



**UNIMORE**  
UNIVERSITÀ DEGLI STUDI DI  
MODENA E REGGIO EMILIA

Department of Science and Methods for Engineering

N 871 /2017

**CALL FOR APPLICATIONS**  
**POST GRADUATE COURSE**  
**“SOUND ENGINEERING”**

**Academic Year 2017/2018**

**GIVEN THAT**

- The Statute of the University of Modena and Reggio Emilia, issued by Rectoral Decree no. 3 of 6 February 2012, Prot. 1788 published in “Gazzetta Ufficiale della Repubblica Italiana” n. 45 of 23 February 2012;
- Ministerial Decree n. 270 of 22nd October 2004 “Modifications to the Regulations for provisions concerning the didactic autonomy, approved by Decree no. 599 of 3<sup>rd</sup> November 1999 of the Ministry of universities and Scientific and Technological Research published in G.U. n. 266 of 12 November 2004;
- Ministerial Decree 9 July 2009 on the equivalence between degrees of the old system, advanced degrees and master's degrees;
- Inter-Ministerial Decree 11 November 2011, published in the G.U. n. 44 of 22/02/2012 on the equivalence of diplomas of the schools directly for special three-year established pursuant to Presidential Decree 162/1982 , and University Diplomas three-year established pursuant to Law 341/1990 , to the degrees of the classes DM 509/1999 and Ministerial Decree of degrees of classes 270/2004 , for the purpose of participation in public competitions ;
- the University Didactic Regulations;
- The University Regulations governing University Masters and Postgraduate courses, professional refresher courses and courses preparing for state exams for qualification to enter professional practice and for competitive state examination;
- Bill prot. n. 17188 of 13 November 2009 "Ministry of Education, University and Research, Department of Education , General Management for school staff , Office III , about compatibility between university courses ;



- the note n. 602 of 18th May 2011, of the Ministry of Education, Universities and Research (MIUR), having as its object the registration of EU and foreign students at Italian public and private universities authorized to issue legally valid qualifications;
- Art. 15 of Law 12 November 2011, n. 183 , " Rules on certificates and affidavits " ;
- D.P.R. of 28 December 2000, n. 445, containing the "Consolidated text of laws and regulations on administrative documentation" ;
- Art. 32 of the Law of 18 June 2009, no. 69 , "Disposing of waste relating to the maintenance of documents in paper form";
- the deliberations of 26 September 2017 and 29 September 2017 during with the Academic Senate and the University Management Board each approved the institution and activation of the Postgraduate Degree for the Academic Year 2017/2018;

## DECREES

### ARTICLE 1 – Institution

The University of Modena and Reggio Emilia activates, in accordance with ministerial Decree (“DM”) No. 270 of 22/10/2004, for the Academic Year 2017/2018, the following Postgraduate Degree in “Sound Engineering”

MINIMUM NUMBER OF AVAILABLE PLACES	MAXIMUM NUMBER OF AVAILABLE PLACES	TOTAL ENROLMENT FEE
5	40	€ 750 <sup>1</sup>

<sup>1</sup> The sum includes the annual fees pro capite, paid by students, relating to the “Personal Accident” insurance policy and the “Liability for third parties and staff” insurance policy.



## **ELIGIBILITY REQUIREMENTS**

Applicants with the following qualifications can apply for the Postgraduate Course:

- All Bachelor Degree attained in accordance with D.M. no. 270 of 22nd October 2004;
- All Bachelor Degree attained in accordance with D.M. no. 509 of 3<sup>rd</sup> November 1999;
- All Degrees attained in accordance with the rules previously in force under Ministerial Decree (DM) no. 509 of 3<sup>rd</sup> November 1999.
- High-School Diploma with proven experience in the sector, previous evaluation of the curriculum vitae by the Selection Board.

Applicants without the above-mentioned requirements can apply as auditors by filling out the application form.

The Department will send by email ([soundengineering@unimore.it](mailto:soundengineering@unimore.it)) the application form to the applicants, handle to directly communicate the acceptance of their applications and give them some information about the location, the schedule and the tuition fee of the course.

**Deadline for submission of applications is March the 09<sup>th</sup>, 2018 at 13.00 p.m**

### **Professional profile the course intend to provide:**

The course aims to provide theoretical and practical knowledge in the field of the technology of sound engineering, with reference to the state of the art in the sector.

