

STUDENT HANDBOOK AND PROSPECTUS

B. Sc. (Nautical Science)
(AUGUST-2008 Session)



**IGNOU-DGS PROJECT
SCHOOL OF ENGINEERING AND TECHNOLOGY
INDIRA GANDHI NATIONAL OPEN UNIVERSITY
MAIDAN GARHI, NEW DELHI – 110068**

Price Rs.100/-

"Education is a liberating force, and in our age it is also a democratizing force, cutting across the barriers of race and class, smoothing out inequalities imposed by birth and other circumstances."

—Julius Garfield



*"जिस ज्ञान से हमें है दुख हमें है और ज्ञान से दुख है
वो वह ज्ञान से ज्ञान का ज्ञान है। वह वह ज्ञान
हमारे है ज्ञान जो वह ज्ञान विज्ञानों से दुख है
दुख जो वह ज्ञान ज्ञान है।"*

— रवीन्द्र नाथ

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April, 2008

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Further information on the Indira Gandhi National Open University programmes may be obtained from the University's office at Maidan Garhi, New Delhi – 110 068, or its website <http://www.ignou.ac.in>.

Printed and published on behalf of the Indira Gandhi National Open University, New Delhi, by Director, School of Engineering and Technology, IGNOU.

Printed at : I G Printers, Okhla Industrial Area, New Delhi - 110020

Paper used : Agrobased Environment Friendly.

A Joint Programme of



**Indira Gandhi National
Open University**

(Central University established by an Act of Parliament)

and



**Directorate General of
Shipping, Mumbai**

(Ministry of Shipping, Road Transport and Highways,
Government of India)

RECOGNITION

IGNOU is a Central University established by an Act of Parliament in 1985 (Act No. 50 of 1985). IGNOU Degrees/ Diplomas/ Certificates are recognised by all the members of the Association of Indian Universities (AIU) and are recognised at par with Degrees/ Diplomas/ Certificates of all Indian Universities/Deemed Universities/Institutions vide UGC Circular No. F. 1-52/2000 (CPP-II) dated 5th May 2004 and AIU Circular No. EV/B(449)/94/176915-177115 dated January, 1994.

Before filling up the application form, please ensure that you are medically fit and fulfil the minimum eligibility criteria prescribed for the programme.

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IMPORTANT EVENTS AND DATES TO REMEMBER	
Date of Advertisement	4 th Week of April 2008
Issue of Student Handbook and Prospectus (Application Form)	25 th April 2008 (Friday)
Live interaction with prospective candidates on Gyan Darshan-2 (Teleconferencing channel of IGNOU) All India Tollfree-1800-11-2345 (from MTNL and BSNL). Other Tel. Nos. 011-29532844/45 and 011-29536131 and Fax No. 01129536134	27 th April 2008 (Sunday) 12:00 -13:45 PM
Last date of submission of application form for Entrance Test (Form A) at the IGNOU Headquarters	27 th May 2008 (Tuesday)
Date of Entrance Test	15 th June 2008 (Sunday)
Declaration of Entrance Test Result (Note: The result is to be declared on website)	23 rd June 2008 (Monday)
Confirmation of firm vacancies for non-sponsored candidates at Training Institutes	12:00 Noon of 16 th July 2008 (Wednesday)
Dates and Time of Counselling for the allotment of Training Institute (Non-sponsored candidates) Note: The counselling will be held at IGNOU, Maidan Garhi, New Delhi-110068. The exact Venue details shall be published on website of IGNOU.	<p><u>For SC/ST Candidates:</u> 10:00 AM of 17th July-2008 (Thursday)</p> <p><u>For other candidates:</u> <u>Rank 1 to 250:</u> 11:30 AM of 17th July-2008 (Thursday)</p> <p><u>Rank 251 to 750:</u> 2:30 PM of 17th July-2008 (Thursday)</p> <p><u>Rank 751 to 1250:</u> 10:00 AM of 18th July-2008 (Friday)</p> <p><u>Rank 1251 to 1750:</u> 02:30 AM of 18th July-2008 (Friday)</p> <p><u>Rank 1751 & Onwards:</u> 10:00 AM of 19th July-2008 (Saturday)</p>
Date of Reporting at the allotted Training Institute	30 th July 2008 (Wednesday)
Date of Commencement of Programme	1 st August 2008 (Friday)

Important Notes:

1. Please keep visiting <http://www.ignou.ac.in> for any further information related to admissions and Updates.
2. The Result of Entrance Test (OPENNET) will be made available on IGNOU website i.e. www.ignou.ac.in.
3. You may also contact at 011-29536443 for your further queries.
4. You can also E Mail to us at ignoudgs_studentinfo@yahoo.co.in
5. Please visit <http://www.dgshipping.com> for more details about shipping.

1. THE UNIVERSITY

The Indira Gandhi National Open University (IGNOU) was established by an Act of Parliament in 1985 to achieve the following objectives:

- Democratising higher education by taking it to the doorsteps of the learners;
- Providing access to high quality education to all those who seek it irrespective of age, region or formal qualifications;
- Offering need-based academic programmes at affordable cost in emerging professional and vocational areas;
- Promoting and developing distance education and maintaining standards in distance education in the country.

The University has national jurisdiction and strongly believes in resource sharing, collaboration and networking with other institutions and organisations. The University has developed nationwide student support services to offer socially and academically relevant programmes. Several of these programmes are modular in nature. The University has emerged as the largest Open University in the world. The University uses a judicious multiple media mix for instruction.

1.1 The Schools of Studies

With a view to develop interdisciplinary studies, the University operates through Schools of Studies. Each School is headed by a Director who arranges to plan, supervise, develop and organize its academic programmes and courses in coordination with the School staff and the different academic, administrative service wings of the University. The emphasis is on providing a wide choice of courses at different levels.

The School of Studies in operation currently are as follows:

- School of Computer and Information Sciences.
- School of Continuing Education.
- School of Education.
- School of Engineering and Technology
- School of Health Sciences
- School of Humanities
- School of Management Studies
- School of Sciences
- School of Social Sciences
- School of Agriculture
- School of Law
- School of Journalism and New Media Studies
- School of Gender and Development Studies
- School of Tourism, Hospitality Service Sector Management
- School of Interdisciplinary and Trans-disciplinary Studies
- School of Social Work
- School of Vocational Education and Training
- School of Extension and Development Studies

- School of Foreign Languages
- School of Translation Studies and Training
- School of Performing and Visual Arts

1.2 Academic Programmes Ongoing

The University offers both short-term and long-term programmes leading to Certificates, Diplomas or Degrees, covering conventional as well as innovative programmes. Most of these programmes have been developed after an initial survey of the demand for such studies. They are launched with a view to fulfil the student's needs for:

- certification,
- improvement of skills
- acquisition of professional qualification,
- continuing education and professional development at work place,
- self-enrichment, and
- diversification of knowledge, etc.

So far the University has launched the following programmes:

Doctoral Programmes

1. Doctor of Philosophy in Education (Ph.D)
2. Doctor of Philosophy in Economics (Ph.D)
3. Doctor of Philosophy in History (Ph.D)
4. Doctor of Philosophy in Tourism Studies (Ph.D)
5. Doctor of Philosophy in Library & Information Science (Ph.D)
6. Doctor of Philosophy in Public Administration (Ph.D)
7. Doctor of Philosophy in Sociology (Ph.D)
8. Doctor of Philosophy in Political Science (Ph.D)
9. Doctoral Programme in Mathematics (Ph.D)
10. Doctoral Programme in Physics (Ph.D)
11. Doctoral Programme in Hindi (Ph.D)
12. Doctoral Programme in English (Ph.D)
13. Integrated Doctoral Programme in Physics (Ph.D)
14. Integrated Doctoral Programme in Mathematics (Ph.D)
15. Doctoral Programme in Management (Ph.D)
16. Doctoral Programme in Commerce (Ph.D)

Master's Degree Programmes

1. Master in English (MEG)
2. Master in Hindi (MHD)
3. Master in Political Science (MPS)
4. Master in History (MAH)
5. Master in Economics (MEC)

6. Master in Sociology (MSO)
7. Master in Public Administration (MPA)
8. Master in Public Policy(MPP)
9. Master of Commerce (MCOM)
10. Master's of Science Degree in Dietetics and Food Service Management{MSc. (DFSM)}
11. Master in Computer Applications (MCA)
12. Master in Library and Information Science (MLIS)
13. Master of Science in Hospitality Administration (MHA)
14. Master of Arts in Distance Education (MADE)
15. Master in Tourism Management (MTM)
16. Master of Business Administration in HRD/ Finance/Operations/Marketing (MBA)
17. Master of Business Administration (Banking & Finance) (MBF)
18. M.A. in Rural Development, M.A.(RD)
19. Commonwealth Executive Master of Business Administration (CEMBA)
20. Commonwealth Executive Master of Public Administration (CEMPA)

Bachelor's Degree

1. Bachelor of Arts (BA)
2. Bachelor of Commerce (B.Com)
3. Bachelor of Science (B.Sc.)
4. Bachelor of Social Work (BSW)
5. Bachelor of Science (Nautical Science)
6. Bachelor of Science in Nursing (B.Sc. N)
7. Bachelor In Library and Information Science (BLIS)
8. Bachelor in Computer Applications (BCA)
9. Bachelor of Education (B. Ed)
10. Bachelor in Technology in Civil (Construction Management) (BTCM)
11. Bachelor in Technology in Civil (Water Resource Engineering) (BTWRE)
12. Bachelor in Technology in Mechanical Engineering (Computer Integrated Manufacturing) (BTME (CIM))
13. Bachelor of Science in Hospitality & Hotel Administration. (BHA)
14. Bachelor in Tourism Studies (BTS)

PG Diploma Programmes

1. P.G. Diploma in Library Automation & Networking(PGDLAN)
2. P. G. Diploma in Translation (PGDT)
4. P. G. Diploma in Journalism and Mass Communication (PGJMC)
5. P.G. Diploma in Radio Prasaran (PGDRP)
6. P.G. Diploma in Audio Programme Production(PGDAPP)
7. P. G. Diploma in Maternal and Child Health (PGDMCH)

8. P.G. Diploma in Hospital and Health Management (PGDHHM)
9. P.G. Diploma in Geriatric Medicine (PGDGM)
10. P. G. Diploma in Rural Development (PGDRD)
11. P. G. Diploma in Higher Education (PGDHE)
12. P.G. Diploma in Distance Education.(PGDDE)
13. P. G. Diploma in Management (PGDIM)
14. P. G. Diploma in Human Resource Management (PGDHRM)
15. P. G. Diploma in Financial Management (PGDFM)
16. P.G. Diploma in Operations Management (PGDOM)
17. P. G. Diploma in Marketing Management (PGDMM)
18. P.G. Diploma in International Business Operations (PGDIBO)
19. Post Graduate Diploma in Intellectual Property Rights (PGDIPR)
20. Post Graduate Diploma in Environment & Sustainable Development (PGDESD)
21. Post Graduate Diploma in Community Cardiology (PGDCC)

Diploma Programmes

1. Advanced Diploma in Construction Management (ADCM)
2. Advanced Diploma in Water Resources Engineering (ADWRE)
3. Diploma in Creative Writing in English (DCE)
4. Diploma in Creative Writing in Hindi (DCH)
5. Diploma in Early Childhood Care and Education (DECE)
6. Diploma in Nutrition & Health Education (DNHE)
7. Diploma in HIV and Family Education (DAFE)
8. Diploma in Computer Integrated Manufacturing (DCIM) leading to B. Tech. Mechanical (Computer Integrated Manufacturing)
9. Diploma in Primary Education (DPE)
10. Diploma in Management (DIM)
11. Diploma in Tourism Studies (DTS)
12. Diploma in Youth in Development Work (DCYP)
13. Diploma in Aquaculture (DIA)
14. Diploma in Nautical Science (DNS)
15. Diploma in Women's Empowerment and Development (DWED)
16. Diploma in Value Added Products in Fruits and Vegetables (DVAPFA)
17. Diploma in Civil Engineering (For Construction Sector) (DCLE)
18. Diploma in Civil Engineering (Army Personnel only) (DCLE)
19. Diploma in Electrical & Mechanical Engineering (Army Personnel only) (DEME)

