

**CUARTO CURSO EN "CARTOGRAFÍA NÁUTICA"
EN LA ACADEMIA MARÍTIMA INTERNACIONAL (AMI), TRIESTE, ITALIA
(24 de Febrero de 2003 – 05 de Septiembre de 2003)**

Estimado Director,

La Academia Marítima Internacional (AMI) de Trieste ha informado al BHI, en nombre de las Autoridades italianas, que se ha previsto un cuarto curso en "Cartografía Náutica" en 2003.

El curso empezará el lunes 24 de Febrero de 2003 y terminará el 5 de Septiembre de 2003.

Este curso está pensado para doce estudiantes de todos los países. Se solicita a las autoridades gubernamentales responsables de la Cartografía Náutica en sus países que envíen las solicitudes de sus candidatos a la Academia Marítima Internacional (AMI), vía Eduardo Weiss 15, 34127 Trieste, Italia (teléfono: +39 040 350829, fax: +39 040 350322 y E-mail imoima@imoima.org) **a través de la EMBAJADA ITALIANA en su país**, con copia al Bureau Hidrográfico Internacional. **Los nombramientos no enviados a las Embajadas Italianas, no serán aceptados** y, por lo tanto, no serán tomados en consideración para la selección. **Los nombramientos deben recibirse en la AMI antes del 7 de Enero de 2003 lo más tardar.**

La ayuda proporcionada por la AMI cubrirá los gastos de transporte, el transporte local a Trieste, el alojamiento y las comidas. **El dinero para gastos personales debe ser proporcionado por la Autoridad Nacional de cada estudiante (véase el Anexo 2, página 3).**

El curso es de gran importancia en lo que respecta a sus objetivos, la duración y el contenido técnico. Se espera que la Comunidad Hidrográfica, y en particular los Institutos Hidrográficos europeos estén disponibles y deseen apoyar a la AMI en términos de conferenciantes, basándose en las solicitudes que la AMI enviará directamente a cada país.

La información sobre el programa y la logística del curso se proporcionan en el Anexo 2. Se adjunta también una copia del formulario de nombramiento (Anexo 3).

En nombre del Comité Directivo,
Atentamente,
(original firmada)

Capitán de Navío Hugo GORZIGLIA
Director

- Anexo 1 - Lista de Distribución;
Anexo 2 - Detalles y logística del curso; (en inglés únicamente)
Anexo 3 - Formulario de nombramiento para participar & Formulario de Aceptación; (en inglés únicamente)

LISTA DE DISTRIBUCIÓN

Todos los Estados Miembros de la OHI;

Organización Marítima Internacional, División de Cooperación Técnica,
Sr. David EDWARDS, 4 Albert Embankment, London SE1 7SR.

Sr. W. DE RUITER, Jefe de División - DGVII de la CE - Transporte Marítimo.

Dirección General de la Comisión Europea - Energía y Transporte,
Sr. Roberto SALVARANI, Jefe de la Unidad de Información y Comunicación,
200, Rue de la Loi, Bruxelles.

Academia Marítima Internacional, Trieste, Italia.

Ministerio Italiano de Asuntos Exteriores, Dirección General de Cooperación para el
Desarrollo, Piazzale della Farnesina 1, 00194 Roma, Italia.

Ministerio Italiano de Asuntos Exteriores – Servicio de Contenciosos y Tratados,
Prof. Umberto LEANZA, Piazzale della Farnesina 1, 00194 Roma, Italia.

Ministerio Italiano de Asuntos Exteriores – Oficina IX de la DGCS,
viale Tiziano 80 – Roma, Italia.

Presidente del Consejo Regional, Dr. Renzo TONDO, Piazza Unità d'Italia 1,
34121 Trieste.

Región de Friuli-Venezia Giulia, Asesor Regional para el Transporte,
via Giulia 75/1, 34125 Trieste, Italia.

Presidente de la Provincia de Trieste, Piazza Vittorio Veneto 4, 34132 Trieste, Italia.

Presidente de la Autoridad Portuaria de Trieste, Punto Franco Vecchio,
34135 Trieste, Italia.