### **Educational objectives:**

The objective of the course is to provide fundamental theoretical knowledge for the comprehension, analysis and design of modern sound diffusion systems. Such knowledge ranges from the fundamental principles of acoustics, to transducers and speakers, electronic amplifying systems and digital sound filtering, and also soundproofing systems.



The teaching include: Le attività formative oggetto del corso sono le seguenti:

- E-learning lessons;
- Lecture and two/three practical experience on lab during Acoustic, Electroacoustic, Electronics and Sound System modules.
- The teaching is organized into the four didactic modules described below, which include both theoretical lessons (the greater part of the course) and practical experience:

### 1) Acoustics

Introduction to acoustics: the nature of the sound, its generation, quantity, propagation, punctiform sources and cylindrical sources;

Psychoacoustics: sound levels and perception of sound, spectral composition, normal audiogram and weighting curves.

Acoustics of internal environment: reflection, transmission and absorption, temporal evolution of sound, reverberation, reverberation field and time (RT)

Acoustic of open spaces: effects of temperature, humidity and wind, diffraction, masking, acoustic air absorption.

### 2) Electroacoustics

Transducers: typology, static and dynamic characteristics; model for designing (Thiele-Small) and for the simulation of electro-mechanical properties; compression drivers and horn loading.

Loudspeaker system: typology, operation, materials and technology; concepts of bands and cross-overs, types of cabinet, directivity (dispersion curve) and characteristics of radiation

### 3) Electronics

Introductory concepts: electronic technology and devices (MOSFET, IGBT, SiC diode); signal amplifiers: topologies, efficiency, distortion, matching, feedback, stability and compensation.

D class Power amplifiers: topology, losses, modulation strategy and indexes of performance.

Digital signal processing: DSP: general characteristics, operation, processing and standby time basic and planning algorithms; digital filters (FIR-IIR); special filters for audio applications;

### 4) Sound systems

Speakers: audio chain, the speaker and amplifier system (audio processor and control)

Sound reinforcement system: multiband mixers; subwoofers, line arrays, digital steering arrays. Simulation software, models of mixers; radiation balloons

Design of sound reinforcement system: choice of mixers and their insertion based on the requirements of power and directivity; dimensioning and installation; design of a sound system using acoustic simulation.

**Course Director:** Prof. Emilio Lorenzani

#### Information:

Requests for information on didactic nature may be addressed to the Course Director, Prof. Emilio Lorenzani e-mail [soundengineering@unimore.it](mailto:soundengineering@unimore.it) tel. 0522/522443



**Duration and organization of the course:**

E-learning lessons will be available from the end of March 2018. The Lectures will be in English language and will take place from Monday May 14<sup>th</sup> through Friday May 18<sup>th</sup> 2018.

Lessons and practical experience will be held for the 75% in distance learning, in collaboration with University E-learning Center (CEA).

The Lessons will be held by RCF Audio Academy, Via Giovanni Bovio 2/I, Reggio Emilia (RE).

The course will conclude with a final test, consisting of a written examination on Friday May 18<sup>th</sup>, 2018 based on the technical contents of the course.

**Enrolment fee:** one instalment of € 750,00 payable upon enrolment.

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**Total hours:** 375 hours (of which 79 hours are lectures, 26 hours are alternative teaching and 270 are individual study).

**CFU (University Credits): 15**

**Teaching staff:** The teaching staff consists of members of the University of Modena and Reggio Emilia and well –reputed experts in sector.

**Method of selection:** by qualifications

The following qualifications will be evaluated:

- Academic qualifications;
- Curriculum vitae with work experience.
- Possible oral interview

**Selection Board:** Prof. Giovanni Verzellesi, Prof. Emilio Lorenzani, dott. Alessandro Manini, dott. Angelo Farina.

## ARTICLE 2 – Admission Requirements

Candidates in possession of an eligible qualification obtained in Italy specified in article 1 of this Call for Applications or holding equivalent academic qualifications from foreign universities may participate in the admission test, without limit as to age or citizenship.

