

Ecosan Norway

ECOLOGICAL SANITATION • AGRICULTURAL UNIVERSITY OF NORWAY

ENVIRONMENTAL RESEARCH-NLH

Course invitation: Appropriate sanitation in the developing world

Worldwide, two of the major causes of mortality and morbidity are unsafe water supplies and inadequate disposal of human excreta. Sanitation inadequacies also hinder economic and social development, constitute a major impediment to reducing poverty, and inevitably lead to degrading the environment. Unfortunately, the people in poverty stricken areas – especially infants and young children – suffer the most. This calls for appropriate solutions that are affordable considering local constraints.



Slum dwellers defecate into open sewers and play along open sewers.
Photo: J. Heeb

applied in developing countries, and (2) to explain, in-depth, the principles of ecological engineering. Participants are expected to include professionals from consulting firms (e.g. civil engineers), NGO personnel (field and administrative), public officials (e.g. health and foreign service), research scientists, and students from various disciplines.

All presentations are in English.

Time and Location

The course takes place at the Agricultural University of Norway, Ås, 30 km from Oslo.



Lectures take place daily 08:30 – 17:00 on the campus of the Agricultural University of Norway, Ås, Norway, 30 km south of Oslo. All lectures will be held at the Department of Mathematical Sciences and Technology. Excursion to Ecosan facilities will supplement the lectures.

Course Credit

Students completing the entire course, including assignments, will be awarded 5 ECTS-credits (European Credit Transfer System). Other participants will be awarded a course diploma.

The focus of this course is to explore ecological solutions for developing countries. Specifically, recycling and natural waste treatment systems will be examined. Case-studies will be presented by sanitation specialists, followed by analysis of associated issues – both technical and social. The range of case studies covers Asia, Africa and Latin America. And the scope of analysis offered by engineers, scientists, and public officials is wide and timely.

Target group

The course is designed for both the professional and student. Its purpose is two-fold: (1) to illustrate how ecological sanitation is

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Water well (right) adjacent to an open sewer. Photo: J. Heeb

Course content

Monday, May 24

Fundamentals of ecological sanitation

Tuesday, May 25

Sustainable urban and rural sanitation

Wednesday, May 26

Sanitation under stress

Thursday, May 27

Wetlands, ponds and aquaculture for wastewater treatment

Friday, May 28

Social, economic and health issues related to sanitation

The principal lecturers:

Professor **Petter D. Jensen**
(Agr. Univ Norway)

Dr. **Johannes Heeb**
(Seecon Switzerland)

Professor **Thor-Axel Stenström**
(Linköping Univ. Sweden)

Chief eng. **Heinz-Peter Mang**
(GTZ Germany)

Assoc. prof. **Håkan Jönsson**
(Agr. Univ. Sweden)



Course schedule

Monday	Tuesday	Wednesday	Thursday	Friday
Fundamentals of ecological sanitation Topics: <ul style="list-style-type: none"> • The ecosystem approach • Toilets and handling of faecal matter • The urine separating concept • Integrated waste and wastewater treatment • Bioenergy production • Health aspects of recycling • Planning implementation and upscaling Demonstrations <ul style="list-style-type: none"> • Eco-toilets • Biofilters • Biofertilizer application 	Sustainable urban and rural sanitation Topics: <ul style="list-style-type: none"> • Compost public toilets • Dry sanitation • Solar vacuum toilets • Composting excreta • Blackwater treatment for urban agriculture • Urine as fertilizer • Biogas production • Greywater treatment • Recycling greywater 	Sanitation under stress Topics: <ul style="list-style-type: none"> • Post-war sanitation • Disaster relief • Developments in Afghanistan • Refugees camps • Safeguarding water • From crisis to sustainability 	Wetlands ponds and aquaculture for wastewater treatment Topics: <ul style="list-style-type: none"> • Wetlands for treatment and bioproduction • Designing treatment ponds and wetlands • Wastewater reuse • Examples from India and China 	Social economic and health issues related to sanitation Topics: <ul style="list-style-type: none"> • Gender • Employment • Finance • Social acceptance and health risks • Religious issues • Income generation • Public involvement

Time and Location

The course takes place daily 9:00 – 16:00 on the campus of the Agricultural University of Norway, Ås, Norway, 30 km south of Oslo. All lectures will be held at the Institute for Agricultural Engineering.

Course Credit

Students completing the entire course, including assignments, will be awarded one Norwegian course-credit. Other participants will be awarded a course diploma.

Accommodations and Meals

It is recommended that participants from outside Scandinavia arrive on Sunday evening, May 23.

Pentagon Dormitory, 5-minute walk to lecture hall
 single room/night (breakfast not included) NOK 450

Ås Hotel, 20-minute walk to lecture hall
 single room/night (includes breakfast) NOK 635

For students only: Free classroom space for sleeping is available. You need to bring your own sleeping bag. Showers are available. Reservation required by May 5.

Meals are not included in the registration fee. Cold lunches are available in the lecture hall cantina. Dinners are available at restaurants in Ås (15-minute walk), Drøbak (10-km from campus), Ski (10-minutes by train or bus) and Oslo (30-minute by train).

Course Fee (does not include accommodation and meals)

Individual NOK 3200

NGO NOK 1100

Student NOK 750

For those who wish to attend only a portion of the course, the daily fee is NOK 750.

A limited number of scholarships are available part finance attendance on the course

Registration deadline May 5.

Return Registration Coupon to:

Petter Jenssen, Dept. of Mathematical Sciences and Technology

Agricultural University of Norway

PO Box 5003, N - 1432 Aas, Norway

FAX: +47 64 94 88 10

TEL: +47 97 17 78 25

or by e-mail: ecosan@nlh.no

Registration is final. A charge of NOK 1000 will be made for cancellations. Full course fees will be charged for non-attendance. An invoice for course fees will be sent with a confirmation of registration.

Questions on course content can be directed to
 e-mail: ecosan@nlh.no www.ecosan.no

Appropriate sanitation in developing world Ecological solutions

May 24.-28. 2004 The Agricultural University of Norway, Ås

Complete name: _____

Institution: _____

Address: _____

Postal Code: _____

Town: _____

Country: _____

Daytime phone: _____

Fax: _____

Date: _____

Signature: _____

Entire course registration, May 24.-28.

Daily registration

Monday, May 24.

Tuesday, May 25.

Wednesday, May 26.

Thursday, May 27.

Friday, May 28.

CATEGORY

Student

Individual

Engineer

Administrator

Teacher

Scientist

Other

ACCOMMODATION

University Dormitory

Ås Hotel

Classroom

Arrival: day _____ time: _____ Departure: day _____ time _____