Certificate Programmes

1. P.G. Certificate in Participatory Management of Displacement Resettlement and Rehabilitation (PGCMRR)

2. PG Certificate in Copyediting and Proofreading (PGCCP)
3. PG Certificate in Writing for Television (PGCTW)
4. PG Certificate in Rural Surgery (PGCRS)
5. Bachelor's Preparatory Programme Leading to BA, B.com for non 10+2 (BPP)
6. Certificate in Computing (CIC).
7. Computer Literacy Programme (CLP)
8. Certificate in ICT Application in Library (CICTAL)
9. Certificate in HIV and Family Education (CAFÉ)
10. Certificate in Nutrition and Child Care (CNCC)
11. Certificate in Food & Nutrition (CFN)
12. Certificate in Food Safety (CFS)
13. Certificate in Rural Development (CRD)
14. Certificate in Guidance (CIG)
15. Certificate in Teaching of Primary School Mathematics (CTPM)
16. Certificate in the Teaching of English (CTE)
17. Certificate in Primary Teaching (CPT)
18. Certificate in Primary Education (CPE)
19. Certificate in ICT applications in Library (CICTAL)
20. Certificate in Shoe Upper Stitching (CSUS)
21. Certificate in Shoe Upper Cutting (CSUC)
22. Certificate in Shoe Lasting and Finishing (CSLY)
23. Certificate in Tourism Studies (CTS)
24. Certificate in Empowering Women through Self Help Groups (CWDL)
25. Certificate in Women's Empowerment and Development (CWED)
26. Certificate in Youth in Development Work (CCYP)
27. Certificate in Craft and Design (Pottery) (CCDP)
28. Certificate in Disaster Management (CDM)
29. Certificate in Environmental Studies (CES)
30. Certificate in Participatory Forest Management (CPFM)
31. Certificate in Labour Development (CLD)
32. Certificate in Human Rights (CHR)
33. Certificate in Consumer Protection (CCP)
34. Certificate in Laboratory Techniques (CPLT)
35. Certificate in Competency Enhancement for ANM/FHW (CCEANM)
36. Certificate in Participatory Project Planning (SAVINI)
37. Certificate in Health Care Waste Management (CHCWM)
38. Certificate in Motorcycle Service and Repair (CMSR)

39. Advanced Certificate in Power Distribution Management (ACPDM)

Awareness Programme

1. Awareness Course on Intellectual Property Rights
2. Awareness Course - Appreciation Course on Environment. It is against the backlog of development of these programmes, the University has launched its distance learning programmes in engineering areas developed by its School of Engineering and Technology.

Note: Information on all these Programmes can be obtained from www.ignou.ac.in

2. INSTRUCTIONAL SYSTEM

The University follows multi-media approach for imparting instruction to its learners. The instructional package comprises a combination of one or more of the following:

- Self-instructional print materials;
- Audio and video cassettes;
- Telecast/broadcasts through the dedicated education channel of Doordarshan (Gyan Darshan) and the All India Radio (Gyan Vani) Channel;
- Teleconferencing;
- Interactive Radio-counselling;
- Face-to-face counselling at Study Centres and depending on programme requirement at Work Centres;
- Tele-counselling;
- Counselling Tests;
- Assignments;
- Technical and field visits
- Project work including work-related field projects;
- On line teaching-learning;
- Extended contact programmes; and
- Laboratory work.

2.1 Course Preparation

The University prepares the self-instructional print material and audio-video programmes in participation with academia and R & D and practicing personnel. The study material is developed by teams of experts drawn from different universities/institutions all over the country. The print material is scrutinised by the content experts, supervised by the instructors/unit designers and edited in-house. In particular, print materials for programmes and courses offered by the School of Engineering and Technology are prepared by the in-house faculty of the University in association with course preparation project teams drawn from IITs, Engineering Colleges, Universities, R & D institutions, Industries and Professional bodies from all over the country. In the process, these materials are scrutinized by the content experts, supervised by the instructional unit designers and edited by the language experts at IGNOU before they are sent for printing.

Similarly, audio and video programmes are produced in consultation with the course-writers, other technical experts, in-house faculty and producers and wherever feasible in association with other universities, R & D institutions and industries, and professional bodies. These programmes are

reviewed by the faculty as well as outside media experts and edited or modified suitably, wherever necessary, before they are dispatched to the study centres and Doordarshan for broadcast.

2.2 Credit System

The University follows the “Credit System” for its programmes. Each credit in IGNOU system is equivalent to 30 hours of study comprising all learning activities which include reading and comprehension, listening to audio, watching videos, attending counselling sessions, teleconferencing, and writing assignment responses. Thus, a four-credit course involves 120 study hours. This helps the student to understand the academic efforts one has to put in, in order to successfully complete a course. Completion of an academic programme requires successful clearing of both the assignments and the term end examination of each course in the programme.

2.3 The Print Material

Self-instructional printed material is the mainstay of learning at IGNOU. In concrete terms, the print material comprises books/booklets, which are called “**Blocks**”, each Block having lessons, which are called “**Units**”. Each Unit is structured in such a way so as to facilitate self-study. Number of Blocks in a course depends on course-credits.

The first page of each block indicates the numbers and titles of the units constituting the block. This is followed by a brief introduction to the block.

Each unit begins with mention of unit “**Structure**”, wherein numbers and titles of each section/sub-section comprising the unit are indicated.

“Structure” is followed by the first section on “**Introduction**”, which attempts to forge a link with topics in various sections by briefly outlining what is proposed to be done in the unit, and, in doing so, states the learning “**Objectives**”, through which student is told of what one expects him/her to attain when he/she has completed the unit.

Section on “**Introduction**” is followed by other Sections covering various topics under the unit. In the Section “**Summary**”, coming towards the end, the unit then summarises what has been said in the whole unit to enable the student to recall the main points.

Important words/terms are explained under the section “**Key Words**” to facilitate comprehension.

The structure of a unit, thus, will be as given below:

UNIT TITLE

Structure	
1.1 Introduction	
Objectives	
1.2 Section 1 : Concept 1	
1.2.1 Subsection 1.1	
1.2.2 Subsection 1.2	
1.2.n Subsection 1.n	SAQs <input type="text"/>
1.3 Section 2 : Concept 2	
1.3.1 Subsection 2.1	
1.3.2 Subsection 2.2	
.	
.	
1.3.n Subsection 2.n	SAQs <input type="text"/>
.	
.	
1.m Section m	
1.m+1 Summary	
1.m+2 Key Words/Glossary	
1.m+3 Further Readings	
1.m+4 Answers to SAQs	

The section, “**Some Useful Books**” or “**Further Reading**” is meant to suggest some books for additional reading.

While some of the suggested books for reading will be available at the library of your training institution, some may not be. Therefore, students are suggested to make efforts to get access to other libraries as well.

In each Unit, generally after each section, there are Self-check Exercises under the caption “Self-Assessment Questions (SAQs)”. After each SAQ space is given for you to write your answers to the questions set in these self-assessment questions (SAQs). Each unit invariably ends with answers to the questions set in these SAQs.

While reading the units, mark the words/phrases that you do not fully understand. Look these up under the section Key Words/Glossary or in a dictionary. If there are certain ideas or concepts you do not understand, look these up in earlier unit(s) first, they may be explained there. Read the unit a second or third time till you have understood the point. However, if you still do not understand something, consult your counsellor at the training institutes for clarification.

Proper comprehension of the units and the points/notes made by you while reading through the units would help you in answering the Self-Assessment Questions given in the units. You may have to go through some pages of the unit again to find answer to these exercises. Once you have written the answer in the blank space provided in each unit for the purpose, you can compare your answers with the answers given under the section “**Solutions/Answers to SAQs**”, you must overcome the temptation of having a furtive look at the answers given at the end of the unit before attempting the questions.

Please note that the answers to the Self-Assessment Questions are not to be submitted to the University or the Study Centre for correction or evaluation. As the caption “Self-Assessment Questions” itself suggests, these exercises will enable you to check your own progress and find out whether you have comprehended the contents of the unit or not.

In addition to SAQs, sections under units can also have solved examples.

3. AN INTRODUCTION TO MERCHANT NAVY

The B.Sc. (Nautical Science) Programme is designed to cater needs of Shipping Industry to make available competent officers to join the Merchant Navy.

Note: The information given above under the Section “An Introduction to Merchant Navy” has been gathered from various sources. However, neither IGNOU nor the Directorate General of Shipping (DGS) or the Training Institute to which you may be attached to for undergoing the programme guarantee a placement on board. Therefore, you are strongly advised to make your own enquiries before making a final decision.

3.1 The Merchant Navy

Today, there are several opportunities ashore to fetch reasonably good salaries but the Merchant Navy may also offer equally rewarding salaries at a young age. Unfortunately, the knowledge on the subject of “What is Merchant Navy & How do one join it?” still remains the privilege of few people who already have their relatives and friends in this industry. With this in background, some useful information about career in Merchant Navy is presented herein

The Merchant Navy is a non-combatant commercial fleet, which deals with transporting cargo and occasionally, passengers, by sea. Its fleet is therefore composed of vessels (ships) such as passenger vessels (called Cruise Ships), liners which call ports on a predetermined route at specified intervals, cargo vessels which carry cargo or oil tankers (called tankers), gas carriers, as well as other special types of vessels. These ships may belong to Indian or foreign Shipping companies. In fact, the

Merchant Navy is the backbone of international trade, carrying cargo across the globe. Without the merchant navy, much of the import-export business may grind to a halt.

Merchant ships today are highly sophisticated and technology intensive. Safety and efficiency of the ship are crucial and depends upon the professional ability, competence and dedication to duty, of a seafarer, on board ship. Naturally, a seafarer is expected to be highly professional for the safe and efficient operation of the ship. The training in India is of reasonably high standards and the Indian seafarers are one of the most sought after commodity in the shipping industry worldwide.

Merchant navy career options mainly include the *navigating officers*, marine engineers, and the department of hospitality. In Merchant Navy, major tasks performed are in three basic areas the Deck, the Engine and the Service Department. There are thus, many career options that are available for any youngster who has dreams to join the merchant navy. The deck officers include the captain, chief officer, second officer, third officer and other junior officers. The engine department consists of the Chief Engineer, second engineers, junior engineers and electricians. The service department manages the kitchen, laundry, medical and other services. Jobs are available with shipping companies in India and other countries.

A career in this field is full of adventure and long voyages to the exotic places. Above all this, the excellent pay and promising promotional opportunities make the career lucrative and exciting in spite of all the hard working life and long absence from family and home. As an officer in the Merchant Navy, one can expect a unique lifestyle that can take him/her anywhere in the world.

The job calls for genuine interest that can hold the entrant adjust with ease and confidence. The ability to withstand long stretches of hard work and to the physical strain. Therefore, a person with a strong mental makeup and tough physical constitution along with a sporting adaptive and adjustable attitude can find the sea-life one of adventure and fun. Life at sea is not a comfortable break from the routine of academics. A career in the merchant navy requires people with strong inner self and tough physical form, along with a sporting, adaptive and adjustable attitude. Willing to take on responsibility, love for adventure and challenges; have an urge to strive for higher positions; be able to work as well as study for examinations in between. Candidates need to be intelligent, intuitive, willing to work as a team, flexible, patient; and willing to live apart from loved ones for long stretches of time. A merchant navy entrant must involve in a rigorous programme of the on-the-job learning. They have to pass stipulated examination to get promotions.

You may be required to work in all weather conditions. Working in damp and cold conditions is often inevitable. While it is uncommon nowadays for vessels to suffer disasters such as fire, explosion. Ship's personnel are well trained as to how to go about during such emergencies. Modern safety management procedures, advanced emergency communications, and effective international rescue systems place modern mariners in a much safer position. Now, vessels are air conditioned and generally soundproofed from noisy machinery, and equipped with comfortable living quarters which help overcome difficult circumstances of long periods away from home. Also, modern communications, especially email, link modern mariners to their families.

Although, the OECD (Organisation for Economic Co-operation and Development) countries (e.g. North America, Western Europe, Japan etc.) had been an important source for officers, but growing numbers of officers are now recruited from the Far East, Eastern Europe and India. The majority of the shipping personnel are recruited from developing countries, especially South East Asia. The Philippines and India are very significant maritime labour supply nations, with many seafarers from these countries enjoying employment opportunities on foreign flag ships operated by international shipping companies

3.2 Job Opportunities and Career

Here we shall be limiting ourselves to job opportunities on Deck side. **Deck Officer** - The officers from this branch look after the ships navigation, loading/unloading of cargo, general maintenance, and administration of the ship. The officer joins in the rank of 3rd officer and is subsequently promoted to the rank of 2nd officer, Chief Officer and finally the Captain of the ship. All the promotions are subject to an individual passing his/her competency exams and his/her performance onboard the ship. In addition to navigation duties, normally a 3rd officer looks after the life saving appliances, 2nd officer the passage planning and the navigation equipment, the Chief Officer looks after the cargo work and the Master is the overall in-charge of the ship. The subsequent Promotions after acquiring a Certificate of Competency as Second Mate (F.G.), an officer is eligible to be appointed as a Third or a Second Officer on board a merchant ship and would draw a handsome salary. For subsequent promotions, he has to render further sea service and progressively pass the higher examinations appropriate for that rank viz. First Mate (F.G.) and Master (F.G.). The Certificate of Competency as Master (F.G.) entitles an officer to become the Captain of a Merchant Navy ship.