Candidates who have a foreign qualification must provide valid documents for verification (Degree certificate with official grades, or a description of the Degree with a list of exams successfully taken. Refer to Annex B of this Call) to the Department of Sciences and Methods for Engineering (Via Amendola 2, Padiglione Buccola – 42122 Reggio Emilia (RE)), attaching the document to the application form in accordance to the procedure provided at Article 3.

Italian and foreign citizens in possession of a foreign academic qualification must, by deadline provided for enrolment set out by the regulations in force on the subject of enrolment of foreign students, present the following documentation:

- Academic qualification, translated and legalized by the Italian diplomatic mission (Embassy or Consulate) in the country in which the same was obtained.
- “Statement of Validity” (“dichiarazione di valore in loco”) obtained from the same mission.



For further information refer to [www.miur.it](http://www.miur.it) – University – Students – Foreign Students. The information provided by Candidates will be carefully checked by the competent offices for the purpose of verification of correctness.

Candidates are admitted to the selection procedure subject to verification of the aforementioned requirements.

### **ARTICLE 3 – Admission and Registration**

Applications for admission to the selection procedure and any other attachments (certificates and documents considered useful for the purposes of the selection process) must be submitted to this Administration, under penalty of exclusion, within the final deadline date stated in Article 1, solely using the following online procedure:

**Go to the website** "<http://www.esse3.unimore.it/Home.do>", or from the main University website page "<http://www.unimore.it> – (right menu list :ESSE3 )

If you do not possess an Italian Fiscal Code, click on “Registration” section to create one; then register by entering your personal details and details of your qualifications; you will then receive a username and password; If you do possess valid ID code then “Login” and insert Username and password. Then click on “Student Area”, follow “Admission” – “Enrolment” – “Postgraduate Degrees”.

All degrees and documents necessary for the selection process must be attached only in electronic format (Pdf or RTF) with a maximum size of 20 MB. Attachments larger than 20 MB will be divided into several parts.

**Payment of the fee must be done no later than the deadline date stated in Art.1.**

**The application form is meant fairly presented only with the rescue data ("Save the data") made after the "explicit confirmation of the validity of the application" given by the candidate at the end of the procedure mentioned above** (see "Guide to the application for admission" published on the University's website at [http://www.unimore.it/didattica/ StuLau-Perfez.html](http://www.unimore.it/didattica/StuLau-Perfez.html)). Please note, before officially submitting your application after the data will be saved ("Save Data") following the "explicit confirmation of the validity of the application", students will be able to modify data before the deadline date (consult the "Application Guide").

**For any technical inquiries, please contact [webhelp@unimore.it](mailto:webhelp@unimore.it)**

Emailing or faxing submissions of the application and its attachments are not permitted and will not be accepted.

Applications submitted in the appropriate procedure described above, will be considered to be on time only if they reach the Administration before the final deadline. Applications received after the deadline or received by means other than those listed above will not be considered.

During the online registration, candidates shall declare, under their own responsibility:

- a. Name and last name;
- b. Place and date of birth;
- c. Residential address; telephone/mobile number; email address (for the purposes of the admission);
- d. Fiscal code (if already in possession of one). Those without a Fiscal code will have to obtain one automatically generated for them by the system);



- e. Applicant's citizenship information;
- f. Declare to be in possession of the qualification required for admission to the program (Art. 1 "Access Requirements" of the Call), or an equivalent academic qualification from a foreign university;
- g. Exact name of the Master to which the candidate wants to be registered for;
- h. Curriculum vitae;
- i. Other title/degree certificates and any other documents;
- j. In the case of candidates with disabilities, in accordance with Law no. 104 of February 5, 1992, any kind of help necessary to support the examination.

By submitting the application for admission, the candidate agrees to:

1. Promptly communicate any change of address or telephone number;
2. Communicate their degree(s), with the list of exams taken, along with an Italian translation, legalization and "Statement of Validity" obtained by the Italian Consular in the territorial jurisdiction, subject to the existing rules on the admission of foreign students to degree courses at Italian universities, by the registration deadline. (For Italian or foreign citizen in possession of a foreign degree).

