COURSE INFORMATION

Participation in the course, accommodation and journey can be sponsored by the EU within its programme

"Lifelong Learning Programme"

For details please contact your National Agency of Socrates:

http://europa.eu.int/comm/education/programmes/socrates/nat-est_en.html

You can find the course in the European Union Comenius-Grundtvig Training Database:

http://ec.europa.eu/education/trainingdatabase/search.cfm

under the reference number

DE-2009-884-001

Title of the course
GENE TECHNOLOGY IN EDUCATION— cloning experiments in the laboratory and the teaching method SOL (Self Organized Learning or self determined learning)

Thematic field
Main field: General IST Courses
Secondary field: Pedagogy and didactis

School level
Secondary education, vocational / technical education, adult education

Target audience
Teachers and Trainers of Biology and Biocemistry, Teacher Trainers, Headmasters

Language used in the course
English

Dates of the course
DATE OF START: 11th October, 2009
DATE OF END: 17th October, 2009

Number of places available
Maximum number of participants: 24

Price in Euro per participant
Accomodation & Subsistance: 550 €
Course fee (including materials): 750 €
Total: 1300 €
Cancellation fee: 150 €

Details of organizing institution
Name of contact person: Mr. Ulrich Mok
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Teacher's Training
Supported by the EU

GENE TECHNOLOGY IN EDUCATION
Cloning Experiments in the Laboratory and the Teaching Method Self Organized Learning

11th—17th October, 2009

Oberstufenzentrum
Lise Meitner, Berlin

DESCRIPTION OF COURSE CONTENTS

In the European Union gene technology is a highly controversially discussed issue. The moral acceptance of scientific progress and technologies differs enormously in the various European countries. However, gene technology is an issue which scientists, teachers, instructors and students cannot avoid dealing with. The seminar's intention is to offer a practical course of gene technology (cloning experiments in the laboratory) and to promote the teaching method **SOL** (Self Organized Learning—or Self Determined Learning). Additionally, it provides the opportunity to discuss and evaluate different ethical opinions and thus strengthen the European collaboration among teachers.

Practical work in the laboratory: Cloning Experiment

- Transformation of a gene into a host cell (bacteria)
- Growing of transformants
- Isolation of Plasmid DNA
- Restriction and Polymerase Chain Reaction·(PCR)

The teaching methodology SOL:

- Studying the basic principles of SOL
- Studying different methods of exercise
- Preparing an Advance Organiser with the subject Genetics
- Guide lines of group assessment and evaluation

We have chosen the subject Gene Technology mainly because the amount of genetic knowledge and the applications of gene technology have broadened to a great extent in recent decades. Many of the discoveries and applications either have or might have social relevance in the future due to applications of genetics in medicine, agriculture and food design. These developments may have great impact on the personal situation as well as on the job situation of the students. The principles of DNA-cloning are basic knowledge for a profound understanding of genetic engineering. The teaching methodology SOL promotes not only the students theoretical and scientific knowledge, but also facilitates the development of key transferable (soft) skills such as autonomous learning, preparing summaries and oral reports, peer tutoring, fostering a sense of responsibility and social conscience, which are often neglected in traditional lessons.

PROGRAMME OF THE COURSE

GENE TECHNOLOGY IN EDUCATION

Oberstufenzentrum Lise Meitner Berlin
11th—17th October, 2009

Sunday, 11th October
19:00 Welcome and dinner

Monday, 12th October
9:00 Introduction to the programme
9:30 Adult education in Germany—the system of education
10:15 Coffee break
10:45 Get to know the training center Oberstufenzentrum Lise Meitner
11:45 General introduction of a cloning experiment, Green Fluorescent Protein
11:15 Introduction to the experiments of the week
12:30 Lunch break
14:00 Boat trip in the city center

16:00 Guided City Tour
20:00 Dinner

Tuesday, 13th October
8:15 Laboratory:Transformation of E.coli with GFP and plating of transformed cells

11:00 Gene Technology and its implications in Germany, *Prof. Dr. R. Kunze, Free University Berlin*
12:30 Lunch break
14:00 Reception at the municipality Berlin-Neukölln
20:00 Dinner

Wednesday, 14th October
9:00 Introduction: Have you ever heard of Self Organized Learning? Main aspects of SOL
9:30 Main aspects of SOL
10:30 Coffee break
10:45 SOL: Jigsaw classroom
12:00 Lunch break
13:00 SOL: Jigsaw classroom
15:30 Coffee break
15:15 Laboratory: Growing of transformants in liquid media over night
20:00 Dinner

Thursday, 15th October
9:00 Self Organized Learning – any questions?
9:15 Triangle talk / representatives
9:45 Feedback
10:00 How to use and construct an advance organizer
11:45 Presentation, final turn
12:30 Lunch break
13:30 Laboratory: Isolation of plasmid-DNA, restriction, PCR
19:30 Concert in the Philharmonie

Friday, 16th October
9:00 Laboratory: Electrophoresis and evaluation of the transformation experiments
10:30 Coffee break
10:45 Laboratory

12:30 Lunch break
13:30 Evaluation of the seminar
15:00 Coffee break
15:30 Introduction into the use of a teaching module "self organized learning and gene technology"
20:00 Dinner

Saturday, 17th October
9:00 Farewell breakfast