

By-Laws regarding the European Master of Science in Nuclear Engineering

Upon advice of the Teaching and Academic Affairs Committee, the Board of Governors of the European Nuclear Education Network Association in its meeting in Munich on March 4, 2005 has approved the following by-laws for the European Master of Science in Nuclear Engineering ENEN Certification issued by the European Nuclear Education Network Association.

Part 1 General Provisions

Article 1 These by-laws regarding the European Master of Science in Nuclear Engineering establish the rules and requirements that must ensure that the awarding of the European Master of Science in Nuclear Engineering ENEN Certification by the European Nuclear Education Network Association proceeds smoothly and correctly, and that the European Master of Science in Nuclear Engineering ENEN Certification reflects the high quality and the objectives set out by the European Nuclear Engineering Association in Article 2 of the Statutes.

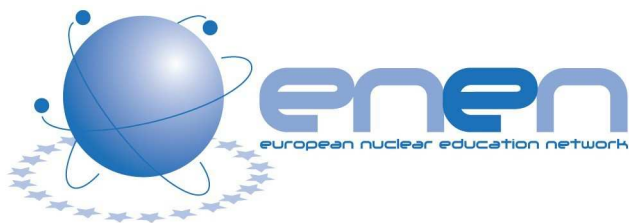
Art. 2 The following abbreviations are used:

ENEN-A	European Nuclear Education Network Association
TAAC	Teaching and Academic Affairs Committee of the ENEN-A
QAC	Quality Assurance Committee of the ENEN-A
EMSNE-EC	European Master of Science in Nuclear Engineering ENEN Certification
ECTS	European Credit Transfer System
the Chair	the Chair of the TAAC or his/her designated substitute

Art. 3 The EMSNE-EC is issued by the ENEN-A to certify that:

- a. the academic programme of an applicant leading to a Master Degree in Nuclear Engineering, or equivalent, has met all the requirements of the ENEN-A as stated in these by-laws;
- b. this Master Degree in Nuclear Engineering, or equivalent, is therefore considered by the members of the ENEN-A as the equivalent of a European Master of Science in Nuclear Engineering.

Art. 4 The EMSNE-EC is only valid together with the corresponding Diploma of Master in Nuclear Engineering, or equivalent, issued by the home institution (to be defined in Art. 6).



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Art. 5 The EMSNE-EC is only awarded after a personal application.^A

Part 2 Requirements

Art. 6 The main requirement for awarding the EMSNE-EC is that the applicant has obtained a Master Degree in Nuclear Engineering, or equivalent, delivered by or in co-operation with an academic institution which is a member of the ENEN-A, or at an academic institution that is a member of a cluster of academic institutions which is a member of the ENEN-A, as described in Article 3.1 of the Statutes of the ENEN-A. This academic institution is hereafter called the home institution.^B

In case the applicant has obtained a double, a multiple or a joint Master Degree in Nuclear Engineering, or equivalent, issued by more than one academic institution, the applicant must designate one of these academic institutions as the home institution, provided that this institution meets the requirements of the first paragraph of this article.^C

Art. 7 The additional requirements for awarding the EMSNE-EC are:

- a. the total load of the study programme of the applicant leading to the degree of Master in Nuclear Engineering, or equivalent, is at least 300 ECTS credits at university level (besides the exception mentioned in Art. 8);^D
- b. of which at least 60 ECTS credits (which may include the master thesis project) are in nuclear sciences and technology, preferably engineering, at master level;
- c. of which at least 20 ECTS credits (which may include the master thesis project) are taken at one or more academic institutions or clusters of such academic institutions, that are effective members of the ENEN-A, other than the home institution and in a different country than the home institution;^E
- d. the applicant has successfully defended a nuclear engineering master thesis project;^F

A The EMSNE-EC is not awarded to academic programmes in general, but to the specific (and unique) academic programme of an applicant. The application for the EMSNE-EC must be done personally; nobody (including the academic institution issuing the Master Degree in Nuclear Engineering) can apply for the EMSNE on behalf of an applicant.