A deck cadet after successful completion of one year (1st and 2nd Semesters i.e. Diploma in Nautical Science) of studies, during his/her onboard training (3rd, 4th and 5th Semesters) can expect stipend in the range of US \$ 200-600 per month. Among officers a 3rd Officer/4th Engineer gets about US \$1500 – 2000 per month, whereas a 2nd Officer/3rd Engineer, Chief Officer/2nd Engineer, Master /Chief Engineer can expect a salary of US \$2200 - 2500, US \$ 3000 - 3500 and US \$4000 – 5000 per month, respectively. Masters may draw salaries as high as US \$10,000-15,000 per month for being on specialized vessels.

Generally, an individual can attain the rank of 3rd officer at the age of approx. 23 yrs and Master in around 10 years thereafter.

A typical career flow chart is given in Figure-1 on the next page.

3.3 Future Prospects after Leaving Sea as Master or Chief Officer

After acquiring B.Sc. (Nautical Science) degree one can pursue higher studies as well and look for various on shore jobs. After getting certificate of competency as a Master (FG), one may get suitable openings in public sector or private shipping company as Ship Manager or Marine Superintendent, the Mercantile Marine Department or Directorate General of Shipping as Nautical Surveyors, teaching faculty at any Maritime Training Institute or Port Trust as pilot.

Note: The IGNOU/Directorate General of Shipping/Training Institute/Government of India is under no obligation to find employment/ship placements for the students/candidates undergoing the B.Sc. (Nautical Science) programme of IGNOU-DGS. However, the Training Institute voluntarily may assist getting a suitable employment with shipping companies in case of non-sponsored candidates. One can always look for advertisements for various openings at different levels. For this purpose, various shipping companies may hold campus interviews of cadets for jobs. Candidates are advised to apply directly to the shipping companies in response to their advertisements appearing in the newspapers for sponsorship for this programme to undergo onboard training. Shipping companies normally hold campus interviews for non-sponsored candidates who are completing their training at the institutes.

CAREER FLOW CHART

Eligible in terms of educational qualification, age, physical standards, and eye-sight as prescribed from time to time by IGNOU and the Directorate General of Shipping, Ministry of Shipping, Road Transport and Highways, Government of India (for details please see section on Eligibility)

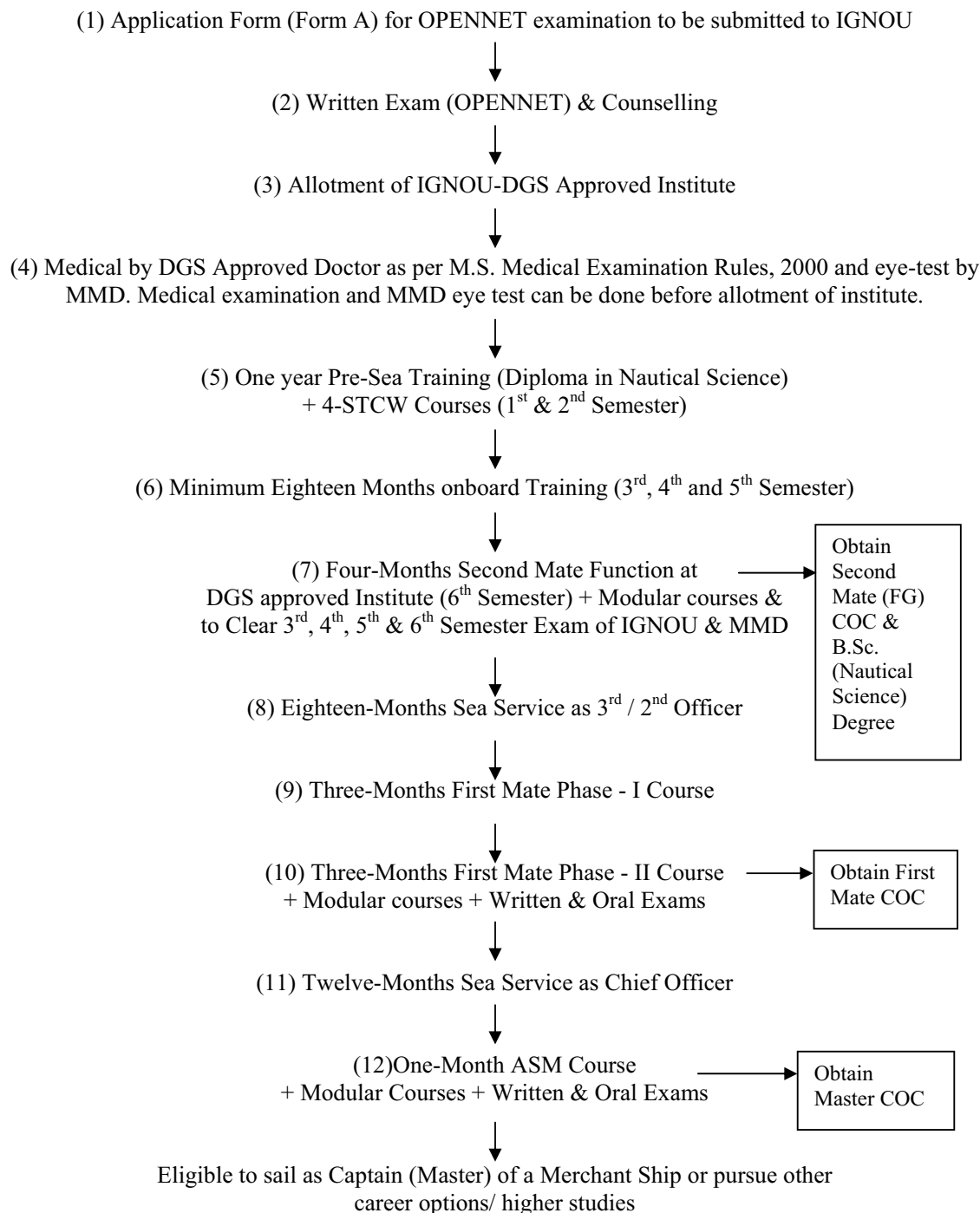


Figure-1: Typical Career Flow Chart

3.4 Women in Shipping

Although the Merchant Navy traditionally had been an all-male occupation but of late women are storming this male bastion. They are now increasingly joining up in the Merchant Navy. The United Nations (UN) has issued mandate, through International Maritime Organisation, to create equal representation of women in the work force by 2025. This can be seen as a very positive step in the direction of promoting women in the shipping industry. The followings may be a few indicative Pros & Cons for Women Joining the Merchant Navy which some of you may like to consider before applying for a career in shipping:

Pros:

1. Job opportunity in the Merchant Navy with attractive salary thus additional income
2. Globalization and equal rights for women
3. Will get the opportunity to command the vessels thus representing the country
4. May get opportunity for Shore Jobs
5. May work better in Passenger Ships & Cruise liners.

Cons:

1. Gender bias by male.
2. Difficulty to do heavy work which sometimes may be the requirement of industry.
3. Vessel can sail in any part of the world and sometimes the dress code in some countries may be different if and when required
4. May face isolation amongst 15-20 male colleagues which may be uncomfortable for some.
5. When in family way sailing is not permitted/desirable.
6. The shipping company may sometimes be unwilling to accept females as seafarers.

In fact, it all depends upon the individual weaknesses and strengths to take up career one likes and shipping is no exception. The shipping career can be made more attractive to Indian women by creating more awareness of profession in the society by effectively propagating the maritime profession highlighting the positive aspects, such as post sailing land based employment opportunities.

Note: During the pre-sea training programme, physical training is an essential part of the curriculum to keep the young persons fit for the tough and adventurous career at sea.

4. B. Sc. (NAUTICAL SCIENCE) PROGRAMME

4.1 Brief History and Background

As noted earlier, India supplies large highly qualified and well trained work force to the international shipping industry to work on merchant ships. Indian officers are also employed as managers and technical experts in shipping companies all over the world. Statistics available from authoritative sources suggest that Indian Officers will continue to be in demand in the foreseeable future but not without a stiff competition from officers of other Nationalities.

Realising the need of the industry and to ensure that the training programmes continue to be of the highest quality, B.Sc. (Nautical Science) programme has been launched in collaboration with the Directorate General of Shipping (DGS), Ministry of Shipping, Government of India under the aegis of IGNOU-DGS Project with a view to increase availability of trained manpower to the shipping industry. The DGS is responsible for the implementation of the Merchant Shipping Act, 1958 and The Merchant Shipping (Amendment) Act, 2003 as amended from time to time, which deal with regulation and facilitation of Shipping in India including Merchant Shipping Training and Examination.

4.2 Aims and Objectives

This education and training programme aims at preparing the candidates to face with fortitude and endurance, the hardships of life at sea and to instil in them a sense of devotion to duty, feeling of goodwill and comradeship, which is essential for the life at sea.

4.3 Programme Structure and Delivery

B.Sc. (Nautical Science) is worth 110 credits which include credit transfer worth 20 credits from Mercantile Marine Department (MMD)/Directorate General of Shipping (DGS). It is a six-semester (three-year) programme constituting three stages. In the beginning, a candidate is admitted for the one-year (2-Semesters) pre-sea **Diploma in Nautical Science (DNS)**, which is administered through IGNOU-DGS approved Nautical Training Institutes located across the country. This diploma programme is followed by one and half year (3-semester) on-board ship training and after successful completion of which, a candidate is awarded **Advanced Diploma in Nautical Science (ADNS)**. After completion of the on-board training, the Sixth Semester constitutes “2nd Mate Certificate of Competency” awarded by the Director General of Shipping and simultaneous award of **B.Sc. (Nautical Science)** degree from the University.

The first two Semesters, i.e. 1st year constitute on-shore training which is designed to impart basic knowledge on the type of merchant ships, ship operations, types of goods carried by ships, shipping trade and a good foundation in the basic principles of navigation and environmental sciences. During these two semesters the candidates undergo education and training in face to face mode supported by open and distance learning system and are assigned to an approved Training Institute (**Annexure I**).

For the subsequent three semesters, candidates are required to be trained on job, i.e. onboard a ship doing practical application of the theory learnt.

The sixth semester is conducted in face to face mode at an approved Training Institute as identified by Directorate General of Shipping, Mumbai. The training and instructions imparted at the training institute for this semester are directly supervised by the Directorate General of Shipping. The emphasis during this semester is to prepare the candidate for the examination of “2nd Mate (Foreign Going) Certificate of Competency” conducted by the Mercantile Marine Department of Directorate General of Shipping (DGS), Department of Shipping, Ministry of Shipping, Road Transport and Highways, Government of India. Thus, the 2nd Mate (Foreign Going) Certificate of Competency forms an integral part of B. Sc. (Nautical Science) Programme. On successful completion of all the six semesters, the candidate is awarded a Certificate of Competency from DGS as well as he/she earns a degree in B. Sc. (Nautical Science) from IGNOU which enables him/her to become an officer on a merchant ship. The scheme of education and training for the programme is presented in the table below:

Table 4.1: Different Stages in B.Sc. (Nautical Science) Programme

Stage	Semester	Duration	Teaching Method	Award of Qualification
1	Semester 1 and 2	12 Months (Pre Sea)	Face to face Contact Programme	Diploma in Nautical Science (DNS) by IGNOU
2	Semester 3, 4 and 5	18 Months onboard ship (At sea)	Distance Learning	Advanced Diploma in Nautical Science (ADNS) by IGNOU
3	Semester 6	6 Months (Post Sea)	Face to face Contact Programme	B. Sc. (Nautical Science) Degree by IGNOU, and Certificate of Competency (COC) by D G Shipping

Thus, on successful completion of first Five Semesters of 18 credits each and after obtaining Second Mate (Foreign Going) Certificate of Competency (20 credits), a total of 110 credits would result in the award of B. Sc. (Nautical Science) degree to a successful candidate.