The exclusion of candidacy can be communicated to the candidate at any time due to lack of admission requirements. Applications submitted or received after the deadline, or in ways other than those specified in this Call will not be taken under consideration. The Administration assumes no responsibility in cases of loss communications due to incorrect address or failure or delay in notifying a change in contact details, technical errors or negligence of third parties, unforeseeable circumstances or force majeure. In addition, the Administration assumes no responsibility in the event of non-receipt of documents from third party negligence, as well as in the event of errors by the candidate in inserting attached files and/or in any case of network failure.

#### **Titles and Documents:**

For online registration procedure, candidates must attach the following with the application form:

- Self-certification of the access requirement (for candidates holding a degree obtained in Italy) under art. 46 and 47 of DPR 445/2000 using Annex A (found at the end of this Call);
- Titles and documents necessary for the assessment and corresponding list;
- Curriculum vitae in English;
- Copy of valid identification (ID card or Passport);
- Degree certificate with exams or description of the degree with a list of exams (for candidates holding a foreign degree). Refer to Annex B (found at the end of this Call).

In compliance with Article 15 of the Law dated November 12 2011, n. 183 it is stated that the certificates issued by the public administration related to countries, personal qualities and facts are valid and usable only in relations between private institutions/companies. When dealing with public administration and providers of public services certificates and acts of notoriety are always replaced by the statements referred to in Articles 46 and 47.

The certificates issued by the competent authorities of the State of which the foreign candidate is a citizen, must comply with the provisions in force in those countries and furthermore must be translated and legalized by the competent Italian consular authorities.

Documents written in a foreign language must be accompanied by a translation in Italian, certified true to the original text prepared by the competent Italian diplomatic or consular or by an official translator.



#### **ARTICLE 4 – Production and approval of the list of qualified candidates**

**The selection procedures and schedule of examinations are indicated in Art. 1.**

At the end of the selection process, the Commission will draw up the list of qualified candidates, based on the total score awarded to each candidate.

Candidates will be admitted to the program by the Director Department of Sciences and Methods for Engineering.

The list of admitted individuals will be published on the university website: <http://www.unimore.it> - Didattica - Master - Rankings allowed.

NO INFORMATION WILL BE PROVIDED BY TELEPHONE OR EMAIL.

**Enrollment in a Master is incompatible with enrollment in other courses, undergraduate, graduate postgraduate course, doctoral research, internship active (TFA) and another master degree programs.**

#### **ARTICLE 5 – Enrolment of successful candidates**

Within a maximum of twelve days starting on the day following the publication of the list on the website of the University, **candidates admitted according to the list of qualifying students shall enroll in the Master only in accordance with the following procedure:**

Candidates must login into the University website: <http://www.esse3.unimore.it/Home>. Select 'Login' and insert the username and password that were assigned to them at the time of registration for the admission phase. Those students already in possession of a username and password from the University of Modena and Reggio Emilia have to use them.

Candidates have to follow the instructions outlined in the Student Section: "Registration" - "Enrollment in courses with planned access ranking" (if you don't have username and password, send an e-mail to [webhelp@unimore.it](mailto:webhelp@unimore.it) for assistance);

Candidates admitted, according to the list of qualifying students, must confirm the information entered at the time of submission of the application and must print the following documents:

- a) Master registration form;
- b) Photocopy of the payment receipt for the enrolment fee referred to in Art .1.

Payment referred to the above mentioned point b) could be carried out:

- Online, by credit card Visa, MasterCard, Diners, American Express (refer to the "Guide to the application", point 3. "Completing Setup", published on the University website at <http://www.unimore.it/didattica/master.html> page).- At any UniCredit branch or at any other bank in Italy, using the form printed at the end of the online registration.

**Please note that payment of the first installment does not constitute as registration for the Master's.**

Registration is deemed to be completed when payment and all documents are delivered to the Department of Sciences and Methods for Engineering, Via Amendola 2 – Pad. Buccola 42122 Reggio Emilia (RE) no later than 12 days after the publication of the final list of qualifying candidates; applications received after such date will not be accepted. Applications may be send by registered letter with receipt, by DHL (please note that the relevant date will be the date of receipt of the package by the Department and not the shipment date) or direct delivery (during office hours: Mon-Tue-Thu-Fri: 10 am to 1 pm and Thu: 3:30pm to – 5 pm) at the Department of





Sciences and Methods for Engineering, Via Amendola 2 – Pad. Buccola 42122 Reggio Emilia (RE).