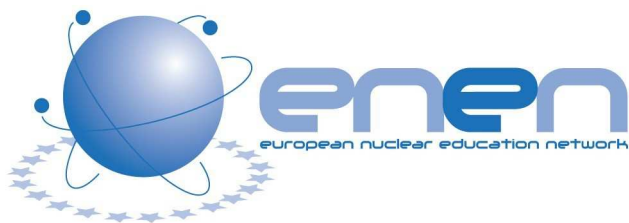
B This requirement is the basis for awarding a Diploma Supplement to a Master degree already obtained.

C In the case of consortia awarding degrees, like Erasmus Mundus Consortia.

D This was one of the basic requirements of the EMSNE-EC as set out in the ENEN project. The 300 ECTS credits at university level should guarantee that the student has a genuine understanding of the basic sciences underlying nuclear engineering.

E At least the equivalent of 20 ECTS of nuclear engineering courses, and or a Master thesis project, must be taken abroad, which was one of the basic ideas of the EMSNE. What's more it must be taken at a fellow ENEN member institution, in order to promote the mobility between ENEN member institutions, to have a better view of the content and quality of these courses followed abroad, to limit automatically the international exchange to Europe, since it is an European master.

F The master thesis is an important part of the Master in Nuclear Engineering being assessed. An option is, like the 20 ECTS abroad, to demand that it happened under the supervision of a faculty member of an academic institution or a cluster of such academic institutions, that is an effective members of the ENEN-A. In most



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e. the courses referred to in Art. 7.b cover at least the following fields of study:^G

- Nuclear Power Plant Technology & Reactor Engineering,
- Reactor Physics,
- Nuclear Thermal Hydraulics,
- Safety and Reliability of Nuclear Facilities,
- Reactor Engineering Materials,
- Radiology and Radiation Protection,
- Nuclear Fuel Cycle and applied radiochemistry.

f. laboratory work on some of the above fields of study.^H

Art. 8 Exceptions to the minimum total academic course load of 300 ECTS credits as described in Art. 7a can be made only if the TAAC is of the motivated opinion that the academic programme followed by the candidate is equivalent to a 300 ECTS credits university programme representative for the academic ENEN-A members.^I

Part 3 Application

Art. 9 The TAAC decides on the form and content of the application form the applicant has to submit.

Art. 10 The Secretary-General makes the application forms available to applicants.

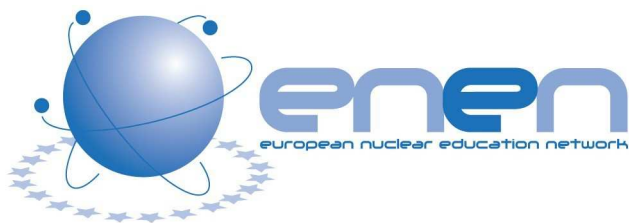
cases this will be granted anyway, either at the home institution or at a fellow ENEN institution to be eligible for the 20 ECTS abroad.

G It is not possible to give a complete description of these fields of study in these by-laws. A more elaborated description of this field of study can be found in the guidelines the TAAC should use to determine if they have been treated in a satisfactory way.

H Nuclear Fuel Cycle was previously not explicitly mentioned as a field of study, neither in the former proposals, nor in the end report of the European Nuclear Engineering Network, but it was assumed to be a part of Reactor Engineering Materials. It seems more appropriate and clear to mention it explicitly, though, certainly, since the nuclear fuel cycle, viz. the waste management, is a major discussion point in the social acceptance of nuclear energy. An other option is Nuclear Fuel Cycle and Radiochemistry.

I The exception to this rule is provided to assure that, given the broad spectrum of university programmes existing in the different European countries, some of which lead to a Master in Nuclear Engineering with a study load of less than 300 ECTS credits at university level; that even those study programmes can be eligible for the EMSNE on the condition that they are considered to be equivalent to the 300 ECTS programmes and also guarantee that the student has a genuine understanding of the basics sciences underlying nuclear engineering. This has to be checked and motivated by the TAAC.

No exceptions, neither to the 60ECTS in nuclear engineering, or to the 20ECTS abroad are possible, since both requirements are the core of the European Master in Nuclear Engineering.



