

Technical University of Denmark

DTU Summer School - 2007

Biotechnology • Chemical Engineering • Telecommunication • Nanotechnology and the Environment



Welcome to DTU Summer School - 2007

DTU continues to develop new offers for international students. In 2006 DTU launched the DTU Summer School program for especially skilled international students of engineering and natural sciences.

Unlike other summer school offers, DTU Summer School courses are free of charge, and on top of that the best students are granted a travel scholarship.

DTU offers high standard education and therefore wants to attract the best students by scholarship awards. This is enabled thanks to the support from the DTU industry platform.

It is my hope that this very special offer has inspired you to accept the challenge and that you will apply for one of the limited number of seats at the DTU Summer School - 2007 program.



*Rector Lars Pallesen,
Technical University of Denmark*

DTU

Technical University of Denmark (DTU) is one of the top class European technical universities and the leading Scandinavian university for engineering research and education.

DTU is a relatively small, but exclusive university of high standards hosting 6.000 students of which 800 are from abroad. DTU offers excellent study facilities with state-of-the-art experimental facilities, work shops and laboratories. Research

and teaching are performed by approximately 800 internationally recognized professors and associate professors. In 2005, 1100 students graduated from the DTU degree programs. With more than 600 PhD students DTU is a true graduate university focusing on research based education.

DTU Summer School – 2007

– for dedicated international students

The 2007 version of the DTU Summer School Program offers new courses with instruction entirely in English language for BSc students of engineering or related natural science programs. Foreign students from the EU and from DTU partner universities outside EU are invited to come to DTU for a 3 weeks period during which they will follow one of the offered DTU Summer School courses.

The DTU Summer School - 2007 includes the following English taught courses:

Title	Seats	Scholarships	Period
Biotechnology	25	10	From 16/7 to 3/8 2007
Telecommunication	25	10	From 16/7 to 3/8 200
Chemical Engineering	10	5	From 16/7 to 3/8 2007
Nanotechnology and the Environment	25	None	From 13/8 to 31/8 2007

The DTU Summer School stay comprises:

- Thoroughly prepared academic and scientific course contents
- General information about DTU and its many study offers
- Introduction to relevant sponsor companies
- Social events in an international atmosphere

After passing the course the student is awarded a certificate and ascribed 5 ECTS study credits, which may be transferred to the students current study program.

This year DTU Summer School is free of charge. In addition, a number of the best qualified applicants are awarded a travel scholarship of EURO 225. Except for the Nanotechnology and the Environment course, accommodation is free and DTU provides housing. Each student should be prepared to cover own living expenses (approximately EURO 200).



Biotechnology

5 ECTS

www.dtu.dk/English.aspx

Objective: To introduce students to the important field of modern industrial biotechnology based on the fungal cell factory.

Contents: The course will focus on several aspects of biotechnology. Three topics are investigated experimentally while the rest are dealt with theoretically. Exercises with industrially important microbial strains are performed in top modern student's laboratories well suited for microbiology, biochemistry and molecular biology experiments.

Experimental projects:

- Fungal biodiversity
- Industrial biotechnology
- Fungal genetics

Theoretical projects:

- Lipids and proteins
- Applied enzyme technology
- Medical microbiology

Evaluation: Poster presentations. Assessment: Approved/not approved.

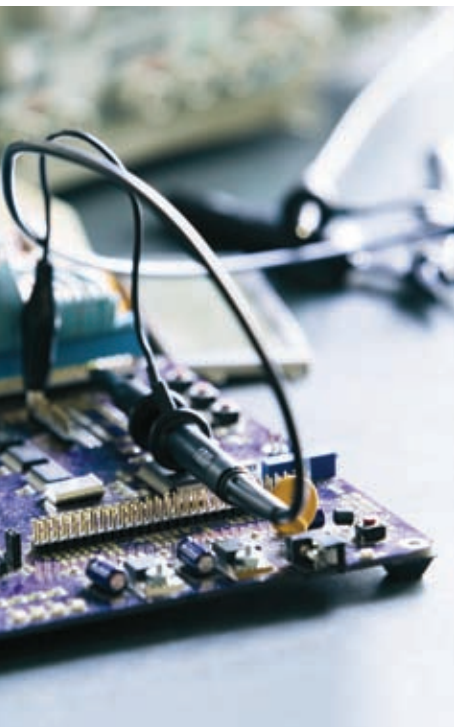
Coordinator

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Telecommunication

5 ECTS

www.dtu.dk/English.aspx

Objective: To provide students the combination of theoretical basis of telecommunication systems with the learning-by-doing concept. This is done by giving the students the opportunity to test theories and ideas through experiments performed in state-of-the-art student's laboratories.

