



Course Information

Reference Number :

TITLE OF THE TRAINING ACTIVITY

IN THE LANGUAGE OF TUITION

English : School' Robotics

TYPE OF TRAINING ACTIVITY

TRAINING AIMED AT PARTICIPANTS RECEIVING

A COMENIUS GRANT (SCHOOL EDUCATION)

ORIGIN OF THE TRAINING

COURSE RESULTING FROM A PREVIOUS SOCRATES PROJECT (COMENIUS, LINGUA, ADULT EDUCATION, GRUNDTVIG, ERASMUS, MINERVA)

SOCRATES PROJECT NO. : 110157-CP-1-2003-1-PT-COMENIUS-C3

THEMATIC FIELD OF THE TRAINING

IN-SERVICE TRAINING IN THE FIELD OF SCIENCES

- Maths, chemistry & physics
- Natural sciences, biology and environment
- New technologies

LANGUAGES USED FOR THE TRAINING

MAIN LANGUAGE: English

OTHER LANGUAGE/S USED DURING THE TRAINING:

- French
- Portuguese
- Spanish

LANGUAGE VERSION(S) IN WHICH MATERIALS WILL BE PROVIDED:

- English

EDUCATION SECTOR OF THE TRAINING PARTICIPANTS

SCHOOL AND PRE-SCHOOL EDUCATION

- Pre-Primary
- Primary
- General secondary
- Vocational/Technical secondary
- Special education for disabled persons

ADULT EDUCATION

- Adult education provider
- Second chance or remedial education
- Adult education for disabled persons
- Higher education institution offering outreach courses for adults

TARGET AUDIENCE

- Teachers (Pre-school, primary, secondary, vocational, adult, special needs)

- Teacher trainers
- Careers officers, educational guides and counsellors
- Headteachers/principals/managers of schools/organisations offering adult education
- Members of students/teachers councils in adult education

INSTITUTION ORGANISING THE TRAINING

NAME OF THE ORGANISATION: Hands-on Science Network

STREET AND NUMBER: Rua 1 de Maio, 2, 2º

POSTCODE: 4730-734 -

TOWN / CITY: Vila Verde

COUNTRY: Portugal

WEBSITE: www.hsci.info

ORGANISER/S OF THE TRAINING:

PERSON 1: Manuel Filipe Costa, Professor

TEL NR: 351/253/604320

FAX NR: 351/253/324102

EMAIL: mfcosta@fisica.uminho.pt

FULL DESCRIPTION OF TRAINING CONTENTS

IN THE LANGUAGE OF THE TRAINING: (EN)

Preparation The course will be held in Braga, Portugal, in September 2008 and 2010; April 2009 and 2010 in Playa de Pazarina, Pontevedra, Spain; Bucarest, Romania October 2010.
Science and Technology are fundamental to the sound development of our knowledge-based society. In one hand a fast development of science and technology is required to maintain world's sustainable development. On the other hand there is a major lack of human resources in this field and the number of students willing to take science and or technology studies at EU schools is decreasing every day.

Objectives Pedagogical approaches that motivate and bring the students to an active role in the learning of science and technology subjects, should be studied, implemented and disseminated. Hands-on experimentation in the classroom have proved success in raising Science&Technology learning but also in improving essential skills as autonomy and responsibility, critical reasoning, self-organisation self-commitment self-motivation and reward, method and social interaction. If this hands-on practice is complemented or involves building, constructing or developing a final product to perform a specific task, its success can be highly potentiated. Especially if the subject dealt with is of innovating striking actuality as robotics is to all of us but especially to our youngsters.

The experience of the organiser and lecturers of this course in many different projects in different countries and different types of schools and student's age levels, have demonstrated clearly how successful these activities can be.

The goal of this course is to provide schoolteachers, from primary secondary and vocational schools, both theoretical but specially practical information and tools, pedagogical and technical, that may enable them to begin teaching robotics to their students. Teaching robotics itself as a topic of utmost actuality and importance, but also as a vehicle to convey the learning of important knowledge and competencies in a variety of disciplines. We also expect that those teachers will become promoters of further activities in this field.

Methodology Our methodological training approach is focused in providing teachers the basic theoretical information allowing the immediate learning of robotics and in-school teaching strategies in a practical hands-on way.