The distribution of courses of study and their respective credits for different semesters is given below:

Table 4.2: Programme Structure of the B.Sc. (Nautical Science) [Semester-I]

S. No.	Course Code	Name of the Course	Credits
1	BNA 011	Applied Mathematics	2
2	BNA 012	Applied Sciences	2
3	BNA 013	Applied Electricity & Electronics	2
4	BNA 014	Navigation-I: Terrestrial & Celestial	2
5	BNA 015	Navigation-II: Bridge Equipment, Watch Keeping, Meteorology & Oceanography	2
6	BNA 016	Cargo Handling, Stowage & Seamanship-I	2
7	BNA 017	English & Human Factors	Nil (Audit)
8	BNAL-011	Applied Sciences Laboratory	2
9	BNAL-012	Computer Laboratory	2
10	BNAL-013	Workshop Practices	2
Total Credits			18

Table 4.3: Programme Structure of the B.Sc. (Nautical Science) [Semester-II]

S. No.	Course Code	Name of the Course	Credits
1	BNA 021	Navigation-III :Navigation and Chart Work	2
2	BNA 022	Navigation-IV : Advanced Bridge Equipment, Watch Keeping, Meteorology & Oceanography	2
3	BNA 023	Cargo Handling, Stowage & Seamanship-II	2
4	BNA 024	Ship Operations	4
5	BNA 025	Maritime History and Commerce	Nil (Audit)
6	BNAL-021	Computer Applications Laboratory	2
7	BNAL-022	Workshop Practices and Seamanship Laboratory	4
8	BNAP-021	Project	2
Total Credits			18

Note: The Directorate General of Shipping is in the process of making it compulsory to pass BNA-014, BNA-015, BNA-016, BNA-021, BNA-022, BNA-023 and BNA-024 courses to become eligible to obtain Continuous Discharge Certificate (CDC), a document necessarily to be possessed by a seafarer to join a merchant ship. Therefore, candidates are strongly advised to put their concentrated efforts to successfully pass these courses so as to pursue sea career.

Table 4.4: Programme Structure of the B.Sc. (Nautical Science) [Semester-III]

S. No.	Course Code	Name of the Course	Credits
1	BNA – 031	Ship Safety and Security	4
2	BNAL – 031	Practical Navigation – I	4
3	BNAL – 032	Practical Cargo Handling, Stowage & Seamanship – I	4
4	BNAL – 033	Practical Ship Operations – I	4
5	BNAL – 034	Practical Bridge Watch Keeping – I	2
Total Credits			18

Table 4.5: Programme Structure of the B.Sc. (Nautical Science) [Semester-IV]

S. No.	Course Code	Name of the Course	Credits
1	BNA – 041	Navigational Aids and Environmental Protection	4
2	BNAL – 041	Practical Navigation – III	4
3	BNAL – 042	Practical Cargo Handling, Stowage & Seamanship - II	4
4	BNAL – 043	Practical Ship Operations – II	4
5	BNAL – 044	Practical Bridge Watch Keeping – II	2
Total Credits			18

Table 4.6: Programme Structure of the B.Sc. (Nautical Science) [Semester-V]

S. No	Course Code	Name of the Course	Credits
1	BNA – 051	Ship Manoeuvring & Future Issue	4
2	BNAL – 051	Practical Navigation – III	4
3	BNAL – 052	Practical Cargo Handling, Stowage & Seamanship - II	4
4	BNAL – 053	Practical Ship Operations – III	4
5	BNAL - 054	Practical Bridge Watch Keeping – III	2
Total Credits			18

As stated, on successful completion of all the courses listed through Tables 4.2 and Table 4.3, a candidate will be awarded **Diploma in Nautical Science (DNS)**. Similarly, the successful completion of all the courses listed through Tables 4.4, Table 4.5 and Table 4.6 a candidate will be awarded Advanced **Diploma in Nautical Science (ADNS)**.

The programme structure worth 20 credits for the Sixth Semester for the award of Second Mate (Foreign Going) Certificate of Competency by the DG Shipping is given in Table 4.7. On successfully clearing the examinations conducted by DG Shipping for the award of Second Mate (FG) Certificate of Competency, 20 credits will be transferred to IGNOU and a candidate will be awarded the degree of B.Sc. (Nautical Science) by IGNOU.

The instructional packages for Ist to Vth Semesters in the form of books/booklets will be provided by IGNOU to individual learners directly or through the approved Training Institutes.

The Training Institutes shall deliver the theoretical and practical components of the first two semesters of the programme which are fully residential in nature and are organized in face to face mode. These Training Institutes shall also be responsible for administering On-Board Ship Training during IIIrd, IVth and Vth Semesters. **However, for the On-Board Ship Training the candidates themselves shall be responsible for getting the placement on the Ships and neither IGNOU nor Directorate General of Shipping or Training Institutes is responsible for making any arrangements in this regard.**

For the sixth semester the students will be required to register in an DGS approved institution and pay the training and other fees as prescribed by the DGS and training institutes.

**Table 4.7: Programme Structure of the B.Sc. (Nautical Science) [Semester-VI]
(With the Directorate General of shipping /MMD)**

Credit Transfer will be allowed by the University for the following Courses forming the part of a Certificate of Competency as Second Mate of a Foreign - Going Ship (<i>Officer In charge of Navigational Watch on Ships of 500 Gross Tonnage or More</i>) issued by the Directorate General of Shipping, Ministry of Shipping, Road Transport and Highways, Government of India under the Merchant Shipping Act 1958 and other applicable International Conventions/Laws:			
S. No	Course Code	Name of the Course	Credits
1	BNA – 061	Terrestrial & Coastal Navigation at Operational Level	4
2	BNA - 062	Celestial Navigation at Operational Level	4
3	BNA - 063	Meteorology at Operational Level	2
4	BNA - 064	Bridge Watch Keeping and Emergencies at Operational Level	2
5	BNA - 065	Signals and Communications at Operational Level – Visual and Oral	2
6	BNA - 066	Cargo Handling and Stowage at Operational Level	2
7	BNA - 067	Ship Construction, Stability, Ship Safety and Environmental Protection at Operational Level	4
8	BNAL - 061	Practical and Oral	Nil (Audit)
9	BNAL - 062	Radar Observer Simulator Course	Nil (Audit)
10	BNAL - 063	Automatic Radar Plotting Aids Simulator Course	Nil (Audit)
11	BNAL - 064	Advanced Fire Fighting Course	Nil (Audit)
12	BNAL - 065	Proficiency in Survival Craft and Rescue Boats	Nil (Audit)
13	BNAL - 066	Medical First Aid Course	Nil (Audit)
14	BNAL - 067	General Operator's Certificate for GMDSS Course	Nil (Audit)
Total Credits			20

4.4 Medium of Instructions

The medium of instructions for this programme is **English**.

4.5 Programme Duration

The minimum duration for this programme is Three years. However, a maximum duration of Six years is permissible to complete the programme.

5. ELIGIBILITY

Admission to this programme is offered on the basis of qualifying in a written test (Entrance Test – OPENNET) conducted by IGNOU. The Entrance Test is conducted twice a year. The candidates seeking admission can fall in two categories namely **Sponsored** and **Non-Sponsored**. Candidates can be sponsored for admission by employing shipping companies/their authorised manning agents registered with the DGS and hence fall under category of **Sponsored** candidates. The **Non-Sponsored** candidates are those candidates who do not get sponsorship for their admission in the programme but they later seek sponsorship for their on-board training after obtaining admission in the programme. The scheme of granting direct admissions (i.e. without appearing/ qualifying in the Entrance Test conducted by IGNOU) to this programme to the candidates sponsored by Shipping Companies and their manning agents has been done away by the Directorate General of Shipping from August-2008 entry. Accordingly, **all candidates (sponsored or non-sponsored) are required to successfully clear the entrance test-OPENNET to become eligible for admission in the programme.** However, individual shipping companies/employers/manning agents are free to conduct their own written examination and/or interviews to select the candidates for sponsorship but all such sponsored candidates would be required to qualify the OPENNET examination before being admitted in the programme. In case of non-sponsored candidates no interviews shall be conducted by IGNOU, however, all such non-sponsored candidates shall be required to attend Counselling session for the allocation of training institutes.

5.1 Educational Qualification

- (1) Pass in 10+2 examination from a recognised Board/University (Please see the list in Annexure V) with Physics, Chemistry and Mathematics (PCM), with not less than 55% marks in PCM aggregate.

OR

With Physics as an individual subject in any one of the years of B. Sc with not less than 50% marks in the final year of B.Sc. from a recognized University provided that the candidate must have passed 10+2 examination with Physics, Chemistry and Mathematics (PCM) from a recognized Board.

OR

B. E./B. Tech. or its equivalent degree from I.I.T or from a college recognized by AICTE/UGC/DEC.

AND

- (2) Should have passed with not less than 50% marks in English as a separate subject, at either 10th or 12th standard or in the Degree programme conducted by a recognised Board/University.

Note 1: Those appearing in eligibility educational qualification examination are also eligible to apply provided they meet all the eligibility criteria and produce the certificates to that effect on or before 1st August 2008.

Note 2: The candidates with three-year Diploma from a recognized polytechnic are also eligible for making application for the entrance test as the three-year polytechnic Diploma is equated with 10+2 examination and accordingly their PCM aggregate in the Diploma programme shall not be less than 55%.

5.2 Age Limit (As on 1st August 2008)

For the session commencing in **August 2008**, the age of the candidate will be reckoned as on 1st August 2008. Depending upon the educational qualification on the basis of which a candidate is seeking admission, the age of the candidate shall be as follows:

- Not more than 20 years in case of 10+2 pass (i.e. a candidate should not be born earlier than 2nd August 1988).
- Not more than 22 years in case of B. Sc. degree (i.e. a candidate should not be born earlier than 2nd August 1986).
- Not more than 24 years in case of BE/B. Tech degree (i.e. a candidate should not be born earlier than 2nd August 1984).

Thus, the age of a candidate seeking admission on the basis of PCM marks of 10+2 examination but having higher qualifications should not be of more than 20 years.

The age limit is relaxable by 2 years in case of female candidates and 5 years for SC/ST candidates.

5.3 Physical and Medical Standards

Medically fit as per the standards set by Merchant Shipping Medical Examination Rules, 2000, as amended from time to time. For details, the candidates are advised to visit the website of Directorate General of Shipping i.e. www.dgshipping.com.

5.4 Eye-sight

6/6 in each eye without visual aids. Normal colour vision. Candidates will have to undergo a full eyesight test conducted by the Mercantile Marine Department (MMD) before being finally selected for the programme.

NOTE:

(1) The candidates are strongly advised that before participating in Entrance Test they shall get themselves medically examined for their physical and medical fitness as per the standards set by Merchant Shipping Medical Examination Rules, 2000, as amended from time to time as well as for their eye-sight to ensure that they meet the relevant criteria in this regard. It would be prudent to get the eye-sight checked from a qualified Eye specialist to ascertain that the candidate possesses 6/6 eye-sight in both eyes and do not suffer from colour blindness or any other deformity of eyes. This will help candidates to avoid any last minute embarrassment besides loss of any fees paid to IGNOU as the same are non refundable. The Admit Card issued by IGNOU shall be sufficient to allow a candidate to appear for the Eye sight Test conducted by MMD and Physical/Medical fitness test conducted by DGS approved doctors. The fee for the medical examination may vary from doctor to doctor and also depending upon city of operation. The expected fee that may be charged, in general, may vary from Rs.500 to Rs.1000. At some locations the fee charged may be higher; however, the fee is not expected to be more than Rs.2000 unless some very special additional tests are carried out in a particular case. The candidates shall insist for a receipt in this regards. The MMD eye-sight test fee is very nominal and a fee receipt is invariably issued by the concerned MMD.

(2) The candidates in their own interest are strongly advised to undergo full medical, before making an application for participation in Entrance Examination, to ascertain their eligibility and to avoid any last minute embarrassment. Some indicative details in this regard are given below. However, it is made clear that the candidates are required to meet the medical criteria as prescribed in Merchant Shipping Medical Examination Rules, 2000, as amended from time to time. The candidates shall also be subjected to full eyesight test conducted by Mercantile Marine Department of Government of India. For details please visit the website of Directorate General of Shipping i.e. www.dgshipping.com. In fact, the candidate undergoing the training programme shall cultivate the habit of visiting this website for their professional purposes.

