

**Accreditation type : G (Renewal)** : Renewal, from the 1st of sept. 2015, of the « admission par l'État » granted to the master programme of civil polytechnician engineering from Royal Military Academy (RMA) – Belgium

- Considering the *code de l'éducation* and in particular Articles L642-7 and R642-9,
- Considering the request by the Royal Military Academy (RMA) - Belgium
- Considering the report from the following panel : Arnaud REICHART (CTI member and panel chair), Pascal RAY and Christophe MEUNIER (CTI members); Patrick GERLIER (expert); Christiane MALCORPS BUTTIENS (international expert); Joffrey DUTTO (engineering student expert); Theo VERHAGEN (international expert - NVAO) and presented during the plenary session on the 8th of September 2015,
- Considering the mutual recognition of accreditation decisions agreement between CTI and NVAO (report 2009)

## Commission des titres d'ingénieur (CTI) adopted the following decision :

### **General presentation**

Founded on the 7th of February 1834, a few years after Belgium's independence, on the model of the French Polytechnical School, the Royal Military Academy is a military higher education institution in charge of general, military and physical academic training for future officers, and life-long-learning training for the officers during their career in the Defence department.

Only belgian institution under the supervision of the federal state, the teaching, that is completely free, is lavished in French, Dutch and English.

### **Main features**

RMA intends to train officers able to lead men under various, complex and unique circumstances, in a high technological context, with an integrated multidisciplinary curriculum leaving large part dedicated to personality development. Its values are honor, discipline, commitment, courage and respect. The institution gives great importance to the development of initiative and responsibility and expects from students and alumni loyalty, solidarity and integrity.

The annual students flow is in a range of 130 - 150 enrolled, including 30 - 40 in the engineering programme.

The yearly number of awarded degrees is 25 - 30. The permanent teaching staff is composed of 48 teachers (including 17 professional soldiers) and 61 teaching assistants (including 54 professional soldiers). It is completed by 24 part-time teachers (including 19 professional soldiers). For the training of the officers, 67 % of the teaching hours are lectured by doctorate holders (72 %, taking into account the languages and operational). 6 % of the teaching hours are lectured by external contractors.

The buildings cover 85 250 sq.m. including 16 570 sq.m dedicated to teaching. The campus includes individual rooms, a restaurant and numerous and varied sport facilities.

Laboratories are properly equipped for their academic mission. The ballistics laboratory, having very few or no civilian equivalent, enables advanced research activities. Laboratories are active. Partnerships are well established. The research-teaching link is strong. Scientific research dissemination is deeply rooted. Excellent center for documentary resource. However, contacts with the Defence department are not sufficiently frequent for the Defence to know enough about RMA and its actions.

RMA developed partnerships, most of the time through Erasmus agreements, with the main european military institutions whose cursus are in line with the Bologna process (Netherlands, France, Germany, Romania, Austria, Poland, Sweden, Czech Republic, Turkey). RMA is also involved in european military institutions networks and has coventions with several military institutions outside Europe (Tunisia, Algeria, Congo).

RMA signed cooperation agreements (in particular in the doctoral studies field) with most of the belgian universities. RMA participates in joint trainings in naval construction with ULg and UGent, and in aeronautical and spatial mechanics with VUB and ULB.

## ***Education***

RMA's education relies on 4 pillars (academic, militar, physical and character). It prepares students for an entire career rather than an initial function.

Educational objectives arise from the missions entrusted to the RMA by the headquarters of Defence and approved by the Defence Minister. The institution trains engineers but its first mission is to train officers. This specificity is clearly stated in the programme's objectives : general objectives are common to all officers and specific objectives are expected for the polytechnical engineering programme.

Those objectives are reached by a high level academic teaching with multidisciplinary academic courses, technological courses and training periods in the fields of sports and character development. Learning by project and experimentation is necessary to develop a sense of concrete and reality. This is done through practical work and projects in the academic field and through military camp periods, both in Belgium and abroad, in the professional field.

The three years of Bachelor focus on fundamental sciences and generic engineering sciences. The third year provides all students the necessary knowledge to make the choice of modules and options for their Master. Students develop a broad field of knowledge in fundamental sciences, which allows them to reach a certain overview and detachment towards the problems an engineer has to solve.

The organization of the curriculum of the engineering programme, thanks to its modules and optional tracks, guarantees a multidisciplinary education, while specialized in one of the four

fields opened in RMA : weapons systems and ballistics ; building materials and construction; mechanics ; telecommunications.

