious offence by the unlawful appropriation of intellectual creations (Study and examination regulations, Section 55 and Rules of Procedure of Studies, Annex V/7)

It is imperative to precisely adhere to the rules of referencing as inaccurate or deficient references make it difficult or impossible to find the book or periodical referred to.

#### **Recommended method of referencing:**

It is recommended to provide serial numbers to the references arranged in alphabetical order according to the first author. References within the text are expedient to be specified by the serial number in square brackets ([n]) of the article or book referred to in the references, directly before or after the quotation. Literal quotations are required to be put inside quotation marks.

#### References made to books:

Author(s): Title of the work. *Publisher*, Year of publishing

The author's surname is required to be followed by a comma, and the initial(s) of their given name(s) by a full stop. In case of several authors, there should be a comma between the authors. The title of the book is followed by a full stop. The Publisher's name is provided in italics, with a comma at the end. The Publisher's name is followed by the year of publication.

#### Examples:

- [1] Mérő, L.: Észjárások. A racionális gondolkodás korlátai és a mesterséges intelligencia. *Akadémiai Kiadó, Optimum Kiadó*, 1989
- [2] Narendra, K. S., Thathachar, M. A. L.: Learning Automata: An Introduction. *Prentice Hall*, 1989
- [3] Pearl, J.: Heuristics: Intelligent Search Strategies for Computer Problem Solving. *Addison Wesley*, 1984

#### **References made to periodicals:**

Author(s): Title of the article. *Title of the periodical*, Volume number (and serial number) of the periodical, Year of publication, The beginning and end pages of the article, divided by a hyphen.

#### Examples:

- [4] Bencze, G., Garami, P.: A japán ötödik generációs számítógéprendszer vázlatos áttekintése. *Információ Elektronika*, Vol. 2., 1983, 65–70. old.
- [5] Sántáné-Tóth, E.: Survey of Hungarian KBS tools and applications in the engineering field. *Engineering Applications of Artificial Intelligence*, Vol. 46. 1991, pp. 409–416.

[6] Sutton, R. S., Barto, A. G.: Toward a modern theory of adaptive networks: Expectations and predictions. *Psychological Review*, Vol. 88., 1987, pp. 135–171.

#### References to sources from the internet:

The date of downloading also needs to be specified besides the URL.

Example:

[7]Csink, L.: Gráf algoritmusok,

(http://nik.uni-obuda.hu/csink/ga.ppt), last viewed: 12.01.2011.

#### Figures and graphs

It is expedient to start the numbering of figures and tables from 1 in each chapter (e.g. Figure 6.1, Table 5.2). References need to be made to figures and tables in the text. Each figure and table should have a (concise) title.

#### Figures, graphs and tables can be

- edited by an application,
- high-quality copies (attached as annexes).

#### Usual placement methods of figures and tables

- within the text, by leaving a blank space on both sides of a figure of less than the full page width,
- inserted between sheets of text, as a full-sized sheet,
- collected at the end of the thesis /thesis work and bound,
- A3 or larger-sized figures, programs and other documentations: folded in a pocket within the back cover (in this case the figure should be framed, provided with a text box indicating the title of the study, the description and serial number of the figure, the name of the student, and the serial number of their thesis / thesis work).

Any other different, clear and aesthetic designs not contravening standards and deemed to be appropriate by the supervisors can be accepted.

#### Proposed thesis / thesis work structure 4

The following front pages are mandatory:

- Inside cover page (Annex 5)
- Worksheet (Thesis /thesis work description) (Annex 6)
- Student's declaration (Annex 7)
- Consultation logs referring to the subjects titled Thesis I and II / Thesis work II, III, IV (Annex 9)
- **1.** Contents (with page numbering included) (compulsory)
- **2.** Short abstract of the topic field and the task (compulsory)<sup>5</sup>
- **3.** Formulation of the problem to be solved
- **4.** Importance and presentation of the problem (Introduction)
- **5.** Review and analysis of possible approaches and solutions based on the references
- **6.** Selection of the method for solution, including the reasons for such selection
- **7.** Description of the detailed specification
- **8.** Description of the work phases and experiences in the course of design
- **9.** Description of implementation
- 10. Testing
- **11.** Presentation and evaluation of the results, comparisons with the results of similar systems
- **12.** Analysis of implementation, taking account of its application and improvement potentials
- **13.** Abstract of the degree project in Hungarian and English (compulsory)
- **14.** References (compulsory)
- 15. Annexes

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<sup>&</sup>lt;sup>4</sup> In the thesis /thesis work, points 1 to 3 are not provided with chapter numbers. The numbering of chapters starts with the Introduction!

<sup>&</sup>lt;sup>5</sup> In case of thesis work, it is compulsory to have an abstract both in Hungarian and English!

#### **Binding pattern**

<u>Binding of the thesis/thesis work</u>: hard black cover (of imitation leather binding), filled in by gilded lettering, based on the following fully dimensioned sample.

(Font type: Times New Roman, perhaps Avangard)

It is mandatory to indicate the name and year on the spine of the book!

## **THESIS**

## THESIS WORK

OE-NIK 20.. GIPSZ, JAKAB T-000123/FI12904

#### NEUMANN JÁNOS FACULTY OF INFORMATICS

Annex 5

## **THESIS**

## THESIS WORK

**OE-NIK** Student's name:

**20..** Student's registration number:

Gipsz, Jakab

T-000123/FI12904

Óbuda University	
Neumann János Faculty of Informatics	
Institute of	

## THESIS or THESIS WORK DESCRIPTION

Student's name: Registration number:	<b>Gipsz,</b> )	<b>Jakab</b> NI-02-33
-		garak hatása a százszorszépekre of gamma rays on moonflowers
Internal supervisor: External supervisor:	X Y	
External supervisor.	1	
Submission deadline:		
Subjects of the final exa	nination:	

The task:	
The study is required to include the following:	
1	
2	
3	
4 5	
L.S.	
This specification is valid until: (According to OE TVSz 55 §).	Head of Institute
I consider the thesis suitable for submission:	
external supervisor	internal supervisor
external supervisor	iiitei iiai supei visti





#### STUDENT'S DECLARATION

I the undersigned student hereby declare that this <u>degree project / thesis</u> is the result of my own work; I have disclosed the references and tools used in an identifiable manner. The results indicated in my <u>degree project / thesis</u> completed may be used by the university and the institution announcing the task for their own purposes free of charge.

Dated: Budapest,	20
	student's signature

Annex 8

#### Information on non-disclosure agreements

In a highly justified case, when required by the topic of the thesis/thesis work, the external partner may initiate the classification of the thesis/thesis work as confidential **at the time of announcing the topic (week 7)** in the form of a request addressed to the Vice Dean for Education but submitted to the Registrar's Office, which includes a detailed presentation of the reasons why the Degree project / thesis is requested to be classified as confidential.

In such case, the following shall be submitted together to the Registrar's Office:

- the student's request to have the degree project / thesis classified as confidential, having regard to the external partner's opinion, and
- the external partner's request, duly signed and sealed, which includes the reasons and information in view of which the degree project / thesis is requested to be classified as confidential.

Before such request is assessed by the Vice Dean for Education, the degree project / thesis may not be considered confidential.

#### Neumann János Faculty of Informatics Annex 9

#### **CONSULTATION LOG**

Studen	t's name:	Neptun code:	Specialty:	
	number:	Mailing address (e		
Thesis		title in Hungarian:		
Thesis	/ thesis work <sup>2</sup>	title in English:		
Interna	l supervisor:		rnal supervisor:	
Please	write the data	in printed capital letters!		
	Date	Content		Signature
1.				
2.				
3.				
4.				
of cons	ultation.	s required to be countersigned		
Thesis	_	ied with the requirements of t work II / Thesis work III / The defense <sup>4</sup> .		
Dated:	Budapest,	20		
				al supervisor

Underline as appropriate
 Underline as appropriate
 Underline as appropriate
 Underline as appropriate