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- Art. 11 The applicant has to prove payment of an application fee. The application fee for the EMSNE-EC is fixed by the Board of Governors.^J
- Art. 12 The application form must be co-signed by a faculty member of the home-institution.
- Art. 13 Completed application forms are submitted to the Secretary-General of the ENEN-A, who checks whether the application form is complete and the application fee has been paid, and, if so, distributes a copy of the submitted application form to each member of the TAAC, one month before the next TAAC meeting .
- Art. 14 The time span between receiving the degree of Master in Nuclear Engineering, or equivalent, at the home institution and the application for the EMSNE-EC should be not more than five years.^K
- Art. 15 The applicant can withdraw the application by a letter to the Secretary-General; the application fee will not be refunded, unless the provisions of these by-laws regarding the maximum term at which the TAAC must come to a decision were not observed.

Part 4 Deliberation

- Art. 16 The decision whether to award the EMSNE-EC to an applicant, or not, is autonomously made by the TAAC in accordance with the rules and requirements set out by these by-laws.^L The decision is transformed into a recommendation to the ENEN-A Board, which is forwarded to the ENEN Secretary General (see further Art 26).
- Art. 17 The TAAC can develop additional guidelines, in accordance with these by-laws, on how to assess whether an applicant has fulfilled all the requirements set by these by-laws.^M These additional guidelines are to be approved by the board.
- Art. 18 In the event that a member of the TAAC is a member of staff of the academic institution that has (co-)issued the Master Degree in Nuclear Engineering, or equivalent, to the applicant; this member of the TAAC must request that the other members of the TAAC appoint a substitute member. This substitute member is to be considered as a member of the TAAC for this application.^N

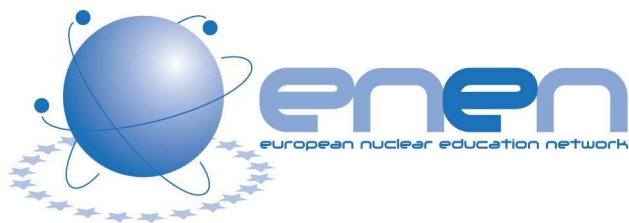
J The Quality Assurance Committee (Helsinki January 24, 2005) was of the opinion that an application fee should be asked, to cover the administrative costs and to make sure that the EMSNE is not considered as valueless, because it is for free.

K To avoid that applications are submitted to the ENEN-A, way to long after the graduation of the applicant, to determine if the application has fulfilled all the necessary requirements. Five years really seems the maximum period.

L It is the TAAC, whose members are appointed by the Board of Governors, which decides whether to award the EMSNE-EC. The TAAC acts in this case as a kind of examination board.

M These guidelines can help the members of the TAAC to assess applications: when can a course be considered to have been followed abroad?, how to assess whether “of university level”?, how to count ECTS credits, etc. In addition, these guidelines will guarantee consistency in the decisions of the TAAC.

N To further increase the impartial quality content of the EMSNE-EC, no member of the TAAC, who is too closely involved with the applicant or the applicant’s study programme, can be part of the decision to grant the EMSNE-EC.



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The same applies, in the event that an applicant and a member of the TAAC are related, by blood or marriage up to and including the third degree.

- Art. 19 The decision to award the Diploma Supplement to an applicant is made on an individual basis, and after deliberation and assessment of the submitted application form.^O
- Art. 20 The TAAC acts collectively.^P
All decisions are made by a simple majority (in favour versus against: blank votes or abstentions are not counted) of the votes cast, provided that a majority of the members of the TAAC cast their vote (including blank votes and abstentions). In the case of a tie vote, the Chair has the deciding vote.^Q
The awarding of the EMSNE-EC itself, however, is made by a two-third affirmative vote of the members of the TAAC. Blank votes and abstentions are considered as negative votes.^R
No proxies are allowed. Upon request by a member of the TAAC, a secret vote is held.
- Art. 21 The deliberation and casting of votes by the TAAC can be done in any other way the TAAC finds appropriate, however written confirmation of the vote must be sent to the Chair.^S
- Art. 22 The Chair of the TAAC sets the date for the decision on an application.
The TAAC must take a decision not later than seven^T months after the Secretary-General has received the application (as per postmark).^U
- Art. 23 Before making a decision on an application, the TAAC can request that the applicant and/or the co-signing faculty member, as described in Art. 12, provide the TAAC with additional information regarding the application. The request is sent out by the Secretary-General. The term set-out by Art. 22, is suspended until the requested information is provided to the Secretary-General by the applicant and/or the co-signing faculty member.

O There is no generic approval of a certain study programme or a certain degree, of which all people accomplishing it, are automatically awarded the EMSNE-EC. The individual study programme of each applicant is assessed.