Universidad de Trieste – Magnifico Rettore, Piazzale Europa 1 (Rectorado),
34100 Trieste, Italia.

Presidente de la Cámara de Comercio de Trieste, Piazza della Borsa 14,
34100 Trieste, Italia.

DETAILS OF THE COURSE

▪ Aim of the course and prospective users

The aim of the course is to train nautical cartographers, to be employed at Hydrographic Services and at other cartographic bodies, able to perform the following:

- Elaborate a cartographic scheme in accordance with local coastal morphology, maritime traffic and port features;
- Plan a new chart, selecting proper projection size and scale, in accordance with pertinent cartographic scheme;
- Evaluate extant hydrographic and topographic data, in order to produce charts with both traditional and electronic systems;
- Compile a new chart, using traditional means as well as computer aided cartographic systems, in compliance with INT specifications;
- Convert a traditional chart into an electronic chart, by digitising existing traditional charts in the standard format or alternatively, verifying – when necessary – a third party's digitization;
- Acquire basic knowledge of the structure of geographically defined relational databases
- Update charts in both traditional and digital formats;
- Draw delimitations lines on charts (United Nations Convention on the Law of the Sea)

▪ Attendees (entry requirements)

Course applicants should belong to a Hydrographic Service or to other bodies responsible for nautical cartography and should at least hold a Higher School Completion Certificate.

▪ Number of participants

In order to ensure maximum didactic efficacy, classes should not exceed 12 students.

▪ Languages

The course will be held in English

▪ Course certificate, diploma

The model course was produced by an international Working Group, with the co-ordination of the IMA and the supervision of the IHB.

The course will be submitted to the FIG – IHO Advisory Board to obtain recognition “A” level, as the standards of competence for Nautical Cartographers will be officially issued.

Upon successful completion of the course, a document will be issued by the IMA certifying that the holder has successfully completed a course in Nautical Cartography.

COURSE OUTLINE

The duration of the course will be 28 weeks. Lessons will be, generally, 7 hours per day, from Monday to Friday, for a total number of 973 hours.

The course has been subdivided into the following 14 modules.

Every module contains specific segments which are developed taking into consideration the requirement of the course and the time allocated.

Most modules end with a practical project. All aspects will be evaluated and will be used for determining the final course work.

Tests will be given on completion of the following modules: basics, geodesy, chart projections, databases, nautical charts, law of the sea.

<i>Modules</i>	<i>Hours</i>
GENERAL INTRODUCTION	1
1. Basics	140
1.1 Mathematics and Statistics	80
1.2 Computers	60
2. General	10
2.1 Introduction	2
2.2 International Organizations	4
2.3 National Organizations	4
3. Geodesy	70
3.1 General Figure of the Earth	7
3.2 Geometrical Foundations relate to Geodetic Reference Ellipsoid	14
3.3 Reference Systems- Geodetic Datums	14
3.4 Fundamentals of Three-Dimensional Geodesy	14
3.5 The Geodesic (Orthodromic) and Loxodromic Curve on the Ellipsoid	14
3.6 Project Work:1	7
4. Chart Projections	70
4.1 General Theory	14
4.2 Mercator Projection	3
4.3 Gaussian Projections	14
4.4 Lambert Projection	7
4.5 Polar Stereographic	7
4.6 Cartographic Projections	14
4.7 Summary of Geodesy and Projections	4
4.8 Project 2	7
5. Navigation	42
5.1 General Principles	7
5.2 Types of Navigation	4
5.3 Systems and Methods	4
5.4 Port and Coastal traffic	3
5.5 Hydrographic notes	4
5.6 Project 3	20
6. Nautical Charts and Cartographic Data	91
6.1 Definitions	2
6.2 Specifications	7
6.3 Chart Schemes	7
6.4 Production systems-methods	2
6.5 Topography	4
6.6 Hydrography	4
6.7 Navigational Aids and Systems	3
6.8 Sailing Directions and other textual information	3
6.9 Tides-vertical datums	3
6.10 Photogrammetry and aerial photography	4
6.11 Satellite imagery	3
6.12 Data evaluation	6
6.13 Data preparation	6
6.14 Data assimilation	6
6.15 Quality control	3
6.16 Project 4	7
6.17 Project 5	21
7. Field data	40
7.1 Project 6	40
8. Traditional cartography	105
8.1 Compilation	7
8.2 Drafting	3
8.3 Printing	3
8.4 Quality control	3
8.5 Project 7	89
9. Computer assisted cartography	140
9.1 Types of digital data: raster, vector	4
9.2 Digital cartographic systems	4
9.3 Data capture methods	10
9.4 Migration procedures	5
9.5 Products	3
9.6 Quality control	9
9.7 Project 8	105