The following documents are to be sent:

- Registration form, printed from the Student Online system and duly completed and signed;
- Self-certification of the access requirement under Art.46 and 47 of DPR 445/2000 using Annex A (found at the end of the Call) for candidates holding a degree obtained in Italy;
- Degree certificate with exams or description of the degree with a list of exams (for Candidates holding a foreign degree), if necessary using Annex B (found at the end of this Call).
- Receipt of payment of the enrolment fee;
- Signed (front and back) photocopy of a valid identification document.

Applications made with incomplete documentation will not be accepted.

The University of Modena and Reggio Emilia will not be liable for any delays in delivery, lost mail or incomplete documentation.

**Italian or foreign candidates who have a foreign qualification must provide the Department of Sciences and Methods for Engineering by Fax at 0522/522312 or by e-mail: [soundengineering@unimore.it](mailto:soundengineering@unimore.it) the degree certificate with exams along with an Italian translation, legalization and "Statement of Validity" obtained by the Italian consular in the territorial jurisdiction.**

Upon arrival into Italy, foreign citizens who are not yet in possession of the Fiscal Code must apply to the "Agenzia delle Entrate" (Via delle Costellazioni, 190 Modena) and forward a copy of the issued card within 30 days of the start of the Course to the Department of Sciences and Methods for Engineering, Via Amendola 2 – Pad. Buccola 42122 Reggio Emilia (RE) by Fax at 0522/522312 or by e-mail: [soundengineering@unimore.it](mailto:soundengineering@unimore.it).

Those who have not regularized their enrollment in the terms and in the manner indicated above will be excluded from the Master. Those who have made false declarations will be excluded. The remaining places will be allocated to other candidates, in the order of final merit.

Failure to reach the minimum number of subscribers for the activation, the course will be revoked and total fees will be refunded.

#### **ARTICLE 6 – Vacancies**

Those eligible in the case of vacancies will be contacted by e-mail and/or telegram for enrollment, as specified in the preceding article, within a maximum of four days from the day following to that of e-mail and/or telegram.

The University of Modena and Reggio Emilia disclaims no responsibility in case of incorrect addresses indicated by the applicant or change in addresses not be communicated promptly by fax/email to the Department of Sciences and Methods for Engineering (Fax 0522/522312; e-mail: [soundengineering@unimore.it](mailto:soundengineering@unimore.it))

#### **ARTICLE 7 – Class attendance**

Class attendance is mandatory and the minimum requirements for Master title are:- Frequency for a period of no less than 70% of the total duration of the in class lessons;- The frequency for a period of not less than 70% of the total duration of the experimental laboratory period the stages; Passing the final exam.



#### **ARTICLE 8- Credits and title**

The Course provides 15 credits as Art. 2, paragraph 4 of Postgraduate masters and courses Regulation. At the end of the course and after passing the final exam, the students will receive a certificate of attendance. The award of the title is subject to the correct payment of tuition and fees and any surcharges.

#### **ARTICLE 9 – Privacy**

The University Administration, in accordance with Legislative Decree 196/2003, is committed to use the personal data provided by the candidate only for the completion of the selection procedure and for institutional reasons. The participation in the selection procedure entails, in accordance with Legislative Decree 196/2003, tacit consent to the publication on the University of Modena and Reggio Emilia website, the personal data of candidates and test data of admission.

#### **ARTICLE 10 – General Information**

For scientific, teaching and technical information (teaching Program, lesson timetable, exams etc.) contact the place of teaching

- Prof. Emilio Lorenzani, tel. +0039 522 522443, e-mail [soundengineering@unimore.it](mailto:soundengineering@unimore.it)

For website procedure information see [www.unimore.it](http://www.unimore.it) and [www.soundengineering.unimore.it/](http://www.soundengineering.unimore.it/)

For administrative information contact:

**Department of Sciences and Methods for Engineering - via Amendola 2 Pad Buccola CAP 42122 tel. 0522522621 fax 0522522312, e-mail: [soundengineering@unimore.it](mailto:soundengineering@unimore.it)**

Head of the procedure is the Director of the Department of Sciences and Methods for Engineering

Reggio Emilia, 17 ottobre 2017

Director of the Department of Sciences and Methods  
for Engineering

*(Prof. Eugenio Dragoni)*

#### **“ANNEX A”**

(2nd level degree or degree under the previous system obtained in Italy)



Self-declaration in substitution of attested affidavit (ex art. 46 e 47 D.P.R. 445/2000)

**WARNING**

The completion of this form of self-certification takes place according to the provisions of D.P.R. 28, 2000 , n . 445, "CONSOLIDATED LAWS RELATING TO ADMINISTRATIVE DOCUMENTATION ."

