

# **Regulations of the International Research Centre for "Mathematics & Mechanics of Complex Systems"**

## **Article 1 - Establishment and Designation.**

1. The International Research Center for "Mathematics & Mechanics of Complex Systems" hereafter referred to as the Centre, is established at the University of L'Aquila, hereafter referred to as "University", under article. 44 of the Statute.
2. The English name of the Centre is *International Research Center for Mathematics & Mechanics of Complex Systems*; the acronym is M&MOCS.
3. The Research Centre was established under the auspices and financial and logistical support of the Province of Latina and the Tullio Levi Civita Foundation, hereafter referred to as the Foundation. The Centre supports the objectives of the Foundation in terms of the development and diffusion of scientific culture in the territory, which is also implemented through the promotion of higher education.

## **Article 1 - Topics of Interest**

1. The topics of interest to the Center relate to mathematical modeling, numerical implementation and testing of physical problems of Mechanics of Complex Systems. Of particular interest are the following topics:
  - mechanics of fluids and solids;
  - fluid dynamics and transport phenomena;
  - kinetic theory and modeling of complex systems;
  - vibration and waves in continuous and multi-phase media;
  - mechanics, stability and control structures;
  - identification of materials and mechanical systems;
  - dynamic systems and bifurcation theory;
  - fluid dynamic models for the analysis of traffic flows and the social sciences;
  - numerical-differential modeling in the mechanics of biological materials and nano-structures;
  - other branches of research, as foreseen in the agreements referred to in article. 4, paragraph 3.

## **Article 3 - Purpose**

1. In relation to the issues listed in article. 2, the Centre has the following institutional goals:
  - a) promote, conduct and coordinate research activities, with particular attention to the development and entrenchment of scientific culture in the province of Latina;

- b) promote initiatives for scientific liaison between researchers in mathematical fields and researchers in solid mechanics and fluids, operating both in Italy and abroad in the field of mathematical modeling for engineering;
- c) promote, support and organize highly qualified educational activities, such as training, masters and doctorate courses;
- d) encourage the promotion of mathematics and mechanics of complex systems through publications, conferences, seminars and exhibitions;
- e) carry out consultancy and research for organizations and institutions;
- f) disseminate knowledge of research undertaken by the Centre in the most appropriate ways.

#### **Article 4 - Membership and International Collaborations**

1. The Centre consists of the University departments that have promoted the establishment (founding departments) or subsequently join it. Each department that adheres to the Centre proposes the list of teachers and researchers involved.
  
2. Founding Departments of the Centre are: (a) the Department of Structural Engineering, Water and Land, (b) the Department of Pure and Applied Mathematics.
  
3. After the conclusion of specific agreements, Universities and Italian and foreign research institutes interested in pursuing institutional purposes may join the Centre. Any institution that adheres to the Centre proposes the list of teachers and researchers involved.
  
4. Commands, secondments, temporary use or assignment of staff from other organizations or public agencies or institutions, in accordance with local regulations are possible. Scholarship holders of Italian and foreign organizations can be assigned to the Center.
  
5. Individual Membership of the Centre is also possible:
  - a) University teachers and researchers;
  - b) teachers and researchers from Italian and foreign universities and research institutes;
  - c) external experts.
  
6. Applications for membership, for those defined in paragraph 5 of this article, shall be accompanied by a scientific curriculum vitae, and any other document showing the consistency of the application with the scientific and cultural purpose of the Center.

7. Membership of a University department to the Center, which adheres in accordance with the present article, paragraph 1, is intended as operational until signed revocation is provided by the University department director. Membership of an institution to the Center, which adheres in accordance with the present article, paragraph 3, is intended as operational until signed revocation is provided by the legal representative of the institution.

8. Membership of a person to the Center under subsection 5 means working until written further notice signed by the member, but the membership is to be explicitly confirmed every four academic years, except in the case of automatic conclusion.

9. In keeping with the international character of the Centre, stable forms of cooperation with foreign scientific institutions that pursue similar objectives to those of the Centre, can be implemented through suitable conventional means. To this end, University budget funds for international scientific collaboration can be used.

#### **Article 5 - Bodies**

1. The bodies of the Centre:

- a) the Director;
- b) the Scientific Committee;
- c) The Council of the Centre (hereinafter referred to Council).

2. The Director is appointed by the Chancellor on the nomination of the Council, who chooses from the professors of the Centre. The Director remains in office for four years and can not hold the office for more than two consecutive terms.

3. The Scientific Committee is composed of:

- a) the Director of the Center pro tempore, who presides;
- b) five representatives of Centre teachers and researchers, elected by the Council;
- c) a full tenured professor appointed by the President of the Foundation;
- d) four experts, Italians and foreigners with high skills and competence in the interest areas of the Centre, appointed by the Council from a list of candidates proposed by the Director.

The meetings of the Scientific Committee may also take place electronically. The members referred to in paragraph d) do not contribute to the formation of a quorum. The youngest member at the

meetings takes the minutes. The Scientific Committee is in charge for four academic years, with no limit to the number of consecutive terms of office carried by the members referred to in points b), c) and d).

4. The Council of the Centre consists of:

- a) the Director of the Centre, who presides;
- b) all teachers and researchers of the Centre;
- c) a representative elected by the administrative staff working at the Centre;
- d) the chief executive officer (even if ad interim) of the Centre, who takes the minutes of meetings.

The elected members remain in office for four academic years, with no limit to the number of consecutive terms of office carried by the members referred to in points b), c) and d).

5. If the Director considers it appropriate, an Executive Committee may be set up, composed of the Director, the chief executive officer and three members appointed by the Council. The committee, which shall remain in office until the expiry of the mandate of the Director, has functions of inquiry to the Council and shall act definitively on matters delegated from time to time by the Council.

#### **Article 6 - Director**

1. The Director represents the Centre in dealing with academic authorities and with the matters outside the laboratory.

In addition the Director:

- a) convenes and chairs the Scientific Committee and the Council;
- b) implements the decisions of the governing bodies of the Centre;
- c) is subject to the laws and regulations governing the department directors of the University;
- d) makes autonomous provision for expenditure to the maximum amount foreseen for department directors in accordance with University administrative-accounting regulations;
- e) is available as necessary to the normal ongoing activities of the Centre;
- f) supervises the activities of technical-administrative staff working at the Centre;
- g) appoints a vice-director from among the teachers and researchers at the University in case of absence or inability to fulfill the role .

#### **Article 7 - Scientific Committee**

1. The Scientific Committee has the task of ensuring the scientific validity and cultural initiatives promoted by the Center, coordinating programs.

In particular:

- a) approve a plan of action within the institutional aims of the Centre by the end of each calendar year, to be implemented in the next calendar year, based on proposals made by the Council pursuant to article 8;
- b) prepare and forward to the Chancellor, by the end of each calendar year, an activity report by the Centre regarding the previous year;
- c) express judgements, binding for the Council, on the scientific curriculum vitae of teachers and researchers during the membership applications and proposals for international collaboration in article 4 of these Regulations

### **Article 8 - Council of the Centre**

1. The Council collaborates with the Center Director in ensuring the functioning of the Centre, in particular:

- a) decide on the membership of University departments following the establishment of the Centre, as per paragraph 1 of article 4, as well as on the membership of individual teachers and researchers wishing to join according to paragraphs 1, 3 and 5 of article 4;
- c) propose contract stipulations or agreements with Italian or foreign public or private bodies, to the competent academic bodies, according to paragraphs 3 and 4 of article 4;
- d) deliberate on expenditure which is higher than that of maximum remit of the Director;
- e) annually submit requests for funding and allocation of technical and administrative staff;
- f) approve the annual budget and final accounts of the Centre, within the deadlines established for similar requirements in the departments of the University;
- g) submit by June 30 of each year on the approval by the Scientific Committee, a comprehensive plan of initiatives consistent with the institutional aims of the Centre, to be implemented in the next calendar year;
- h) deliberate on all matters concerning the functioning of the Centre which the Director shall submit for evaluation

### **Article 9 - Staff**

1. The Centre operates with the technical and administrative staff of one or more members of the member departments.
2. Commands, assignments or secondments are possible, from other public or private or state institutions, in accordance with local regulations and the Statute of the University.
3. Fellows may be assigned to the scholarship Centre of Italian and foreign institutions

### **Article 10 - Spaces and Sub-offices**

1. The Centre operates in the spaces provided by Latina Province and the Foundation, as well as the University or by one or more related departments.
2. On the basis of operating requirements, separate sub-offices can be made in offices provided by Italian and foreign research institutions Centre members, under appropriate agreements concluded in accordance with paragraph 3 of article 4

### **Article 11 - Educational Initiatives**

1. The Centre can arrange courses and seminars on issues relevant to institutional goals, in collaboration with other interested institutions. This educational activity is to be understood to be surplus to the educational requirements established by the Faculty of affiliation of teachers and researchers, under the applicable provisions.
2. The Centre can collaborate with educational facilities of reference (Council of Course and Faculty) in the activation of international courses aimed at the issue of multiple or joint titles, in particular for the organization of educational training on offer within the University.

### **Article 12 - Administrative and Financial Resources**

1. The Centre operates as an administrative center of expenditure in accordance with article 44 of the Rules and Statute of the University administration.
2. The financial resources available to the Centre shall consist of ordinary and extraordinary contributions of the Foundation, bodies and international organizations, ministries, University, universities and research institutions participating, as well as from numerous organizations and proceeds from contracts or agreements with public or private bodies, by any third party in accordance with relative regulations of the University, from any interest earned on bank deposits, and by liberal donations from public or private institutions. The Council of the University can annually assign an endowment fund, taking into consideration the program of activities prepared by the organs of the Center.
3. Research funds allocated in any way to participating teachers and researchers can be used at the Center

### **Article 13 – Scientific Reporting and Accounting.**

1. Given the interdepartmental nature of the Centre, all the activities it carries out each year will be forwarded to University departments which participate according to paragraph 1 of article 4.
2. In order to allow departments to adhere to the reporting and accounting of the scientific research

conducted at the Centre by all the parties under article. 4 and the responsibility for individual departments: the Council of the Centre is to decide the percentage interest of every department for all the reported initiatives of the Centre, until it reaches the quota of 100%. A similar decision is taken on all the financial resources available to the Centre and referred to in paragraphs 2 and 3 of article 12.

#### **Article 14 - Duration**

1. The Centre is set up for a maximum of six years. The establishment of the Centre may be renewed for six years every six years by resolution of the Academic Senate and the University Board of Directors, upon hearing the judgement of each of the departments that vote from six to three months prior to the deadline.

#### **Article 15 - General requirements, nature of the regulation changes**

1. This regulation has the nature of internal rules procedure of the facility of the University, under the Statutes of the University.
2. Although not specifically required by these regulations, the rules of the Statute, University regulations and current legislation are applied.
3. These regulations may be amended at the initiative of the Council by means of a two-thirds majority. The judgment of the Scientific Committee must be obtained on the proposed amendment, through approval by the competent bodies of the University. Any new regulation will come into force with the beginning of the academic year following that of its approval. University department and scientific institution members, as per article 3, will be entitled to accept the new regulation or to withdraw its membership with effect from its entry into force without further commitments for either the center or the department or institution that is withdrawing.

#### **Article 16 - Transitional rules**

From the date of the Centre start-up, the functions of the Council, of the Scientific Committee and the Director are taken on by an Organizing Technical Committee, consisting of three full tenured professors: two are nominated by the directors of the founding departments, and one by the director of the Foundation. At its first meeting, the Committee shall elect its chairman from among the professors of the University of L'Aquila. The Committee will remain in office until the Centre has a number of professors and researchers sufficient to form the Scientific Committee, as required by Article 5 paragraph 3, and for a period not exceeding eighteen months which can be extended by the Academic Senate on reasoned request.