P The members of the TAAC can differ in view during the deliberations, after the voting the decision is that of the TAAC as a whole.

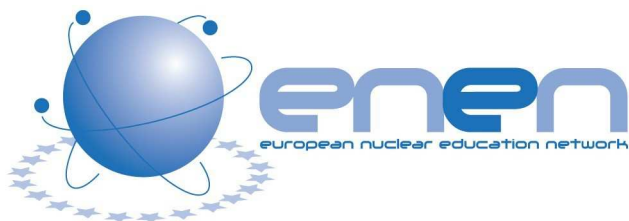
Q A classical voting rule to allow the functioning of the TAAC, e.g. to reschedule a decision, or to request further information from the applicant.

R A more severe voting rule to avoid that the EMSNE-EC is awarded by the TAAC, when a Committee of 5 persons of which 3 cast their vote decides to award the EMSNE-EC with a majority of the double vote of the Chair, one vote against and one abstention.

S To accelerate the decision, it is interesting to give the TAAC the liberty to decide how to deliberate about an application.

T A maximum term of five months, means that the TAAC must have at least three decision moments (not necessarily convene, see the preceding Article) a year. A maximum term of seven months means that the TAAC must have at least two decision moments a year.

U The members of the TAAC must have sufficient time to study the application. The decision should not be postponed indefinitely, so a maximum term is included.



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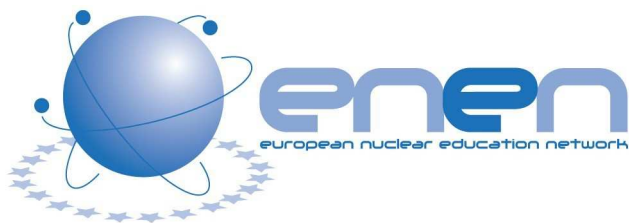
- Art. 24 The decision by the TAAC whether or not to award the EMSNE-EC is final. No appeal is possible. In the case of a negative decision, the applicant is allowed to submit a new application, as described in these by-laws.^V
- Art. 25 The members of the TAAC and any other person present at the deliberation proceedings are bound to secrecy regarding deliberation and voting.
- Art. 26 The minutes of the deliberation are drafted by the Chair, and consist for each applicant of:^W
- the TAAC members who participated to the deliberation and voting,
 - the overall decision,
 - in the case of a positive decision to award the EMSNE-EC and if applicable, the motivation for using Art. 8 of these by-laws,
 - in the case of a negative decision to award the EMSNE-EC, the requirements for the EMSNE-EC set out by these by-laws which the applicant did not fulfil,
 - the submitted application file.

Within two weeks of the decision, the Chair sends the minutes and recommendations to the Secretary-General. The Secretary General transmits the minutes and recommendations to the Members of the Board for (a) verifying that the applications have been handled and treated according to the current bylaws and (b) for endorsing and implementing the recommendations made by TAAC through the Secretary General. The Secretary General notifies the applicants and archives the minutes. In the exceptional case that the Board would not follow the recommendations made by TAAC, the Secretary General takes all actions as necessary to mediate and resolve the problem.

Part 5 Notification

- Art. 27 Within four weeks of the decision of the TAAC, the Secretary-General provides each applicant and the co-signing faculty member of the home institution with a written notification of the decision of the TAAC regarding the application.
- Art. 28 In the case of a negative decision concerning awarding the EMSNE-EC, the Secretary-General lists in this written notification the requirements, mentioned in the minutes of the deliberation as described in Art. 26d, which the applicant did not fulfil.^X

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- V No appeal is possible. An applicant can, however, resubmit an application, e.g. after having pursued a master degree which was not considered as a genuine master in nuclear engineering, the applicant can decide to study for an additional genuine master degree and resubmit his/her file afterwards.
- W To have the necessary documentation to 1) let the Secretary-General notify the applicants of the outcome of the decision of the TAAC and 2) to report to the Board of Governors, concerning the application procedure and the participation of the different TAAC members to the vote.
- X The applicant has the right to know why the EMSNE-EC was not granted. This information provided remains very concise. No detailed voting record is presented and the results are not open for discussion.