Follow-up The participants will receive ahead written material on hands-on and constructivism pedagogical theories. Description of the robots to be used as well as the FLL and Robocup competitions will be provided in advance. Detailed bibliographic list will be provided. The course will begin with a presentation of the theme robotics followed by an in-depth presentation and discussion of the hands-on experiments and constructivism teaching/learning approaches. Theories will be presented as well as practical examples. Particular issues of great importance as the use of ICT and gender problems will be discussed and examples of good practice presented. Two target groups will be identified and differentiated approaches presented: primary and secondary education. From a certain level of development of the course parallel practical sessions will be delivered for teachers of those different school levels. The organisation of festivals and robot's contests has proved to be very important in the success of these kinds of activities. In this subject practical questions will be presented and discuss. Support material will be provided. The course will end with a robotics festival where students of Portuguese schools (and probably also from France) will present their robots and compete in a variety of robots' competitions. Close interaction between our trainees and the students will happen. We will try to induce the establishment of cooperation projects between the schools of the teachers participating in the training course. In the end we hope that several Comenius 1 school and lingua projects could be prepared or delineated. Open and friendly two folded contacts between trainers and trainees will be maintained after the end of the school. The evaluation of this first training course will be of utmost important for next courses in this topic to be organised in the following months and years.

PROGRAMME OF THE TRAINING ACTIVITIES (DAY BY DAY)

IN THE LANGUAGE OF THE TRAINING:

Every day: Coffee break - 11:00 and 16:00; Lunch 12:30; 19:30 Dinner
(for courses taking place in Spain all activities will begin one hour latter)

1st day

18:00 Registration

20:00 Welcome dinner

2nd day

9:30 Opening and presentation, M. F. Costa

10:00 What is robotics? F. Ribeiro

11:30 Hands-on teaching and learning of science M. F. Costa

14:30 Constructivism. Background and motivation S. Gatt

17:00 Discussion

3rd day

9:30 Robotics on primary and secondary schools P. Michaelides

10:00 Constructivism. Theory and practice 1 S. Gatt

11:30 Constructivism. Theory and practice 2 S. Gatt

14:30 Primary robotics. Design and construction M. F. Costa; J. Fernandes

16:30 Primary robotics. Programming M. F. Costa; J. Fernandes

18:00 Discussion

4th day

9:30 Girls and robots. Gender issues. M. Müllerburgh

11:30 Constructivism. Theory and practice 3 S. Gatt

14:30 Secondary robotics M. F. Costa
 16:30 Secondary robotics. Mechanics and electronics E. Pinto, J. Cunha
 18:00 Discussion
 5th day
 Free day. Optional visits to local schools and interaction with local teachers and students
 6st day
 9:30 Sensors and programming E. Pinto, J. Cunha
 11:30 Secondary robotics. Programming E. Pinto, R. Batista
 (practical parallel sessions:)
 14:30 Primary robotics J. Fernandes, J. Anagnostakis
 14:30 Secondary robotics E. Pinto, J. Cunha
 18:00 Discussion
 7th day
 9:30 How to organise a robotics festival M. F. Costa; J. Fernandes
 (practical parallel sessions:)
 11:30 Primary robotics R. Batista, J. Anagnostakis
 11:30 Secondary robotics E. Pinto; C. Lima
 14:30 Primary robotics J. Fernandes, R. Batista, J. Anagnostakis
 14:30 Secondary robotics E. Pinto; C. Lima
 18:00 Discussion
 8th day
 9:30 Comenius school cooperation projects. Setting-up. M. F. Costa, P. Michaelides
 11:00 Course' evaluation and conclusion
 14:30 Robotics festival (interaction with students)
 19:30 Farewell dinner
 9th day
 Departure

TYPE OF CERTIFICATION OF ATTENDANCE AWARDED

IN THE LANGUAGE OF THE TRAINING:

Certificate of attendance including description of training content and time input

ENGLISH: Certificate of attendance including description of training content and time input

INFORMATION ON COURSE SESSIONS

SESSION 1

DATE OF START:	02/09/2008	TIME OF START:	18:00
DATE OF END:	10/09/2008		
	TIME OF END:	09:00	
Deadline for registration:	18/07/2008		

HOST INSTITUTION EQUAL TO ORGANIZER INSTITUTION:

STREET AND NUMBER: Campus de Gualtar
NAME OF HOST INSTITUTION: Universidade do Minho
 POSTCODE: 4710-057
 TOWN / CITY: Braga
 COUNTRY: Portugal

Nearest big city: Porto

Distance: 50km

CONTACT PERSON FOR THIS COURSE SESSION, NAME AND TITLE:

Manuel Filipe Costa, Professor

TEL NR: 351/253/604320
 FAX NR: 351/253/324102
 EMAIL: mfcosta@fisica.uminho.pt

IDENTIFICATION OF THE TRAINER/S: NAME, PROFESSIONAL QUALIFICATION, ROLE DURING THE TRAINING:
 MICHAELIDES, P.; PROF., UNIV. KRETE -GATT, S.; PROF., U. MALTA - RIBEIRO, F.; PROF., U. MINHO -COSTA, M.; PROF., U. MINHO -
 MULLERBURGH, M.; FRAUNHOFER I. -LIMA, C.; TEACHER, ES D. MARIA -BATISTA, R.; ES V. VERDE -PINTO, E.; EP EIFFEL -FERNANDES, J.;
 EP CE

MAXIMUM NUMBER OF PARTICIPANTS ENVISAGED:	30
FEE IN € FOR ACCOMMODATION AND MEALS :	700.00

Accommodation & all meals

PARTICIPATION / COURSE FEE IN €	750.00
TOTAL COURSE FEE PER PARTICIPANT IN €	1450.00
CANCELLATION FEE IN € (WHERE APPLICABLE):	0

SESSION 2

DATE OF START:	03/04/2009
DATE OF END:	11/04/2009

HOST INSTITUTION EQUAL TO ORGANIZER INSTITUTION:

STREET AND NUMBER: Hotel Oca Galatea, Paxarinas, Portonovo,
NAME OF HOST INSTITUTION: Hands-on Science Network
 POSTCODE: 36970
 TOWN / CITY: Pontevedra
 COUNTRY: Spain

Nearest big city: Vigo(Spain)

Distance: 50km

CONTACT PERSON FOR THIS COURSE SESSION, NAME AND TITLE:

Manuel Filipe Costa, Professor

TEL NR:

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MAXIMUM NUMBER OF PARTICIPANTS ENVISAGED:

30

FEE IN € FOR ACCOMMODATION AND MEALS :

750.00

Accommodation & all meals

PARTICIPATION / COURSE FEE IN €

700.00

TOTAL COURSE FEE PER PARTICIPANT IN €

1450.00

CANCELLATION FEE IN € (WHERE APPLICABLE):

0

SESSION 3

DATE OF START: 04/09/2009

DATE OF END: 12/09/2009

HOST INSTITUTION EQUAL TO ORGANIZER INSTITUTION:

STREET AND NUMBER:

NAME OF HOST INSTITUTION:

Universidade do Minho

POSTCODE:

4710-057

TOWN / CITY:

Braga

COUNTRY:

Portugal

Nearest big city: Porto

Distance: 50km

CONTACT PERSON FOR THIS COURSE SESSION, NAME AND TITLE:

Manuel Filipe Costa, Professor

TEL NR:

351/253/604320

FAX NR:

351/253/324102

EMAIL:

mfcosta@fisica.uminho.pt

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MAXIMUM NUMBER OF PARTICIPANTS ENVISAGED:

30

FEE IN € FOR ACCOMMODATION AND MEALS :

700.00

Accommodation & all meals

PARTICIPATION / COURSE FEE IN €

700.00

TOTAL COURSE FEE PER PARTICIPANT IN €

1400.00

CANCELLATION FEE IN € (WHERE APPLICABLE):

0

SESSION 4

DATE OF START: 09/10/2009

DATE OF END: 17/10/2009

HOST INSTITUTION EQUAL TO ORGANIZER INSTITUTION:

STREET AND NUMBER:

Magurelle

NAME OF HOST INSTITUTION:

National Institute for Plasma, Lasers and Radiation

POSTCODE:

85700

TOWN / CITY:

Bucharest

COUNTRY:

Romania

Nearest big city: Bucharest

Distance: 0km

CONTACT PERSON FOR THIS COURSE SESSION, NAME AND TITLE:

Manuel Filipe Costa, Professor

TEL NR:

351/253/604320

FAX NR:

351/253/324102

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MAXIMUM NUMBER OF PARTICIPANTS ENVISAGED:

30

FEE IN € FOR ACCOMMODATION AND MEALS :

650.00

	Accommodation & all meals	700.00
PARTICIPATION / COURSE FEE IN €		
TOTAL COURSE FEE PER PARTICIPANT IN €		1350.00
CANCELLATION FEE IN € (WHERE APPLICABLE):		0

12. DECLARATION BY THE TRAINING ORGANISER

" I the undersigned hereby declare that the information contained in this training description form is correct to the best of my knowledge. I accept the obligation to carry out an evaluation session as described in the *Guidelines for the submission of in-service training offers for school and adult educators*, and agree that the results of a separate on-line evaluation exercise by participants will be publicly available in the training database. I acknowledge that repeated negative results of the evaluation may lead to removal of the training activity from the database. "

Place:

Date:

Signature:

Name and title (position), in block capitals, of the signatory:

Surname:

First name:

Title (position):

Official stamp of the applicant body: