



Programme version 30 June 2010

2nd edition FOKUZ Marine Master Course 'How does the sea work?'

Texel, 4 – 16 July 2010

Organization: NIOZ and NIOO-CEME

Sunday 4 July 2010 from 14:00 onwards: arrivals master students in guesthouse Potvis
(*note: no evening meal by organisation*)

Monday 5 July 2009

07:30 – 08:15 Breakfast Potvis

Morning: at NIOZ, Ocean Lecture Hall

08:30 – 08:45 Welcome Prof.dr. Herman Ridderinkhof (NIOZ / UU)

08:45 – 09:30 Intro Marine Biology Prof.dr. Jaap van der Meer (NIOZ / VU)

09:30 – 09:35 short break

09:35 – 10:20 Intro Physical Oceanography Herman Ridderinkhof

10:20 – 10:30 coffee break

10:30 – 11:15 Intro Marine Geology Prof. dr. Geert-Jan Brummer (NIOZ / VU)

11:15 – 11:20 short break

11:20 – 12:05 Intro Chemical Oceanography Dr. Eric Epping (NIOZ)

12:05 – 12:10 short break

12:10 – 12:25 NIOZ film

12:30 – 13:00 Lunch in canteen

13:00 – 14:45 guided tour through the institute

14:45 – 15:00 tea break

15:00 – 16:00 'crash' courses:

Beryl Hall (near canteen):

terminology physical oceanography for biology students by Dr. Hendrik van Aken (NIOZ)
and in the Ocean Room (canteen upper floor Ocean Workshop):

terminology biological oceanography for physical students by Jaap van der Meer

16:15 – 17:45 Mokbaai excursion by Jaap van der Meer & Rob Dekker (NIOZ)

18:00 - Dinner in Potvis

Field projects:

A Hydrography	Supervisor Hendrik van Aken (FYS), plus co-worker Jenny Ullgren
B Plankton	Supervisor Corina Brussaard (BIO), plus co-workers Anna Noordeloos, Jordi Segers etc
C Multibeam survey	Supervisor Jens Greinert (GEO), Plus co-workers Henk de Haas, Wim Boer etc
D Sediment cores	Supervisor Geert-Jan Brummer (GEO) plus co-workers Henko de Stigter, Rineke Gieles etc
E Benthic communities	Supervisor Katja Philippart (MEE) plus co-workers Willem Diderich and Lodewijk van Walraven
F Mussel bank patterns	Supervisor Johan van de Koppel (CEME, Yerseke) plus co-worker Martien Baars
G Epibenthic predators	Supervisor Jaap van der Meer (MEE) plus co-workers Hans Witte and Andreas Waser

Tuesday 6 July **Fieldwork A Hydrography & B Plankton**

07:30 – 08:15 Breakfast Potvis

During 08:30 – 14:30 ‘anchor station’ by Navicula during flood phase at station in Marsdiep

LT 08:15 -80 cm

HT 13:47 +57 cm

Navicula anchored at the intended position of the tidal power plant

Transfer of samples (nutrients, plankton, etc) by Stern to NIOZ plus sample processing in various labs. All students involved, at 3 alternating sites : labs, Stern, Navicula

12:15 – 13:15 Lunch package or lunch in canteen

till 14:45: processing of samples Navicula in various labs

14:45 – 15:00 tea break

15:00 – 15:45 bike transfer to Oudeschild

16:00 – 18:00 sailing on loodsbotter ‘Texelstroom’

18:30 - *Dinner in restaurant Texel Catering, Oudeschild*

Wednesday 7 July **Fieldwork all projects A - G**

07:30 – 08:15 Breakfast Potvis

Fieldwork A Hydrography, B Plankton, C Multibeam, D Coring, E Benthos

11 students to Navicula, 08:30 – 16:00 survey Navicula to Vlieter

(CTD profiles, water samples, multibeam, gravity cores, boxcores)

(lunch on board)