To be declared fit to undergo the prescribed training programme, a candidate must be in good mental and physical health and free from any bodily defect likely to interfere with the efficient performance of duties.

a) Constitution : There should be no evidence of weak constitution by way of imperfect development of muscles or serious malformation. Weight below 42 kg. and height below 150 cms will be rejected. The chest should be well developed with a minimum range of expansion of 5 cms.

b). Skeletal System : There should be no disease or impairment of functions of bones or joints, contracture or of deformity of chest or any joint, abnormal curvature of spine, deformity of feet like bow legs, knock knees, flat feet, deformity of upper limbs, malformation of the head, deformity from fractures or depression of the skull, fractures (healed) with a pin inside will be a disqualification.

c). Ear, nose and throat : There should be no impaired hearing, discharge or disease in either ear, unhealed perforation of tympanic membrane or signs of acute or chronic suppurative otitis media or evidence of radical mastoid operation, evidence of disease of the bones and cartilage of the nose, nasal polypus or disease of nasopharynx or accessory sinuses. Loss or decay of teeth to such an extent as to interfere with efficient mastication. No disease of the throat, palate, tonsils or gums or any disease or injury affecting the normal function of either temporo mandibular joint. Individuals with severe pyorrhoea are to be rejected.

d). Speech : There should be no impediment of speech (e.g. stammering)

e). Lymphatic System : There should be no enlarged glands, tubercular or due to other diseases in the neck or other parts of the body. Thyroid gland should be normal.

f). Cardiovascular System : There should be no sign of functional or valvular or other disease of the heart and blood vessels. Electrocardiogram should be within normal limits. Systolic blood pressure should not exceed 150mm of Hg nor Diastolic above 90 mm of Hg.

g). Respiratory System : There should be no evidence of chronic or respiratory tract disease, pulmonary tuberculosis or previous history of this disease or any chronic disease of the lungs. X-ray of chest should be normal.

h). Digestive System : There should be no evidence of any disease of the digestive system and that liver and spleen should not be palpable and there should be no abdominal tenderness on palpation.

i). Genitourinary System : There should be no palpable and enlarged kidneys. There should not be any disease of kidneys. Cases showing albuminuria, glycosuria or blood (RBC) in urine will be rejected. There should be no hernia or tendency thereto. Those who have been operated for hernia may be declared fit provided:

- (i) One year has elapsed after the operation. Documentary proof to be produced by the candidate.
- (ii) General tone of abdominal muscles should be good and
- (iii) There has been no recurrence of hernia or complications with the operation. There should be no hydrocele, varicocele, spermatocele or any other defect of genital organs, no fistula and/or anal fissure or evidence of hemorrhoids (Piles), rectal polyps. There should be no active latent or congenital venereal diseases, undescended intra abdominal testicle on one side un-associated with hernia, provided the other testicle is normal and that there is no physical or psychological effect due to undescended testicle will be accepted. Undescended testicle is retained in inguinal canal or at the extra abdominal ring will be rejected.

j). Skin : There should be no skin disease unless temporary or trivial. Scars which by their extent or position are likely to cause disability or marked disfigurement are a cause for rejection.

k). Nervous System : There should be no history or evidence of mental disease of the candidate or in his family. Candidates having history of fits in continence or urine or enuresis will not be accepted. Mental or nervous irritability, abnormality of gait, defective functions of cranial nerves, in co-ordination, motor or sensory defaults will be rejected.

l). Eye Sight : There should not be any degree of squint or any morbid condition of eyes or of the eyelids that is liable to aggravate or recur, pressure of trachome and iris complication sequela. Candidates must possess good binocular vision (fusion faculty and full field of vision in both eyes). Movement of the eyeballs must be full in all directions and the pupils should react

normally to light and accommodation. The vision should be 6/6 (normal) (without glasses) in each eye separately with normal colour vision.

m). Any other defect which in the opinion of the medical board will interfere with the individual's efficiency as an officer of the merchant navy

(3) The candidates are expected to possess good communication skills in English. It is recommended that the candidates should have good command in written and spoken English language as the same may help the candidates to improve their performance in the entrance test and interviews for on-board placement which are conducted in only English, in comprehending the courses taught and also getting placements with the employing shipping companies.

6. FEE STRUCTURE

6.1 Registration Fee

The registration fee for the programme is Rs.500/- (Rs.600/- in case of downloaded form which is inclusive of price of Students handbook and Prospectus) is to be paid along with application form for Entrance Test (OPENNET – August 2008) i.e. **Form-A**.

6.2 Programme Fee

The programme fee consists of two components, i.e. the fee to be paid to IGNOU and the fee which is to be paid to the Training Institute. The fee to be paid to IGNOU is Rs.27500/- @ Rs.5500/- per semester for the first five semesters of the programme. The Non-Sponsored candidates will pay programme fee to IGNOU in two stages. They will be required to pay Rs.10000/- at the time of counselling for the allotment of training institute and balance Rs.17500/- along with application form for admission (Form-B) after reporting at the Training Institute. The Sponsored candidates will pay programme fee of Rs.27500/- in one stage along with the application form for Admission (**Form-B**).

The fees to be paid to the Training Institute may vary from one institute to another. The fees payable to Training Institutes include boarding and lodging for the first two semesters as this stage of the programme is fully residential, and administration charges for the On-Board Ship Training for the Third, Fourth and Fifth semesters. The fees payable to Training Institutes are generally expected to be in the range of Rs. 1.8 lacs to 2.5 lacs. The exact fees payable to a particular institute can be found out from the website of Directorate General of Shipping i.e. www.dgshipping.com and/or by making enquiries from respective Training Institutes/visiting their websites. All the Training Institutes have been directed by the Directorate General of Shipping to announce their fees in advance which shall include all the fees payable to the Training Institute for the first five semesters. Such details are also to be provided by the Training Institutes for publication in the Students Handbook and Prospectus. The candidates are strongly recommended to make enquires regarding fees etc., well in advance before exercising choice for the Training Institutes while filling up the application form for the Entrance Test (OPENNET). Some concessions in fees payable to Training Institutes owned by the Government of India is available for female candidates, therefore, such candidates are advised to find out details from the respective institutes.

The fees for the Sixth Semester are not included herein as the same are to be collected by the Post-sea Training Institutes and MMD/DGS and these are announced separately by the Post-Sea Training Institute and the Directorate General of Shipping, Mumbai.

The fees are subject to revision from time to time.

6.3 Mode of Payment

The fees payable to IGNOU are to be paid in the form of a **Demand Draft** drawn in favour of IGNOU payable at Delhi/New Delhi.

The Directorate General of Shipping has mandated all the institutes to collect their fees in the form of account payee Cheque/Draft only and under no circumstances the institutes are authorised to collect any fees in Cash. The candidates shall not pay any fee to the training institute for which a receipt is not issued by the institute and in case it becomes unavoidable to the candidates the same shall be brought to the notice of Directorate General of Shipping as well as IGNOU.

6.4 Refund of fees

Fees once paid to IGNOU will not be refunded as a rule in general. However, since this programme is on different footing, the refund of fees paid to IGNOU shall be governed as per the following rules:

1. The Registration fee/fee for OPENNET shall remain non-refundable in all cases.
2. In case of incomplete Application Forms received for the OPENNET, no refund of any fee shall be granted.
3. The Non-sponsored candidates who are allotted the Training Institute other than the Institute of their choice on the basis of their merit who do not wish to join the Institute so allotted, shall be entitled to full refund of Rs.10,000/- paid at the time of Counselling provided their claim for the refund is filed with the University within 10 days from the date of commencement of the programme. For any claim received thereafter up to 30 days from the date of commencement of the programme, a deduction of Rs.5,000/- shall be made and beyond this period no refund shall be permissible.
4. The Non-sponsored candidates who are allotted the Training Institute of their choice on the basis of their merit but do not report for the joining at the allotted Institute and instead file an application for the refund within 10 days from the date of commencement of the program shall be entitled for a refund after allowing a deduction of Rs.5,000/-. Thereafter, no refund shall be granted.
5. The Non-sponsored candidates who make to the merit list of selected candidates but fail to meet the minimum eligibility marks in their eligibility educational qualification examination (i.e. 10+2/ B.Sc./ B.Tech.) for which the result was awaited from the respective Board/University on the date of Counselling for the allotment of Training Institute, may be allowed full refund of Rs.10,000/- paid at the time of counselling provided they produce the proof to this effect along-with their claim for the refund which shall be filed in the University within 10 days from the date of commencement of the programme. For any claim received thereafter up to 30 days from the date of commencement of the programme, a deduction of Rs.5,000/- shall be made and beyond this period no refund shall be permissible.
6. The Non-sponsored candidates who fail to clear MMD eye-sight test on account of being Colour Blind shall be entitled for a refund after deducting Rs.5000/- provided such a claim is made within 10 days from the commencement of the programme. All such requests invariably shall be accompanied with the Report of such failure in Original issued by the concerned MMD. In these cases, the requests must have endorsement of the concerned Captain Superintendent/ Head of the Institute. The candidates may keep a photocopy of the Certificate issued by the MMD.
7. The Non-sponsored candidates, who make to the merit list of the selected candidates but do not meet the minimum eligibility marks in their eligibility educational qualification examination (i.e. 10+2/ B.Sc./ B.Tech.) for which the result was already available (declared by the Board/University) and/or due to age criteria and this fact of ineligibility is noted by the University/ Training Institute/ Candidate before his joining the programme, may be permitted refund of fees in the following manner:

The Non-sponsored candidate shall bring his ineligibility to the notice of the University on his own immediately but before the commencement of the programme by means of making fax (at the School of Engineering & Technology (011-29534529)/ e-mail (of IGNOU-DGS Project i.e. ignoudgs@yahoo.co.in / ignoudgs_studentinfo@yahoo.co.in or as notified) followed by a written request along with documentary evidences in Original to establish ineligibility in terms of minimum eligibility marks in their qualifying eligibility examination and/ or age criteria. Such written request for refund shall reach IGNOU within 10 days from

the date of commencement of programme and the candidate may be allowed a refund of Rs.5,000 after making a deduction of Rs. 5,000/- from Rs.10,000/- already paid by the candidate at the time of Counselling. For any claim received thereafter or without following the procedure given herein, no refund shall be permissible.

8. The candidates who are otherwise eligible for the programme in all respect and withdraw after the joining and attending the programme at the Training Institute shall be entitled for a refund of fees in the following manner:
 - (i) Withdrawal within 30 days after the commencement of the programme: Refund of fees after allowing a deduction equivalent to one semester fees (i.e. Rs.5500/-). In case the course material is already issued to the candidate by IGNOU/Training Institute, a further deduction equivalent to one semester fees shall be applicable.
 - (ii) Withdrawal after 30 days but within 120 days after the commencement of the programme: Refund of fees after allowing a deduction equivalent to two semester fees (i.e. Rs.11,000/-).
 - (iii) Withdrawal after 120 days but within 180 days after the commencement of the programme: Refund of fees after allowing a deduction equivalent to three semester fees (i.e. Rs.16,500/-).
 - (iv) Withdrawal after 180 days after the commencement of the programme and duly registered for the Onboard Training but before proceeding for the Onboard Training on Medical Grounds: Under exceptional medical grounds (i.e. where it is certified that the candidate is no longer fit for the sea-service) refund may be permissible at the discretion of the competent authority after allowing a deduction equivalent to three semester fees (i.e. Rs.16,500/-). The claim for the refund of fees on medical ground under this clause must be preferred within one calendar year from the date of commencement of the programme and claims received beyond this period shall be summarily rejected.

Note: All the applications for the refunds falling under this category (Item-8 above) from the candidates who are otherwise eligible for the programme, shall be routed through respective Captain Superintendent/ Head of the Training Institute and submitted along with the proof (in Original) of being eligible for the programme in all respect, i.e. eligibility in terms of educational qualifications, age and medical fitness inclusive of Eye-sight Test Report issued by the MMD in original. If applicable, the statement to the fact that whether course material was already issued to candidate, shall also be indicated by the Training Institute. The candidates whose original testimonials towards educational qualifications and age are already scrutinised/ verified by IGNOU are exempt from submitting originals to establish their eligibility in terms of educational qualifications and age. All the applications in the sub-category (iv) above shall be duly supported with the medical background of the candidate issued by a Doctor duly registered/ recognised/ empanelled with the Directorate General of Shipping besides endorsement from the Captain Superintendent/ Head of the Training Institute

9. No refunds shall be permissible in cases other than what is given above.
10. No refund shall be permissible in the cases where the candidature of a candidate is found supported with fake/ forged testimonials or those issued from unauthorised/ non-recognised Boards/Universities. In all such cases, besides forfeiting the fees, the University, at its discretion, shall be at the liberty to initiate appropriate proceedings against such candidates.
11. No refund shall be permissible in cases where it is noted by the University that the candidate is not eligible for the programme and he/she shall not have been admitted in the programme at Training Institute.
12. All the requests for the refund shall be sent to the “Project Coordinator, IGNOU-DGS Project, School of Engineering and Technology, Indira Gandhi National Open University, New Delhi-110068. All the refunds shall be processed on the basis of date of receipt of request for the refund at this office. No postal or any other delays shall be entertained in the matter of

calculating the number of days from the commencement of the programme and thus the applicable amount of refund.

13. The applicable refunds in the form of account payee cheque payable at New Delhi shall be directly sent to the candidates by Registered Post/Speed Post at his/her address available in the records of the University.