Contents: The course will focus on a selected number of topics within telecommunication. Through lab-exercises, teamwork and report writing, the students will be introduced to a number of research and development projects for which DTU is especially well known internationally:

- Experiments in lasers and optics for communication
- Modeling and simulation of a communication network
- Application of Information and Communication Technology (ICT)

Evaluation: Written reports. Assessment: Approved/not approved.

Coordinator

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Chemical Engineering

5 ECTS

www.dtu.dk/English.aspx

Objective: Chemical and biochemical unit operation laboratory course. During experiments with process equipment in semi technical scale the possibilities and limitations of the theory are compared with the practical experiences. In addition an improved understanding of the processes, equipment design, operational conditions, measuring techniques etc. is achieved.

Contents: Experimental work in teams of 2 persons with 4 exercises, selected among: Distillation, absorption, liquid flow and pumping, various drying technologies, filtration, membrane filtration, centrifugation, extraction, crystallisation.

In addition, the course includes three mandatory visits to chemical production sites.

Evaluation: Written reports on the exercises. Assessment: Approved/not approved.

Coordinator

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Nanotechnology and the Environment

5 ECTS

www.dtu.dk/English.aspx

Objective: To provide students of Nanotechnology and Environmental Technology an insight in the possible environmental, human health and ethical perspective in present and future application of nanotechnology.

Contents: For all emerging technologies the issue of adverse side-effects should be included in the technology development phase, but history shows that it has often been overlooked.

In this course the focus is on identification and evaluation of risks and ethical considerations related to the potential widespread application of nanotechnology in our future society. Five course days are used for workshops with invited Danish experts (nano scientists, toxicologists, environmental scientists, ethicists and regulators) as instructors.

The students will work in teams to prepare a report on environmental, human health and ethical considerations on a specific nanomaterial/product.

Evaluation: Written reports on the exercises. Assessment: Approved/not approved.

Coordinator

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Application

- Who can apply?
 - EU citizens
 - Students from non-EU partner universities
- Application deadline is May 1, 2007.
- Download and print out the DTU Summer School application form at www.dtu.dk/English.aspx.
- Fill in the form and send it by surface mail to the respective course coordinator

Please remember to send transcripts of your grades obtained in relevant courses and to fill in all requested information.
DTU recommends that you apply as early as possible as the number of seats in each course is limited.

Accommodation

Except for the *Nanotechnology and the Environment* course, accommodation is free and all admitted students will stay in the DTU Campus Village. Upon arrival the students will be charged a deposit of EURO 100. The deposit will be returned upon departure provided the room is left clean and unspoiled.

Admission requirements

- The academic level is set for students at the 5th or 6th semester of their engineering or natural science program.
- English language proficiency is required.
- A thorough basic knowledge in three out of four of the following disciplines is required:

Biotechnology:

Biochemistry
Genetics
Microbiology
Molecular Biology

Telecommunication:

Computer Science
Information and Data Transmission
Computer Networks
Telecommunications

Chemical Engineering:

Process Design
Heat and Mass Balances
Kinetics and Reaction Technology
Theoretical Unit Operations

Nanotechnology and the Environment:

Nanotechnology
Chemistry
Physics
Environmental Science

A photograph of a group of students sitting on a concrete ledge outdoors. In the foreground, three students (two women and one man) are looking at a laptop and some papers. The man is typing on the laptop. They are sitting on a concrete ledge. In the background, other students are sitting on the grass, and there are modern buildings and trees under a clear blue sky.

Travel Scholarships

The DTU industrial platform has generously established a number of Travel Scholarships for The DTU Summer School program :

Biotechnology

10 scholarships sponsored by DANISCO A/S

Telecommunication

10 scholarships sponsored by NOKIA Denmark

Chemical Engineering

5 scholarships sponsored by (to be announced)

Travel Scholarships of EURO 225 are awarded the best qualified students of each program.

All admitted students will be informed shortly after the May 1 deadline whether he or she has been awarded a travel scholarship.

Payment of the scholarship will take place after the course has been successfully passed.

www.dtu.dk/english/education/summerschool.aspx

Scholarships and accommodation

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