16:00 – 17:30 processing gravity cores and other samples and measurements

Morning: Field work F Mussel bank patterns,
5 students with car transfer to De Cocksdorp sampling of mussels in young bank at low tide

Fieldwork G Epibenthic predators
5 students to Stern 08:30 – 16:00 **Balgzand, sampling of crabs at mussel bank/tidal flat**
(lunch on board)
16:00 – 17:30 processing samples and measurements
18:00 - *Dinner in Potvis*

Evening: field work F Mussel bank patterns,
5 students to Stern 19:00 – 21:30 **Balgzand, sampling of mussels in old bank** at low tide
- - - -

Thursday 8 July

07:30 – 08:15 *Breakfast Potvis*

Fieldwork A Hydrography, B Plankton, C Multibeam, D Coring, E Benthos
(other) 10 students to Navicula, 08:30 – 16:00 **survey Navicula to Vlieter**
(CTD profiles, water samples, multibeam, gravity cores, boxcores)
(lunch on board)
16:00 – 17:30 processing gravity cores and other samples and measurements

Morning: field work F Mussel bank patterns,
6 students with car transfer to De Cocksdorp sampling of mussels in young bank at low tide

Fieldwork G Epibenthic predators
5 students to Stern 08:30 – 16:00 **Balgzand, sampling of crabs at mussel bank/tidal flat**
(lunch on board)
16:00 – 17:30 processing samples and measurements

18:00 - *Dinner in Potvis*

Before, during and after dinner an inventarisation of the preference of students for one of the 7 field topics (in view of further sampling and processing and presentation)

- - - -

Friday 9 July

07:30 – 08:15 *Breakfast Potvis*

Morning lectures **Marine Biology**, Ocean Lecture Hall

08:30 – 09:15 Origin of life Prof.dr. Lucas Stal (NIOO-CEME/ UvA)

09:15 – 09:20 *short break*

09:20 – 10:05 Primary production Dr. Jacco Kromkamp (NIOO-CEME)

10:05 – 10:15 *coffee break*

10:15 – 11:00 Microbial foodweb Dr. Corina Brussaard (NIOZ)

11:00 – 11:05 *short break*

11:05 – 11:50 What goes up, must come down? Dr. Katja Philippart (NIOZ)

11:50 – 11:55 *short break*

11:55 – 12:40 Fisheries research Prof.dr. Jaap van der Meer (NIOZ / VU)

During the breaks final discussions and decisions on the distribution of the 7 topics over 21 students. Each topic with 3 subtopics and 3 students; each student will prepare during second week a 15 minute presentation for 16 July.

12:45 – 13:15 Lunch in canteen

13:30 – 17:30 **Further field work** and/or processing of samples and data by each of the 7 groups

A Hydrography

B Plankton

C Multibeam survey

D Sediment cores

E Benthic communities

F Mussel bank patterns

G Epibenthic predators

17:30 – 18:00 bike transfer to Den Hoorn

18:00 - Dinner in the garden/ home of Herman Ridderinkhof, Herenstraat 21, Den Hoorn

Students are allowed to stay in the dormitory rooms of Potvis during the weekend. There is no breakfast, lunch and dinner served, however.

Saturday 10 July

10:00 Geological excursion to dune area southwest Texel, guided by Henko de Stigter (GEO)

Sunday 11 July

Tip : visit De Slufter

Monday 12 July

07:30 – 08:15 Breakfast Potvis

Topics A & B

During the morning: 'anchor station' ebb phase

Tidal cycle sampling continued (see Tuesday 6 July)

HT 09:05 +73 cm

LT 15:26 -92 cm

Navicula anchored plus sample transfer by Stern plus sample processing in various labs

At least **6 students (groups A & B)** involved, at 3 alternating sites : lab, Stern, Navicula?

Afternoon: further processing of samples (plus 1 lecture?)