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Art. 29 In the case of a positive decision concerning awarding the EMSNE-EC, the Secretary-General issues the EMSNS-DS, according to the rules set out in these by-laws, and presents it to the applicant.

Part 6 Diploma Supplement

Art. 30 The EMSNE-EC carries the following text.

On behalf of the European Nuclear Education Network Association, we acknowledge that the academic programme of [given name and family name of the applicant] born on [date of birth (month day, year) of the applicant] , [place of birth (city and country) of the applicant], leading to the following degrees and certificates

[legal name of the Master Degree]

[any additional degrees and certificates being part of the nuclear education program]

fulfils all the requirements set by the European Nuclear Education Network Association and is therefore considered by the member institutions to qualify as the equivalent of European Master of Science in Nuclear Engineering.

Art. 31 The EMSNE-EC mentions the city, country and date of issue.

Art. 32 The EMSNE-EC is signed by the Chair, and the President or Vice-President of the ENEN-A. Their academic title, full name and function within the ENEN-A are mentioned.^Y

Art. 33 The EMSNE-EC carries the official logo and English name, written in full, of the European Nuclear Education Network Association.

Art. 34 The EMSNE-EC mentions the full legal names of all the institutions that are an ENEN-A member at the time of issuing the EMSNE-EC. The names of the institutions are alphabetically ranked according to the municipality of their legal seat. First the effective members are mentioned, then the associated members.

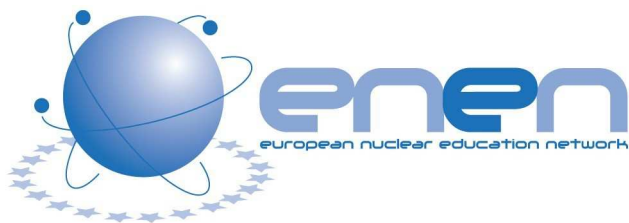
For consortia which are member of the ENEN-A, the municipality of the first ranked consortium member institution is used, when the members of the consortium are ranked according to the method above.

Art. 35 The EMSNE-EC mentions the address of the registered office of the ENEN-A.

Art. 36 The EMSNE-EC clearly states: "ENEN Certification" and "This document is only valid together with the corresponding Diploma issued by the university of registration."^Z

Y The Quality Assurance Committee (Helsinki January 24, 2005) was of the opinion that the Diploma Supplement should be signed by the Chair of the TAAC and the President of the ENEN-A, to avoid short-circuits and to reflect the actual situation that the TAAC takes the decision on behalf of the board.

Z What with academic institutions who are not labelled universities in the strict sense? Alternatives:
1) "This document is only valid together with the corresponding Diploma issued by the academic institution of registration."



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Part 7 Reporting and Quality Assurance

Art. 37 The TAAC reports annually to the Board of Governors about the activities of the TAAC regarding the awarding EMSNE-EC.^{AA} This report contains^{BB}:

- a. a list of the application files and the corresponding decisions,
- b. total deliberation and voting participation of each TAAC member,
- c. an overview of the requirements for the EMSNE-EC which the rejected applicants did not fulfil,
- d. the use of Art. 8 of these by-laws,
- e. an overview of the guidelines mentioned of Art. 17 used to assess the requirements listed in these by-laws,
- f. a short self-assessment of the activities of the TAAC regarding the awarding of the EMSNE-EC,
- g. questions and recommendations to the Board of Governors regarding the awarding of the EMSNE-EC.

Art. 38 The Board of Governors discusses this report and responds to the TAAC.

Art. 39 The TAAC can ask the Quality Assurance Committee for assistance in developing the guidelines of Art. 8 and for assessing the functioning of the TAAC regarding the awarding of the EMSNE-EC, as described in these by-laws.^{CC}

2) “This document is only valid together with the Diploma of [legal name of the of Master Degree in Nuclear Engineering, or equivalent, obtained at the applicant’s home institution] issued by the [full legal name of the home institution].”

AA The Board of Governors delegates the responsibility for awarding of the EMSNE-EC to the TAAC. The Board of Governors has the right and duty to be kept informed about the activities of the TAAC regarding the EMSNE-EC.

BB The report resumes to a large extent the information available in the minutes of the TAAC. This information is represented in a general/anonymous, without personal details about the applications.

CC The QAC does not assess individual applications, but it is the main partner in assessing the general rules for awarding the EMSNE-EC.