7. ADMISSION PROCEDURE

- 7.1 The admission for this programme is offered twice a year, i.e. in January/February and July/August. IGNOU invites applications from prospective learners through advertisements in national and regional dailies detailing all the relevant information and criteria for admission.
- 7.2 As per the latest guidelines issued by the Directorate General of Shipping, Mumbai, it is now mandatory for all the candidates to qualify in the Entrance Test (OPENNET) conducted by IGNOU to seek admission in B.Sc. (Nautical Science) programme of IGNOU-DGS, irrespective of whether their candidature is sponsored by a Shipping Company/DGS approved (RPS registered) manning agent or not..
- 7.3 **Interaction with the Prospective Candidates:** There shall be two live interactive sessions with the prospective candidates on Gyan Darshan-2 TV Channel (the Teleconferencing channel of IGNOU) **on 27th April 2008 (Sunday), 12:00 -13:45 PM and 12th May 2008 (Monday) 12:00 -13:45 PM.** This channel is available on Doordarshan's Free DTH service and Zee's DishTV DTH (Channel no. 1590). The candidates, employing shipping companies and their manning agents, Training Institutes can ask their questions on All India Toll-Free no. 1800-11-2345 (from MTNL and BSNL landlines). The other Direct Phones in the Studios are 011-29532844/45 and 011-29536131 and fax number in the Studios is 011-2953613. Capt. J. S. Uppal, Dy. Nautical Adviser to the Govt. of India, Directorate General of Shipping, Mumbai, Capt. K.S. Varadkar, the Domain Expert, IGNOU, and Project/Programme Coordinator of IGNOU shall be participating in the session from the Studios at New Delhi. While asking your question please reduce the volume of television set.
- 7.4 Admission to this programme is offered on the basis of qualifying in a written test (Entrance Test – OPENNET) conducted by IGNOU. The Entrance Test is conducted twice a year. For each entry session a separate Entrance Test is conducted.
- 7.5 The eligible candidates in all respect i.e. educational qualifications, age, physical and medical standards, eye-sight need to apply for the Entrance Test (OPENNET) conducted by IGNOU. Those appearing in eligibility educational qualification examination (i.e. 10+2/ B.Sc./ B. Tech.) are also eligible to apply provided they meet all the eligibility criteria and produce the certificates to that effect on or before 1st August 2008. The candidates with three-year Diploma from a recognized polytechnic are also eligible to apply for the Entrance Test as three-year polytechnic Diploma is equated with 10+2 examination and accordingly their PCM aggregate in the Diploma programme shall not be less than 55%.
- 7.6 The candidates seeking admission can fall in two categories namely **Sponsored** and **Non-Sponsored**. A candidate can be sponsored for admission by an employing shipping company/their authorised manning agents registered with the DGS and hence fall under category of **Sponsored** candidates. The **Non-Sponsored** candidates are those candidates who do not get sponsorship for their admission in the programme but they later seek sponsorship for their on-board training after obtaining admission in the programme. The scheme of granting direct admissions (i.e. without appearing/ qualifying in the Entrance Test conducted by IGNOU) to this programme to the candidates sponsored by Shipping Companies and their manning agents has been done away by the Directorate General of Shipping from August-2008 entry. Accordingly, **all candidates (sponsored or non-sponsored) are required to successfully clear the entrance test-OPENNET to become eligible for admission in the programme.** The Sponsored and Non-Sponsored candidate appear together in the OPENNET

and obtain minimum qualifying marks. Those below the qualifying marks will not be allotted any Training Institute.

- 7.7 Various employing shipping companies/ their manning agents registered with the Directorate General of Shipping, Mumbai may also advertise for the programme for selection of candidates for sponsorship clearly mandating that all such candidates will have to appear in the Entrance examination (OPENNET) to be conducted by IGNOU on **15th June-2008 (Sunday) 10AM – 1 PM** for which the candidates shall make separate application to IGNOU. In case of Sponsored candidates, the companies are free to set their own criteria of selection (Written test/ Interviews/ Higher passing percentage in eligibility educational qualification examination etc.) provided they meet the minimum eligibility as prescribed in “Section-5 Eligibility” given in this Student Handbook and Prospectus. All such aspirants must qualify in the OPENNET examination. Thus, they need to additionally apply for the OPENNET examination of IGNOU. For the Sponsored candidates it would be sufficient that they are declared qualified in the Entrance Test (OPENNET) and are sponsored by the Shipping Companies / DGS approved (RPS registered) Manning Agents. All such Sponsored candidates who qualify in the Entrance Test conducted by IGNOU shall be allocated IGNOU-DGS approved Training Institute as per their tie up arrangements with the employing shipping companies/ registered manning agents. Thus, in case of sponsored candidates, this allocation of Training Institutes is directly done by the sponsoring shipping companies / registered manning agents and accordingly these sponsoring shipping companies / registered manning agents shall communicate to the Sponsored candidates the name of Training Institute allotted to them as per the tie up between the sponsoring shipping companies /registered manning agents and the Training Institutes. However, in few cases, it may happen with some candidates that initially Shipping Companies / DGS approved (RPS registered) Manning Agents may put their name in the waiting list or otherwise and later they may not be in a position to accommodate them as their Sponsored candidate. All such candidates, if they wish, can participate in the Counselling Session conducted by IGNOU for the allocation of Training Institutes to the Non-Sponsored candidates and accordingly they shall then be treated as Non-Sponsored candidates. Similarly, there may be some Non-Sponsored candidates who may qualify in the OPENNET examination and thereafter may get selected by employing Shipping Companies / Manning Agents in response to their advertisements. All such Non-sponsored candidates then be termed as Sponsored candidates and they need not participate in the Counselling Session conducted by IGNOU for the allocation of Training Institutes to the Non-Sponsored candidates. However, it is made clear that any candidate who participate in the Counselling Session conducted by IGNOU for the allocation of Training Institutes and finally allotted a Training Institute by IGNOU shall be categorised as a Non-Sponsored candidate.
- 7.8 The Entrance Test (OPENNET) will be conducted in different cities in India (**Annexure-III**) on **15th June, 2008 (Sunday) 10 AM-1 PM**. The OPENNET shall have 180 objective type multiple choice questions distributed in **six** parts which are to be attempted in 3 hours duration. A candidate will be assessed in English, General Knowledge, Reasoning Aptitude, Mathematics, Physics, and Chemistry. The standard of this Entrance Test will generally be that of 10+2 level. These six parts are as follows:
- | | | |
|------|--------------------|--------------|
| i) | English | 30 questions |
| ii) | General Knowledge | 30 questions |
| iii) | Reasoning Aptitude | 30 questions |
| iv) | Mathematics | 30 questions |
| v) | Physics | 30 questions |
| vi) | Chemistry | 30 questions |
- 7.9 The Sponsored and Non-Sponsored candidate appear together in the OPENNET and obtain minimum qualifying marks as decided by the IGNOU/DGS. The Entrance Test –OPENNET shall carry 100% weightage for the purpose of drawing up the merit list for admission of Non-

Sponsored candidates. No interviews shall be conducted by IGNOU for the admission in case of Non-Sponsored candidates.

- 7.10** The Training Institute shall communicate the available firm vacancies to be filled by the Non-sponsored candidate to IGNOU by 12:00 Noon of 16-07-2008 (Wednesday).
- 7.11** The candidates are strongly advised that before participating in Entrance Test/Counselling for the allotment of Training Institute, they shall get themselves medically examined for their physical and medical fitness as per the standards set by Merchant Shipping Medical Examination Rules, 2000, as amended from time to time as well as for their eye-sight to ensure that they meet the relevant criteria in this regard (These rules are available on the website of the Directorate General of Shipping, Mumbai i.e www.dgshipping.com. It would be prudent to get the eye-sight checked from a qualified Eye specialist to ascertain that the candidate possesses 6/6 eye-sight in both eyes and do not suffer from colour blindness or any other deformity of eyes. This will help candidates to avoid any last minute embarrassment besides loss of any fees paid to IGNOU as the same are non refundable. The Admit Card issued by IGNOU shall be sufficient to allow a candidate to appear for the Eye sight Test conducted by MMD and Physical/Medical fitness test conducted by DGS approved doctors. The fee for the medical examination may vary from doctor to doctor and also depending upon city of operation. The expected fee to be charged, in general, may be Rs.500 to Rs.1000. At some locations the fee charged may be higher; however, the fee is not expected to be more than Rs.2000 unless some very special additional tests are carried out in a particular case. The candidates shall insist for a receipt in this regards. The MMD eye-sight test fee is very nominal and a fee receipt is invariably issued by the concerned MMD.
- 7.12** There shall be **Counselling Sessions** for the allocation of Training Institutes to the OPENNET qualified Non-Sponsored candidates which shall be conducted at **IGNOU, Maidan Garhi, New Delhi-110068**. The exact Venue details shall be published on the website of IGNOU i.e. www.ignou.ac.in. The Sponsored candidates are not required to participate in the Counselling session. However, the Sponsored candidates, at their discretion, can also participate in the Counselling and in that situation they shall be treated as the Non-sponsored candidates. To participate in the Counselling, the candidates shall bring a Demand Draft for Rs.10,000/- drawn in favour of IGNOU payable at New Delhi. No cash/cheque/postal order or payment in any other form shall be accepted. The non-sponsored candidates are required to report at IGNOU, New Delhi for the Counselling for the allocation of Training Institutes on the 17th July (Thursday), 18th July (Friday) & 19th July (Saturday) 2008 depending upon their rank in the merit list of OPENNET examination as per the given schedule:

**Dates and Time of Counselling for the allotment of Training Institute
(Non-sponsored candidates)**

For SC/ST Candidates:

10:00 AM of 17th July-2008 (Thursday)

For other candidates:

<u>Rank 1 to 250</u>	:	11:30 AM of 17 th July-2008 (Thursday)
<u>Rank 251 to 750</u>	:	2:30 PM of 17 th July-2008 (Thursday)
<u>Rank 751 to 1250</u>	:	10:00 AM of 18 th July-2008 (Friday)
<u>Rank 1251 to 1750</u>	:	02:30 AM of 18 th July-2008 (Friday)
<u>Rank 1751 & Onwards</u>	:	10:00 AM of 19 th July-2008 (Saturday)

At the time of Counselling for the allotment of Training Institute you will be required to produce your Admit Card of Entrance Examination. You may also be asked to produce your original testimonials at the time of Counselling at IGNOU. However, you will have to necessarily produce your all original certificates/testimonials before the Head/Training Superintendent of the Training Institute at the time of taking admission who shall ascertain the genuineness of documents and certify your eligibility for the programme. These documents

shall also be forwarded to IGNOU for verification. The allotment of Training Institute during the Counselling does not mean that your eligibility and original certificates, testimonials etc. have been verified by IGNOU.

- 7.13** During the **Counselling**, the selected Non-Sponsored candidates shall be assigned by the University to Training Institutes (**listed in Annexure-I**) strictly on the basis of the merit (in the OPENNET), choice of Training Institute exercised by the candidates in the application form for the Entrance Test (OPENNET) i.e. **Form-A** and number of available vacancies at various Training Institutes after accommodating Sponsored candidates of Shipping Companies/ DGS approved (RPS registered) Manning Agents as per their tie up with the Training Institutes. At the time of counselling, the candidates accepting the allotment of Training Institute shall be required to deposit the Demand Draft for Rs.10,000/- drawn in favour of IGNOU payable at New Delhi. Those who fail to deposit the requisite demand draft at the time of allotment of Training Institutes shall not be allotted any seat/Training Institute.
- 7.14** Those candidates who for some reason fail to attend the **Counselling** Session in person may authorise their representative to participate on their behalf. Such candidates shall send their request in writing which shall be presented to IGNOU by the authorised representative at the time of Counselling.
- 7.15** The Student Handbook and Prospectus can be obtained from IGNOU headquarters, New Delhi on weekdays during working hours on payment of Rs.100/- in cash from 25th April 2008. It can also be downloaded from IGNOU website i.e. <http://www.ignou.ac.in>. The arrangements are also being made to make it available through some selected Regional centres of IGNOU w.e.f 10th May, 2008. It can also be obtained by POST by sending Demand Draft for Rs.200/- drawn in favour of IGNOU and payable at Delhi/New Delhi, by addressing your request to the

IGNOU-DGS PROJECT
(Room No. 109 Block- C)
SCHOOL OF ENGINEERING AND TECHNOLOGY
INDIRA GANDHI NATIONAL OPEN UNIVERSITY
MAIDAN GARHI, NEW DELHI – 110 068

Those who wish to obtain Student Handbook and Prospectus by post can send their requests for Students Handbook and Prospectus which shall reach IGNOU in an envelope super-scribing “REQUEST FOR STUDENT HANDBOOK AND PROSPECTUS FOR B.SC. (NAUTICAL SCIENCE) PROGRAMME”. The request for sending the application form by Post shall be entertained upto 16th May 2008 (Friday). The application forms shall be sent by Speed Post/Registered Post. However, IGNOU shall not be responsible for any postal delays.