12:15 – 13:15 Lunch package (Navicula students) or lunch in canteen

14:45 – 15:00 tea break

till 16:30: processing of samples Navicula in various labs

Topics C-D-E-F-G

Other 15 students: lab measurements and data processing
(The new North Sea Hall is available and suitable for data processing)

18:00 - *Dinner in Potvis*

Tuesday 13 July

07:30 – 08:15 *Breakfast Potvis*

Morning lectures **Physical Oceanography**, Ocean Lecture Hall

08:30 – 09:15 Waves Dr. Theo Gerkema (NIOZ)

09:15 – 09:20 *short break*

09:20 – 10:05 Tides Prof.dr. Herman Ridderinkhof (NIOZ / UU)

10:05 – 10:15 *coffee break*

10:15 – 11:00 Estuaries Dr. Hendrik van Aken (NIOZ)

11:00 – 11:05 *short break*

11:05 – 11:50 Observations Dr. Hendrik van Aken (NIOZ)

12:00 – 12:30 *Lunch in canteen*

12:30 – 17:30 **various programs for each topic separately**, including additional field work
(like Multibeam survey on *Navicula* for small area between jetty and NIOZ harbour)
and including further sample and data processing
(The new North Sea Hall is available and suitable for data processing)

18:00 - *Dinner in Potvis*

Wednesday 14 July

07:30 – 08:15 *Breakfast Potvis*

Morning lectures **Marine Geology**, Ocean Lecture Hall

08:30 – 09:15 Genesis of marine sediments Prof. Dr. Geert-Jan Brummer (NIOZ / VU)

09:15 – 09:20 *short break*

09:20 – 10:05 Geology of the Wadden Sea Dr. Henk de Haas (NIOZ)

10:05 – 10:15 *coffee break*

10:15 – 11:00 Methane seeps Prof.Dr. Jens Greinert (NIOZ / Gent)

11:00 – 11:05 *short break*

11:05 – 11:50 Biomarker paleoceanography Dr. Stefan Schouten (NIOZ)

12:00 – 12:30 *Lunch in canteen*

12:30 – 17:30 **various programs for each topic separately** (see Tuesday 13 July)
including additional field work (if needed) and including further sample and data processing
(The new North Sea Hall is available and suitable for data processing)

18:00 - *Dinner in Potvis*

Thursday 15 July

07:30 – 08:15 Breakfast Potvis

Morning lectures **Chemical Oceanography**

08:30 – 09:15 Isotope chemistry Dr. Stefan Schouten (NIOZ)

09:15 – 09:20 short break

09:20 – 10:05 The carbondioxide system in seawater A.Hoogstraten MSc (NIOZ)
(for Prof.dr.ir. Hein de Baar (NIOZ / RUG))

10:05 – 10:15 coffee break

10:15 – 11:00 Organic contaminants Dr. Kees Booij (NIOZ)

11:00 – 11:05 short break

11:05 – 11:50 C, N, P and Si cycling Dr. Filip Meysman (CEME)

12:00 – 12:30 Lunch in canteen

12:30 – 17:30 Data processing in departments plus preparation of 21 presentations for the 7 topics
(The new North Sea Hall is available and suitable for data processing)

18:00 – 20:30 Evening BBQ at terrace canteen

Friday 16 July

07:30 – 08:15 Breakfast Potvis

Indigo Lecture Hall

08:30 – 09:15 presentations by three students (15 minutes each, incl discussion)

09:15 – 09:20 short break

09:20 – 10:05 presentations by three students

10:05 – 10:15 coffee break

10:15 – 11:00 presentations by three students

11:00 – 11:05 short break

11:05 – 11:50 presentations by three students

11:50 – 11:55 short break

11:55 – 12:40 presentations by three students

12:40 – 13:15 Lunch in canteen

13:15 – 14:00 presentations by three students

14:00 – 14:05 short break

14:05 – 14:50 presentations by three students

14:50 – 15:05 tea break

15:05 – 15.25 general discussion on set-up Marine Master Course and proposals for 2011

15:30 end of the Fokuz Marine Master Course 2010