10. Databases	14
10.1 Relational databases	7
10.2 Object oriented databases.....	7
11. ENC Production	175
11.1 Theoretical overview.....	25
11.2 Procedures, methods and tools.....	80
11.3 Project 9	70
12. Cartographic maintenance.....	14
12.1 Traditional	5
12.2 Digital	5

12.3 ENC.....	4
13. GIS applications	35
13.1 Principles and criteria	7
13.2 Theoretical approach	14
13.3 Special issues.....	14
14. Law of the Sea-Delimitations.....	21
14.1 Law of the sea	7
14.2 Delimitation zones.....	7
14.3 Project 10.....	7

LOGISTICS

Accommodation: Twin-bedded rooms (two students per room) for the entire period of the course.

Food arrangements: breakfast, lunch and dinner will be provided by IMA.

Health and accident insurance will be provided by IMA.

Pocket money and other personal expenses will be at the charge of the organization to which the student belongs.

Assistance in obtaining a visa may be provided by IMA, but should be the responsibility of the National Organization.

Prepaid air tickets will be made available at a selected air company (will be communicated by IMA) in the country.

Note: The air ticket will have to be refunded in case of non-completion of the course

COURSE ON NAUTICAL CARTOGRAPHY
From 24 February to 5 September 2003

NOMINATION FORM FOR PARTICIPATION

A completed nomination form should be submitted to the Director of the International Maritime Academy,* Trieste, Italy **THROUGH THE ITALIAN EMBASSY** **, with a copy to the IHB Monaco***. Nominations should be made as early as possible, using a separate form for each nomination, indicating clearly the Government's priority if more than one participant is nominated:

1. FAMILY NAME
- FIRST NAME.....
- OTHER NAME
2. Mailing address.....
-
-
- Telephone
- Fax
- E-Mail.....
3. Nearest airport where air travel will commence and terminate:
- Name of airport.....
- Location.....
4. Date of birth.....
5. Sex: Male Female
6. Place of birth.....
7. Nationality
8. Passport No.....
9. Date and Place of Issue.....

* International Maritime Academy, via Eduardo Weiss 15, 34127 Trieste, Italy. (Fax: +39 040 350322.e-mail: <imoima@imoima.org>)** **The nominations not transmitted to the Italian Embassy will not be accepted and taken into consideration***** International Hydrographic Bureau, BP445, MC 98011 MONACO CEDEX, Principality of Monaco.(Fax: +377 93 10 81 40; e-mail: <info@ihb.mc>).

10. Person to notify in case of emergency:

Name.....

Address

Telephone

Fax

E-Mail.....

11. Present position and description of duties.....

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12. Educational background

.....

.....

13. Previous experience

.....

.....

Nominee's signature

The above-mentioned person is nominated as our first/second possible participant in the course

Name and signature of Government official authenticating this nomination.....

Title

ACCEPTANCE FORM

I hereby accept the invitation of the International Maritime Academy (IMA) to participate in the Course on Nautical Cartography (from 24.02.2003 – 05.09.2003).

I confirm that:

1. I will refrain from engaging in political, commercial and any activities other than those governed by the course programme;
2. I will advise the Academy immediately if I am unable to attend the course; and
3. I will travel to Trieste, Italy and return to my home country at the end of the course, as appropriate, by the route designated by the Academy.

Signature of Participant

Name of Participant
(Printed)

Address

.....

.....

Date