Teacher's Training
Supported by the EU

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

25th Sep — 1st Oct, 2011

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 also 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
25th Sep— 1st Oct, 2011

Sunday, 25th September

19:00 Welcome and dinner

Monday, 26th September

9:00 Introduction to the programme
9:30 Education in Germany — the system of education, getting to know the training centre Oberstufenzentrum Lise Meitner
11:00 Coffee break
11:15 Self organised learning (SOL): General introduction, schedule, rules, advance organiser, forming jigsaw groups, expert groups
12:45 Lunch break
14:00 SOL: expert groups, jigsaw groups
16:00 Introduction to the experiments of the week
20:00 Dinner

Tuesday, 27th September

9:00 "Plant biotechnology: current status and new developments" *Prof. Dr. Reiner Kunze, Free University Berlin*
10:45 Coffee break
11:00 SOL: expert groups, jigsaw groups
12:45 Lunch break
13:45 Laboratory: Transformation of *E.coli* with GFP and plating of transformed cells
20:00 Dinner

Wednesday, 28th September

09:00 Laboratory: Growing of transformants in liquid media over night
09:30 Coffee break
09:45 SOL: evaluation
12:00 Lunch break
13:30 Boat trip in the city centre and guided city tour
20:00 Dinner

Thursday, 29th September

09:00 Introduction to the use of a teaching module "Self Organised Learning and gene technology"
10:00 Coffee break
10:15 "Gene Technology – a highly controversially discussed issue within Europe" Dr. Vetter, German ethic council
12:00 Lunch break
13:15 Laboratory: Isolation of plasmid-DNA, restriction, PCR
20:00 Concert in the Philharmonie or Konzerthaus am Gendarmenmarkt

Friday, 30th September

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
20:00 Dinner

Saturday, 1st October

09:00 Farewell breakfast

COURSE INFORMATION

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

"Lifeong Learning Programme (LLP)"

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

http://ec.europa.eu/education/trainingdatabase/search.cfm
under the reference number

DE-2011-1133-001

Title of the course

GENE TECHNOLOGY IN EDUCATION 2011 cloning experiments in the laboratory and the teaching method SOL (Self Organized Learning or self determined learning)

For details about the procedure of application please contact your National Agency of LLP (deadline for application: 29/04/2011)

http://ec.europa.eu/education/lifelong-learning-programme/doc1208_en.htm

Thematic field

Main field: In-service training in sciences
Secondary field: Natural sciences, biology and environment

School level

Secondary education, vocational / technical education, adult education

Target audience

Teachers and Trainers, Teacher Trainers, Headmasters

Language used in the course

English

Dates of the course

DATE OF START: 25th September, 2011
DATE OF END: 1st October, 2011

Number of places available

Maximum number of participants: 24

Price in Euro per participant

Accommodation and Subsistence: 550 €
Course fee (including materials): 750 €
Total: 1300 €
Cancellation fee: 200 €

Details of organizing institution

Name of contact person: Mr. Ulrich Mok
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BIC / SWIFT: DEUTDEDB110
Name of bank: Berliner Bank

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