

## ORGANIZATION CRITERIA FOR THE MASTER THESIS

### MASTER PROGRAM ON TELEMATICS ENGINEERING

(approved January 2015)

This document describes the academic organization criteria for the MSc Thesis (TFM) of the Master on Telematics Engineering, following the basic framework provided by the University to organize the TFM (see

[http://www.uc3m.es/ss/Satellite/UC3MInstitucional/es/ListadoNormativas/1371206706673/Estudios\\_de\\_Postgrado](http://www.uc3m.es/ss/Satellite/UC3MInstitucional/es/ListadoNormativas/1371206706673/Estudios_de_Postgrado)).

#### Possible contents of the TFM

A TFM is a scientific work on Telematics Engineering with a nominal load of 15 ETCS. This work is normally the first relevant R&D experience that the student must complete; among other activities, the student will synthesize knowledge acquired during the master, so it is particularly important to achieve the maximum professional accuracy in its presentation, resolution and writing.

This work must include the motivation for the problem that is going to be solved, a review of the state of the art, a critical evaluation of the different alternatives found in the state of the art and a description of the solution that is defended by the student, together with the methodology applied to solve the problem.

Once the work is finished, the student will have demonstrated that she/he is able to develop a contribution in the academic scientific field on her/his own, applying the knowledge acquired through the different Master courses as well as present it and defend it in front of an experts committee.

#### Enrolment

The enrolment for the TFM course will be done according to the procedures established by the University. For this Master program, the enrolment does not have to be done at the beginning of the course, but it is mandatory to do it at least two months before the beginning of the evaluation period chosen to defend the thesis. Although the TFM belongs to the second semester, it will be possible to do the enrolment during the first semester and in any case the student must only choose one out of the three available evaluation periods (around February, June and September).

#### TFM and director assignment

The students must send an email to the Master Academic Commission ([mtecommission@inv.it.uc3m.es](mailto:mtecommission@inv.it.uc3m.es)) during the first 15 days of the first month of the period in which the defense will be held (September for the first period and February for any of the two

second period calls) the following information: TFM title, TFM director and call (1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup>) in which the thesis will be defended.

The Academic Commission of the Master will assure that the offered TFM by the program or the directions for the TFMs proposed by the students themselves are enough so as to allow all the students enrolled in the course to have a proper assignment.

### **TFM template**

The format and presentation of the TFM is expected to be the one of a regular conference submission, including the length and the innovative contribution of the author.

There is not a particular format or template for the written document. The student can chose the most convenient format for her/his work.

The cover must follow the model included in Annex I.

### **Group sessions in the classroom**

Due to its individual nature, the TFM includes a unique formative activity which is based on autonomous work supervised by the director, including the study of the state of the art, evaluation and research of the required tools to solve the problem.

There will be no group sessions in the classroom assigned to this course in the Master program.

### **Defense**

At least one month before the beginning of the evaluation period (one of the three available periods) where the defense will take place, the student will notify about this fact by email to the Master Academic Commission ([mtecommission@inv.it.uc3m.es](mailto:mtecommission@inv.it.uc3m.es)) using the form included in Annex III.

In case no defense is explicitly requested for a certain period, the student will not be assigned to any Evaluation Committee and will not be able to defend her/his work in that call.

When the request for defense period of the last call of the course expires, all the students that have not requested their defense will be considered as 'not presented' and will have to enroll themselves again in the next academic course.

### **Evaluation committee**

The evaluation will be performed by a committee composed by three experts that will judge the written work, the oral presentation and the defense.

The committee will evaluate up to 5 students and there will be at least one committee per master track (AST and RYSC). In case there are more than 5 students in a particular call for a certain track, there will be as many committees as required so that all the students can be evaluated (in groups of up to 5 students).

The Academic Commission will notify about the different committees, the students assigned to each committee and the corresponding defense dates at least two weeks before the beginning of every evaluation period.

### **Documentation**

At least ten days before the date of the defense, the student will present in the Oficina de Postgrado of the campus according to the corresponding procedures, an electronic copy of the memory. The written work will follow Annex I in order to organize the cover page.

In addition, the director of the TFM will send to the Academic Commission by email ([mtecommission@inv.it.uc3m.es](mailto:mtecommission@inv.it.uc3m.es)) a form including her/his recommendation for the defense, that will be sent by the Commission to the Evaluation Committee and will be used to evaluate the TFM and part of the evidences during the evaluation process (see Annex II).

### **Public defense**

The student must be present at least 15 minutes before the hour specified for her/his defense with an official personal identity document (DNI, driving license, passport, etc.). The call will be done for all the students at the same time, at the starting hour specified for the session. The committee will decide about the presentation order of the different students.

Once the session is ended, if any of the students have not been present or identified at the initial time, another call can be done if the committee decides to do so.

In case the student is not showing the day of the defense (or is not able to certify her/his identity) the committee will evaluate the work as “not presented”.

The student will have a maximum of 25 minutes for the oral presentation where she/he will summarize the state of the art, the different concepts and the main contributions of the work. After that the committee will be able to ask questions for a maximum time of 25 minutes.

The evaluation of the TFM will be done according to the evaluation matrix in Annex IV (the evaluation co. As a requirement, the work must include the motivation for the problem that is going to be solved, a review of the state of the art, a critical evaluation of the different alternatives found in the state of the art and a description of the solution that is defended by the student or the methodology followed to solve the problem.

**ANNEX I: Cover model for the TFM**



Universidad  
Carlos III de Madrid

Master on Telematics Engineering  
Academic Course 201X-201X

*Master Thesis*

“Title”

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Name Surname1 Surname 2

Director/s

Name Surname1 Surname 2

Name Surname 1 Surname 2

Place and date of defence

Keywords: include the keywords that define the content of the work.

Summary: small summary of the content (150 words max.).



[Include in case there is interest to publish it in open archive] his work is under  
Creative Commons license– NonCommercial –NoDerivates

## ANNEX II: Master Thesis director's report

**MASTER THESIS TITLE:**

### 1.- STUDENT

**NAME AND SURNAME:**

**DNI:**

### 2.- DIRECTOR

**NAME AND SURNAME:**

The director of the previously mentioned Master Thesis considers that its quality is

- Very good**
- Good**
- Sufficient**
- Insufficient**

ADDITIONAL COMMENTS

(mandatory in case of insufficient quality)

In \_\_\_\_\_, \_\_\_\_ of \_\_\_\_\_ of 20\_\_

Director's signature

## ANNEX III: Masther thesis director's report

### CALL FOR MASTER THESIS PRESENTATION

#### 1.- STUDENT

SURNAME, NAME:		DNI/PASSPORT:
MÁSTER UNIVERSITARIO EN INGENIERÍA TELEMÁTICA		
OPTION:	<input type="checkbox"/> AST	<input type="checkbox"/> RYSC
DEFENSE PERIOD:	<input type="checkbox"/> FEBRUARY	<input type="checkbox"/> JUNE <input type="checkbox"/> SEPTEMBER

MASTER THESIS TITLE
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#### 2.- DIRECTOR

SURNAME, NAME:
DEPARTAMENT:

### ANNEX IV: Evaluation matrix

	<b>Unacceptable</b>	<b>Acceptable</b>	<b>Target</b>	<b>Outstanding</b>
<b>Statement of the research problem:</b>	The problem or issue being addressed is not articulated in a clear way. There is no convincing argument about why the topic is timely or relevant. The significance of the problem is not established. There is no clear research question.	The problem or issue is addressed with some degree of clarity, but without a fully compelling, convincing argument about why this research is worthy, timely, and significant. A research question is stated.	The problem or issue is addressed with clarity. An argument about why this research is relevant is provided. A research question is clearly stated.	The problem or issue is addressed with both clarity and conviction. A strong, convincing argument is made about why the research is worthy, timely, and significant. A focused research question is clearly articulated.
<b>State of the art review:</b>	There are obvious references missing. The review is not organized and the references are not related to the addressed topic. The review does not show any point of controversy existing in the literature and it does not offer a summary of the state of the art.	The review includes references covering most of the relevant approaches related to the addressed topic. If there are some references missing, they are not critical regarding the proposed approach. The controversy in the existing approaches may be inferred from the review.	The review covers the existing approaches on the addressed topic. The summary of the review clearly shows the existing controversy and the approach taken can be easily justified from it.	The review covers the existing approaches on the addressed topic. The summary of the review clearly shows the existing controversy and ends up with a sound justification for the approach taken.
<b>Original contribution</b>	The work does not provide any contribution to the area of study. It neither proposes a solution to the problem at hand, nor employs any novel methodology to study the problem. The work would not be accepted for publication in any peer-reviewed journal or conference.	The work provides a minor contribution to the area of study, for instance by applying a well-known solution in a new context, or proposing a small modification to a previously existing solution or analysis methodology. The work could be accepted in a PhD workshop.	The work proposes an original contribution to the area of study. Such proposal may be considered original because, for instance, it solves a previously unsolved problem, it significantly improves its resolution or provides a completely new analysis viewpoint. The impact of the proposed solution may be limited to the problem at hand. The work could be accepted in a research conference.	The proposed contribution is clearly novel and original, effectively solving the proposed problem, and groundbreaking in the sense that it may have a great impact in the area of study or could be even applied to other domains. The work could be published in a journal or top conference.
<b>Evaluation of results</b>	The work suffers from at least one of the following defects: it does not include any kind of evaluation of its contribution; the evaluation methodology is largely inadequate; the results of the evaluation are completely misinterpreted or largely overstated; the evaluation is manipulated with the aim of deception.	The work includes a weak evaluation of its contribution, in the sense that: the evaluation methodology is not very adequate, a significant part of the contribution is left out of the evaluation, the evaluation scenario is unreasonably simplified, the proper statistical techniques are not applied in situations in which they should, part of the results are misinterpreted or, being it feasible, the solution is not compared to any competing solution.	The work includes a reasonably sound evaluation, adequate for an average conference, although some details might be improved. The evaluation methodology is adequate. The full contribution or most of it is evaluated. The evaluation scenario makes reasonable assumptions. The proper statistical techniques are applied if necessary. The results are correctly interpreted. There is an empirical comparison to relevant competing solutions if feasible.	The work includes a thorough and sound evaluation, at the level required for a journal or a top conference. The methodology is completely adequate. The full contribution is evaluated. The evaluation scenario is as realistic as feasible. The proper statistical techniques, if necessary, are applied. Results are correctly interpreted. There is a sound empirical comparison to the most relevant competing solutions if feasible.
<b>Document presentation</b>	Some section is missing. The document is hard to read, and presents a large number of errors or grammar issues.	In spite of few typos or grammar errors, the document is readable.	The presentation follows a logical order with figures or tables which helps the reader to understand the document.	The document is written in a good style. Formulae, figures and tables are labelled, referenced and explained in the text. The document is easy to read.
<b>Defense</b>	The presenter just read the slides. The presenter did not answer the questions and showed ignorance about nuclear parts of the topic addressed	The presentation clearly showed most of the work done, though some major point was not fully addressed. The presenter was not convincing: going too fast at some points and not answering the related questions afterwards.	The presentation was clear though some minor aspect was not fully addressed (either in the presentation or in the questions afterwards). The presenter style showed room for improvement.	The presentation was completely clear. The presenter captivated the audience.
<b>Director's report</b>	Insufficient (see director's report)	Sufficient (see director's report)	Good (see director's report)	Very good (see director's report)

	<b>Unacceptable</b>	<b>Acceptable</b>	<b>Target</b>	<b>Outstanding</b>
<b>Statement of the research problem</b>	0	0.5	0.8	1
<b>State of the art review</b>	0	0.5	0.8	1
<b>Original contribution</b>	0	1	1.6	2
<b>Evaluation of results</b>	0	0.5	0.8	1
<b>Document presentation</b>	0	0.5	0.8	1
<b>Defense</b>	0	1	1.6	2
<b>Director's report</b>	0	1	1.6	2



### ANNEX V: Evaluation matrix

Student name:

Master thesis title:

Director:

Date:

	Unacceptable	Acceptable	Target	Outstanding
<b>Statement of the research problem</b>				
<b>State of the art review</b>				
<b>Original contribution</b>				
<b>Evaluation of results</b>				
<b>Document presentation</b>				
<b>Defense</b>				
<b>Director's report</b>				
<b>TOTAL</b>	_____ <b>points</b>			

Evaluation committee:

Name

Signature

Name

Signature

Name

Signature