Students have to choose three teaching modules two of which are mandatory in terms of the chosen specialty. The third module, freely selected, allows students to acquire knowledge and skills in a field related to the specialty.

The ability to work independently is academically acquired. Moreover, on a practical level, many aspects of daily life in RMA are taken care of by the students upon request from the RMA general command and class commander. The ability to organize their work is stimulated individually by the "StudyBook" that forces them to manage their agenda in time and space, and collectively by the many projects they must perform in groups.

Evaluation is based on exams at the end of each semester and on the final dissertation.

RMA's polytechnical faculty, which organizes the programme, is structured in seven departments. At master level, there are no language courses but courses in English. 30 of the 180 ECTS credits are allocated to SHEJS. A module of 18 ECTS credits remains the free choice of the students. A transdisciplinary project of 6 ECTS credits achieves management skills. Leadership is studied during the military periods. The final dissertation allocates 27 ECTS credits.

Corporate culture as such is not particularly developed, given the specific education goals. The Defence components stand in this context for the « corporation ». The military education contributes to the set up of a certain corporate culture. It is also present in some courses of the master: military sociology (3 ECTS); work sociology (3 ECTS); military leadership (3 ECTS); introduction to economics (2 ECTS).

The pedagogical model is perfectly defined with a learning outcomes approach in accordance with CTI's criteria. The continuous improvement process is perfectly established and shows a global consultation of all the internal and external stakeholders.

### ***Institution's evolution***

In June 2009, the Commission des titres d'ingénieur accredited (admission par l'Etat) the civil polytechnician engineering – Master from Royal Military Academy (Belgium) for 6 years (starting 1st of september 2009). This decision came with the following recommendations:

1. improve the first year's success rate,
2. clarify the objectives of the programme in terms of learning outcomes
3. check the relevancy of the English test regarding the European level B2
4. consider the development of industrial internships and international stays
5. strengthen the programmes' link with research
6. rewrite the diploma supplement in accordance with the European standards
7. set up a workable systematic evaluation of courses
8. consider the possibility of a direct admission in Master.

A follow-up report about these recommendations was requested after 3 years.

Recommendations 2, 3, 6 and 7 were implemented. Follow-up on recommendations 1 and 5 is still ongoing. Regarding recommendation 4 (internship), the institution considers that professional internships are completed (military internships) and that the programme already allows international awareness. Recommendation 8 (master) cannot be considered given the legal framework.

## Strengths

- complete bilingual programme based on 4 pillars
- strong students support throughout the whole duration of the programme
- bilingual teachers speaking english as well
- sustained research activities with respect to the number of teachers
- efficient quality system
- high quality sport facilities

## Weaknesses

- restrictive legal framework bridling some initiatives
- lack of targeted international strategy
- important number of research topics with respect to the number of teachers
- weak communication on the institutions' expertise
- weak number of students in some optional fields
- lack of visibility regarding alumnis career evolution
- some support functions do not live up to the departments expectations

Consequently,

The Commission des titres d'ingénieur **takes a favorable decision for the renewal of the « admission par l'État »**, for a six years length from the 1st of sept. 2015, of the **following programme**, issued by Royal Military Academy – Belgium :

**« Master of engineering sciences »**  
**from Royal Military Academy (Belgium)**  
*(New title replacing civil polytechnician engineering – Master).*

As result of this admission, graduates will be authorized to hold in France the *titre d'ingénieur diplômé* - Royal Military Academy (Belgium).

This decision comes with the request of implementation of the following **recommendations** :

- ensure the teaching evaluation involves all students
- set up a targeted international strategy
- strengthen internal and external communication about the institutions projects
- ensure the language quality in the courses taught in English in the Master programme
- target the objectives of the English test in the whole programme (and not only in the english courses)
- ensure consistency between the optional courses number and the students number in order to maintain a group dynamic
- ensure the quality of services provided to departments by some IT support functions

The European label for engineering programmes **EUR-ACE Master** can be awarded – upon institutions' request to CTI – to the **following programme**, issued by Royal Military Academy (Belgium) :

**« Master of engineering sciences »**  
**from Royal Military Academy (Belgium)**  
*(New title replacing civil polytechnician engineering – Master).*

Decision taken in plenary session in Paris, the 8th of september 2015.

Approved in plenary session in Paris, the 13th of october 2015.

A handwritten signature in blue ink, appearing to read 'L. Mahieu', with a stylized flourish at the end.

The President  
Laurent MAHIEU