In particular:

- The data reported by the candidate assumed the value of the affidavits certification according to Articles 46-47 ; apply to the provisions of Art.76 which provide for administrative and criminal consequences for the candidate who makes statements not corresponding to the truth.
- Under Art.39 no authenticated application signed form is needed
- The competent office of the University will have appropriate controls on statements made by the candidate in accordance with the provisions of Articles 71 and 72 .
- The data requested in this form of self-certification are acquired pursuant to art. 16 as strictly functional to the completion of this selection procedure and assume the character of confidentiality as provided for by Legislative Decree of 30/06/2003 , n . 196 .

**DESCRIPTION OF THE TITLE OF ACCESS**

**(Titles ante D.M. 509/1999 or Master Degree ex D.M. 509/99 o Master Degree ex D.M. 270/04)**

Aware of the provisions of art. 76 of D.P.R. 445/2000, regarding the legal consequences of false declarations, training or use of false documents, the undersigned :

Surname \_\_\_\_\_

Name \_\_\_\_\_

Place of birth \_\_\_\_\_

Date of birth (dd/mm/yyyy) \_\_\_\_\_

Nationality \_\_\_\_\_

E-mail \_\_\_\_\_

**DECLARES**

- Master Degree (Laurea Specialistica ex D.M. 509/99) in:

\_\_\_\_\_

class: \_\_\_\_\_ achieved at University of \_\_\_\_\_

date (dd/mm/yyyy) \_\_\_\_\_

Final vote \_\_\_\_\_

- Master Degree ex D.M. 270/04 in: \_\_\_\_\_

class: \_\_\_\_\_ achieved at University of \_\_\_\_\_



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MODENA E REGGIO EMILIA

date (dd/mm/yyyy) \_\_\_\_\_

Final vote \_\_\_\_\_

**Link to the presentation video: <http://www.>**\_\_\_\_\_

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**AND DECLARES**

that as indicated in the documents annexed to the application form is true under articles 46 and 47 of D.P.R. 445/2000.

\_\_\_\_\_  
Place and date

\_\_\_\_\_  
Signature

**“ANNEX B”**



(2nd level degree or degree under the previous system obtained abroad)

**DECLARATION OF TITLE  
(Master Degree or equivalent)**

**INFORMATION IDENTIFYING THE CANDIDATE**

Surname \_\_\_\_\_

Name \_\_\_\_\_

Place of birth \_\_\_\_\_

Date of birth (dd/mm/yyyy) \_\_\_\_\_

Nationality \_\_\_\_\_

E-mail \_\_\_\_\_

**INFORMATION RELATED TO THE TITLE**

Level (Master Degree or equivalent) \_\_\_\_\_

Master Degree( or equivalent) in \_\_\_\_\_

Achieved at University \_\_\_\_\_ Date (dd/mm/yyyy) \_\_\_\_\_

Final vote \_\_\_\_\_

Subject area \_\_\_\_\_

Teaching language \_\_\_\_\_

Duration of Master degree or equivalent degree (years): \_\_\_\_\_

Requirements for access to the Master Program : \_\_\_\_\_

**INFORMATION ABOUT EXAMS AND FINAL MARKS**

DATE	COURSE TITLE	EVALUATION	MARK	CREDITS

Useful additional information about examinations and results: \_\_\_\_\_



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**INFORMATION ON THE UTILITY OF TITLE ACHIEVED IN THE FOREIGN COUNTRY:**

Acces to other university or similar courses: \_\_\_\_\_

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**ADDITIONAL STATEMENT**

All the declarations in the documents annexed to the application form are true under articles 46 and 47 of D.P.R. 445/2000.

\_\_\_\_\_  
Place and date

\_\_\_\_\_  
Signature