- 7.16** There are two distinct forms in this Student Handbook and Prospectus. The Application Form **A** is for the Entrance Test (OPENNET-August 2008). The Application Form **B** i.e. Application Form for Admission - August 2008 is to be filled-in by the candidate who successfully make to the list of Selected candidates drawn on the basis of Entrance Test (OPENNET) and also by the candidates who are seeking admission on the basis of their Sponsorship by a Shipping Company after qualifying the Entrance Test (OPENNET).
- 7.17** Completed Application Form for the Entrance Test (OPENNET) i.e. Form **A** along with the prescribed registration fee of Rs.500/- (Rs.600/- in case of downloaded application form) in the form of a Demand Draft drawn in favour of IGNOU and payable at Delhi/New Delhi should reach in an envelope super-scribed “Application form for OPENNET-August-2008” to the “**Registrar (Student Registration and Evaluation Division), Block-12, Indira Gandhi National Open University, Maidan Garhi, New Delhi – 110068**” on or before the last date of submission of applications i.e. **27th May 2008 (Tuesday)**. Incomplete Application Forms or those received after the due date will be summarily rejected and no enquiries will be entertained in this regard. The students are, therefore, advised to fill the relevant information carefully in the Application Form **A** for Entrance Test (OPENNET-August 2008

Session). **Please see the checklist before sending the Application Form.** The University will not accept any statement from the students about their ignorance in meeting these requirements.

- 7.18** In case the number of candidates for the Entrance Test at the city of your choice is less than 10, you may be allotted an examination centre in another city. **No request for change of centre will be entertained.**
- 7.19** You are advised to retain a photocopy of the filled-in Application Form. On the basis of information furnished by you in the Application Form, you would be sent an Admit Card for the Entrance Test. In case you do not receive the same, you should check for it on the website of IGNOU and take a printout of the same and paste your photograph over it and get it attested from a Gazetted Officer. At the time of Entrance Test, on this print out you will be required to put your signature in the presence of Invigilator thereafter the Invigilator will also put his signature on this copy. In case your Admit card is also not found on the website, please contact the Registrar (SRED) along with the photocopy of the Application Form submitted by you for the issuance of a Duplicate Admit Card.
- 7.20** You will make sure that you retain your Admit card with you duly countersigned by the Invigilator concerned after the Entrance Test and keep it in safe custody. You will be required to produce it at the time of Counselling for the allotment of Training Institute. You may also be required to produce your Admit Card at the time of Interviews conducted by shipping companies/their manning agents. Finally, this Admit Card is to be enclosed along with the Application Form **B** for Admission. You may also be asked to produce your original testimonials at the time of Counselling at IGNOU. However, you will have to necessarily produce your all original certificates/testimonials before the Training Superintendent of the Training Institute at the time of taking admission who shall ascertain the genuineness of documents and certify your eligibility for the programme. These documents shall also be forwarded to IGNOU for verification.
- 7.21** Continuation of your admission beyond Second Semester i.e. in 3rd, 4th and 5th Semesters which includes On-board Ship training will be possible only after the candidate gets the placement on the Ship which shall be the responsibility of the candidate himself/herself. Many ship owners and manning agents visit training institutes of repute and interview cadets who are not sponsored (Campus Interviews) and select them. Non-sponsored cadets are therefore advised to strive to get admissions in Institutes of repute for their pre-sea training (1st and 2nd Semesters). They shall also try to score better marks in their term end examinations. In addition, such candidate must improve their command over written and spoken English. All these would enhance their chances of getting an early shipboard placement. The non-sponsored candidates are accordingly advised not to fall pray to the promises made by unauthorised agents of placements onboard ships against payment of large sums of money.
- 7.22** No candidate will be admitted as a Training Institution sponsored candidate. In case of shipping company sponsored candidates, the respective Training Institutions are required to satisfy themselves as to the credibility of the shipping company where the sponsoring shipping company is not a member line of Indian National Ship Owner's Association (INSA)/Foreign Owners & Ship Manager's Association (FOSMA)/Maritime Association of Ship Owners, Ship Managers and Agents (MASSA). In cases, where a sponsored candidate, after successful completion of on-shore training of first and second semesters (1st year) is not absorbed by the sponsoring Shipping Company within a reasonable time of 9 months, the DGS/IGNOU may reduce intake capacity of such training institute for future training programmes. This may also lead to withdrawal of programme and/or institute's approval by the DGS.
- 7.23** The Training Institutions are required to collect the duly completed **form B** for Admission to B.Sc. (Nautical Science) Programme from the candidates and send these to IGNOU by **4th August, 2008** (Monday) with the requisite fees Rs.17500/- (Rs.27500 in case of sponsored candidates). The **Form B** should be sent through the Training Institute to the Project Coordinator, IGNOU-DGS Project, School of Engineering & Technology, Indira Gandhi

National Open University, Maidan Garhi, New Delhi – 110068 so as to complete the enrolment formalities. **Please see the checklist before sending the Application Form.** The University will not accept any statement from the students about their ignorance in meeting these requirements. The candidates will have to necessarily produce their all original certificates/testimonials before the Training Superintendent of the Training Institute at the time of taking admission who shall ascertain the genuineness of documents and certify your eligibility for the programme. These documents shall also be forwarded to IGNOU for verification.

The sponsored candidates are advised to seek sponsorship only from *bonafide* Shipping Companies or their duly registered manning agents. The website of DGS has relevant information in this regard and the same may be made use of. Also, it is in the interest of sponsored candidates to possess a letter of sponsorship in their own custody so as to make sure that they are duly sponsored. Such letter of Sponsorship shall clearly mention the name of the candidate, date of birth, father's/mother's name, the e-mail ID of shipping company/manning agents and their contact telephones etc. **The IGNOU/DGS can ask for the production of Sponsorship letter in Original from the candidates admitted as Sponsored candidate and failing which admission the admission is liable for cancellation.**

- 7.24** Fees once paid to IGNOU will not be refunded as a rule in general. However, since this programme is on different footing, fee refunds to the limited extent are permissible under the rules as prescribed under Sub-section 6.4 of this Student Handbook and Prospectus.
- 7.25** The **reservation for Scheduled Caste (S/C) and Scheduled Tribe (S/T)** candidates shall be as per Government of India rules. In the past it has been observed that the number of seats earmarked for the SC/ST candidates were more than the number of SC/ST candidates who applied for the programme. Also, there were very few ST applicants.
- 7.26** Some Training Institutes help the candidates in arranging bank loans to finance the fees etc. More details can be found from these Training Institutes. For bank loans, the candidates should get in touch with the Training Institutes immediately after the allotment of seat.

8. EVALUATION SYSTEM FOR PROGRAMME

The salient features of the evaluation scheme for different courses under the programme are given in Table 8.1 for the 1st and 2nd Semesters and Table 8.2 for the remaining semesters. There is different pass percentage required for different courses as may be noted from these tables. It is compulsory to submit all the prescribed assignments. A student will receive marks for Continuous Evaluation part as well as for Term End Examination part for each theory courses. To clear a course, a student will have to clear both the components of evaluation separately. Similarly, for laboratory course, one has to clear the guided and unguided components separately.

8.1 Continuous Evaluation and Assignments

Assignments constitute the continuous evaluation components of a course. The marks that you get in your Continuous Evaluation Components will be counted in your final result. Therefore, you are advised to take your Continuous Evaluation Components seriously.

More specifically, you have to attempt the assignments compulsorily. You will not be allowed to appear for the term-end examination for a course if you do not submit all assignments in time for that course.

The main purpose of assignments is to test your comprehension of the learning material you receive from us and also to help you get through the courses by providing feedback to you. The information given in the written course material should be sufficient for answering the assignments. The course co-ordinators should however encourage the cadets and make available to them extra reading material and the facility of internet, so that the students have a wider concept of the subject matter.

Whenever you receive a set of assignments, check them immediately and ask for missing pages, if any, from **Registrar, Material Production & Distribution Division, IGNOU, Maidan Garhi, New Delhi – 110068** or the Coordinator of your Study Centre (**Proforma- III**). The assignments for this programme are made available through Training Institutes.

The assignment responses should be complete in all respects. Before submission you should ensure that you have answered all the questions in all assignments. Incomplete answer sheets bring you poor grades. Read the assignments carefully and follow the specific instructions, if any, given on the assignments itself. Go through the units on which assignments are based. Make some points regarding the question, rearrange those points in a logical order and draw up a rough outline of your answer. While answering an essay type question, give adequate attention to introduction and conclusion. The introduction must offer your brief interpretation of the question and how you propose to develop it. The conclusion must summarise your response to your question. Make sure that the answer is logical and coherent, and has clear connections between sentences and paragraphs. The answer should be relevant to the question given in the assignment. Make sure that you have attempted all the main points of the question. Once you are satisfied with your answer, write down the final version neatly and underlining the points you wish to emphasise. While solving numerical, use proper units and give working notes wherever necessary.

Use only foolscap size paper for your response and tie all the pages carefully. Avoid using very thin paper. Allow a 4 cm margin on the left and at least 4 lines in between each answer. This may facilitate the evaluator to write useful comments on the margins at appropriate places. Write the responses in your own hand. Do not print or type the answers. Do not reproduce your answers from the units sent to you by the University. Evaluators/co-coordinators shall discourage the students from reproducing their TMA answers from the learning material, by giving them poor marks.

Do not copy from the response sheets of other students. If copying is noticed, the assignments of such students are to be rejected.

Write each assignment separately. All answers in the assignments should be written in continuity. Write the respective question number with each answer.

Note: The course counsellor are authorised to award ZERO marks or reduced marks at his/her discretion in assignment(s) in case it is noted that that you have simply copied your assignment(s)

The completed assignment should be submitted at the allotted Training Institute. Under no circumstances you should send the tutor marked response sheets to the Student Registration and Evaluation Division at the Headquarters for evaluation.

INSTRUCTIONS FOR DOING ASSIGNMENTS

- (1) Read instructions for submission of assignments given in your Programme Guide carefully.
- (2) Assignments should be demanded only, if your registration for that course (Subject) is valid.
- (3) Please ensure that you have mentioned your correct Enrolment No. (it consists of 9 digits), Name, Course Code/Title, Name of Semester/Year, wherever applicable and Study Centre on your assignments responses before submitting it to the concerned authorities.
- (4) Submission of assignments within due dates is a prerequisite for appearing in the term-end-examination. You are, therefore, advised to submit your Tutor Marked Assignments (TMAs) at your Study Centre and CMAs to the Registrar (SRED), IGNOU, Maidan Garhi, New Delhi – 110 068, within the prescribed dates. Assignments received after due dates will be summarily rejected.
- (5) You can appear in term-end-examination or submit only minimum required of assignments if you fail to secure over-all qualifying grade in a course (subject).
- (6) Assignments should not be demanded to improve your score if you have secured minimum qualifying score in a course (subject). Improvement in Continuous Evaluation is not permitted.
- (7) Please do not submit your assignment responses twice either at the same Study Centre or at different Study Centres for evaluation.

8.2 Term-end-Examination

As stated earlier, term-end examination is another component of the evaluation system. The University conducts term-end examinations twice a year, i.e. in June and December. You can take the examination after the completion of the study of a course.

To be eligible to appear in the term-end examination in any course in a given semester, you are required to fulfil the following conditions:

- You should have submitted the prescribed assignments for the respective courses.
- You should have submitted the examination form in time (which is explained later).

It is an essential prerequisite for you to submit the **Examination Form** (Given in this Handbook as Proforma-IV) for taking examination in any course. Copies of the examination forms are available at your Training Institute/Regional Centres/SRE&D at Headquarters. Examination forms can also be filled online. The prescribed examination fee can also be paid online using credit/debit card. The format of Examination form may undergo changes from time to time.

Only one form is to be submitted for all the course/course-topic in one term-end examination. **The format of examination form may undergo changes time to time.** The fees for Term end examination is Rs.50/- per course besides any applicable late fee (Please see the latest available examination form at your Training Institute. The examination fees and or late fee are subject to revision from time to time). Keep visiting www.ignou.ac.in for any latest update on examination and other matters. No examination fee is required to be paid for the courses which do not appear in the Term End Examination Date Sheet.

After receiving the examination form, the University will send **intimation slip** to you at your Training Institute before the commencement of examinations. If your name is registered for examinations in the list sent to the Examination Centre, even if you have not received intimation slips or misplaced the intimation slip, you can take the examination by showing your Identity Card (Student Card) to the Examination Centre Superintendent. The Hall Ticket for the Term End Examination can also be downloaded from website of IGNOU.

Be careful in writing your Enrolment Number correctly on the answer script. Any mistake in writing the Enrolment Number may result in non-declaration of your result.

It is your duty to check whether you are registered for particular course(s) and eligible to appear for the examination or not. If you neglect this and take the examination without being eligible for it, your result may be cancelled by the SRED. The Training Institute is the contact point for you. The University cannot send communications to all the students individually. All the important communications are sent to the Coordinator of your Training Institute who is generally the Captain. Superintendents of your Training Institute who would display a copy of such important circular/notification on the notice board of the Institute.

While communicating with the University regarding examination or any other matter, please clearly write your enrolment number, name and code of your Study Centre (Training Institute) and complete address of yours. If possible also mention your e-mail address and other telephone contact details to expedite information flow. In the absence of such details, IGNOU may not be able to attend to your problems.

Properly filled-in examination form is to be submitted to the *Registrar (Student Registration and Evaluation), Indira Gandhi National Open University, Maidan Garhi, New Delhi – 110 068*. The last date for submission of examination forms is generally 31st March for the examinations to be held in June and 30th September for examinations to be held in December. However, examination forms may also be submitted within 20 days of the last date, i.e. 20th April and 20th October for June and December examinations respectively with a late fee payable with the examination forms. The examination forms with the late fee are generally required to be submitted at the respective regional centres. Examinations forms received at the Headquarters after the last date with late fee shall be rejected. The Examination Forms with additional late fee can also be accepted, subject to certain additional restrictions, up to 28th May/ 28th November. For the latest details on EXAMINATION FORM and related matters please visit www.ignou.ac.in.

Table 8.1: Evaluation Scheme for B.Sc. (Nautical Science) Semesters I & II

Course Code	Course Title	Pass % in individual components of continuous assessment as well as TEE	Weightage		Term End Exam	
			Cont. Assessment	T.E.E.	Duration	Max. Marks
Semester I						
BNA 011	Applied Mathematics	40	30%	70%	2 hrs.	70
BNA 012	Applied Science	40	30%	70%	2 hrs.	70
BNA 013	Applied Electricity & Electronics	40	30%	70%	2 hrs.	70
BNA 014	Navigation-I: Terrestrial & Celestial	60 (70 up to Jan-07 Entry)	30%	70%	3 hrs.	70
BNA 015	Navigation-II: Bridge Equipment, Watch Keeping, Meteorology & Oceanography	50	30%	70%	2 hrs.	70
BNA 016	Cargo Handling, Stowage & Seamanship -I	50	30%	70%	2 hrs.	70
BNA 017	English & Human Factors	40	Nil	100%	2 hrs.	100
BNAL-011	Applied Sciences Laboratory	50	70%	30%	2 hrs.	30
BNAL-012	Computer Laboratory	50	70%	30%	2 hrs.	30
BNAL-013	Workshop Practices	50	70%	30%	2 hrs.	30
Semester II						
BNA 021	Navigation-III: Navigation and Chart Work	60 (70 up to Aug-06 Entry)	30%	70%	3 hrs.	70
BNA 022	Navigation-IV: Advanced Bridge Equipment, Watch Keeping, Meteorology & Oceanography	50	30%	70%	2 hrs.	70
BNA 023	Cargo Handling, Stowage & Seamanship-II	50	30%	70%	2 hrs.	70
BNA 024	Ship Operations	50	30%	70%	2 hrs.	70
BNA 025	Maritime History and Commerce	40	Nil	100%	2 hrs.	100
BNAL-021	Computer Applications Laboratory	50	70%	30%	2 hrs.	30
BNAL-022	Workshop Practices and Seamanship Laboratory	50	70%	30%	2 hrs.	30
BNAP-021	Project	50	50% (Report Work)	50% (Viva)	2 hrs.	30

Table 8.2: Evaluation Scheme for B.Sc. (Nautical Science) Semesters III, IV, V & VI

Semester	Course Code	Subject	Duration of TEE	Credits	Term-end exam (Whether Theory or Practical)	Maximum Marks		Passing Marks
						Term End Evaluation (Through Term-end exam/ External Practical Exam)	Continuous Evaluation (Through assignment)	(In Term End Evaluation & Continuous Evaluation Assessment separately)
III rd Semester	BNA 031	Ship Safety & Security	3 hours	4	Theory	70	30	50 %
	BNAL 031	Practical Navigation-I		4	Practical	30	70	50%
	BNAL 032	Practical Cargo Handling, Stowage & Seamanship-I		4	Practical	30	70	50%
	BNAL 033	Practical Ship Operation I		4	Practical	30	70	50%
	BNAL 034	Practical Bridge Watch keeping - I		2	Practical		100	70%
IV th Semester	BNA 041	Navigational Aids & Environmental Protection	3 hours	4	Theory	70	30	50 %
	BNAL 041	Practical Navigation-II		4	Practical	30	70	50%
	BNAL 042	Practical Cargo Handling, Stowage & Seamanship II		4	Practical	30	70	50%
	BNAL 043	Practical Ship Operation -II		4	Practical	30	70	50%
	BNAL 044	Practical Bridge Watch keeping - II		2			100	70%
V th Semester	BNA 051	Ship Manoeuvring & Future Issues	3 hours	4	Theory	70	30	50 %
	BNAL 051	Practical Navigation- III		4	Practical	30	70	50%
	BNAL 052	Practical Cargo Handling, Stowage & Seamanship - III		4	Practical	30	70	50%
	BNAL 053	Practical Ship Operation- III		4	Practical	30	70	50%
	BNAL 054	Practical Bridge Watch keeping - III		2	Practical		100	70%
Total Credits in III rd , IV th and V th Semesters				54				
VI th Semester	20 credits will be taken care of by DG Shipping and will be transferred to IGNOU							

The Term End Practical examination for IIIrd, IVth and Vth Semesters will be conducted along with examination of VIth Semester by the Directorate General of Shipping.

9. ONLINE INFORMATION

IGNOU Website

Keep visiting our website www.ignou.ac.in regularly for information related to the academic programmes on offer, various Schools/Divisions/Cells of the University, objectives and goals of the University, Date Sheet of the TEE, Online Registration for Examination, Assignments, Re-evaluation of answer scripts, University rules and regulations and their updates, Schedule of Gyan Darshan etc. In order to get the latest information about our Regional Centres and Study Centres, please go to the link Regional Services Division. The site also gives you School-wise list of academics and officers dealing with distribution of study materials and student support services. The News section on the website gives latest update on the happening at the University. University publications like the Newsletter, University Profile and Open Channel are also available on the site.

On-line Filling of Term-End Examination Form

Step 1 : Access IGNOU website www.ignou.ac.in

Step 2 : Click 'Online Examination Form' on the Home Page. "**Guidelines and Instructions For Submission of On-Line Examination Form**" will appear on the screen.

Step 3 : Follow the instructions and fill in the form by taking the cursor to the relevant box(es) and clicking it.

Step 4 : Take a printout of Examination Form/ Fee Challan.

Step 5 : Click 'Submit' to submit the Examination Form. It will automatically display a Control Number which you must quote for future reference/query.

Step 6: Pay the examination fee as directed

The instructions while filling online examination may be similar to as follows:

- i) Students are required to pay examination fee @Rs.50/- per course if the student is appearing for the first time or failed earlier examinations for theory as well as practical. A late fee of Rs.100/- from 1st April to 20th April also needs to be included if submitted during this period. Payment can be made through Credit Card, Cash deposit at any branch of AXIS Bank (UTI Bank) or through Demand Draft. Please choose the suitable option for payment.
- ii) No Examination Fee is required to be paid for the courses, where results of just preceding Term-end examination are awaited on the date of submission of examination form. Results of just preceding Term-end examination are available on University website www.ignou.ac.in Please see result status before filling examination form. Click here to see the result status of Just Preceding Examination
- iii) Select and enter Programme code and Examination Centre Code from the options available. If the centre opted by the student is not activated as examination centre or not allotted for any other reason, alternative examination centre will be allotted.
- iv) Select courses carefully. Courses for theory as well as practical needs to be selected separately from the list appearing on the screen. No Term End Examination fee is required to be paid for courses which do not appear in the Term End Examination Date Sheet and accordingly these should not be filled up in the examination form..
- v) If you wish to submit on-line form and make payment through Credit Card, please note the auto generated Control No. for reference.
- vi) In case, you wish to submit on-line form and deposit payment by cash deposit at any of the AXIS (UTI) branches, please fill on-line examination form and submit after selecting this option. You are required to take printout of challan automatically generated and deposit required amount at AXIS Bank along with the challan. You need not send anything by post

OR

In case, you wish to submit on-line form and make payment through a bank draft, please select this option. Please keep the bank draft particulars ready with you before starting to fill the form and enter same at the appropriate place and submit. Students can purchase Demand Draft from any branch of AXIS Bank (UTI Bank) without any commission charge. Please keep note of computer generated control number for your reference for any correspondence. You are required to send demand draft to Registrar, SRE Division, Block-12, IGNOU, Maidan Garhi, New Delhi-110 068 by Registered Post or Speed Post. You must mention your Enrol. No., Programme Name, and Computer generated control No. on the back side of the Demand Draft. Demand Draft is to be drawn in favour of IGNOU and payable at New Delhi only.

- vii) You will receive an acknowledgement with control number at the E.mail address given in the application form.
- viii) You may visit SEARCH OPTION after 24 hours of submission of your form (leaving the day of submission except Saturday & Sunday) to see the details of particulars submitted by you. In case you find the particulars are not available, you may submit the form again.
- ix) University issues hall-ticket to the students two weeks before commencement of Term-end Examination and also uploads the information on the University website. If you do not receive hall-ticket one week before commencement of examination, please download the hall-ticket from the website and report to the Examination Centre with your Identify Card issued by the University
- x) Students will be allowed to appear in Term-end Examination for those courses only whose registration is valid and have completed the prescribed minimum duration of study.

[Click here to Fill Online Examination Form](#)

- xi) If for any reason before submitting the online examination form you forgot to take a printout of the Challan, you shall go to printout of challan as given in item vi) above and take the print out by providing programme code and Enrollment number. Similarly, after submitting your online examination form, in case you do not get any response further, you can click the SEARCH OPTION as given in item viii) or printout of challan as given in item vi) above to get the necessary details.

Note: The details regarding online filling of examination form given above are subject to change without notice. For the latest details please visit website of IGNOU.

10. PROGRAMME STRUCTURE (COURSE DETAILS)

FIRST SEMESTER

BNA- 011: Applied Mathematics

Course Details : (2 Credits, 3 Blocks, 9 Units)

Block 1 : Algebra & Probability

Unit 1 : Algebra

Unit 2 : Vectors

Unit 3 : Statistics and Probability

Block 2 : Solid Geometry

Unit 4 : Co-ordinate Geometry

Unit 5 : 3-Dimensional Geometry

Unit 6 : Spherical Trigonometry

Block 3 : Calculus

Unit 7 : Differential Calculus

Unit 8 : Integrated Calculus

Unit 9 : Differential Equations

BNA-012: Applied Science

Course Details : (2 Credits, 2 Blocks, 8 Units)

Block 1 : Physics

Unit 1 : Mechanics

Unit 2 : Heat

Unit 3 : Oscillations

Unit 4 : Sound

Unit 5 : Light

Block 2 : Chemistry

Unit 6 : Physical Chemistry

Unit 7 : Inorganic Chemistry

Unit 8 : Organic Chemistry

BNA-013: Applied Electricity and Electronics

Course Details : (2 Credits, 2 Blocks, 7 Units)

Block 1 : Electricity

Unit 1 : Current and Static Electricity

Unit 2 : Current Electricity and its Effects

Unit 3 : Measurement of Electrical Quantities

Block 2 : Electronics

Unit 4 : Basic Electronics

Unit 5 : Transistors

Unit 6: Transmitters

Unit 7 : Radar

BNA-014: Navigation-I: Terrestrial & Celestial

Course Details : (2 Credits, 3 Blocks, 12 Units)

Block 1 : Terrestrial Navigation

Unit 1 : Earth

Unit 2 : Parallel and Plane Sailings

Unit 3 : Mercator Sailing

Unit 4 : Dead Reckoning and Days Work

Block 2 : Celestial Navigation

Unit 5 : Concepts of Time and Nautical Almanac

Unit 6 : Celestial Sphere and Equinoctial System of Coordinates

Unit 7 : Daily Motion and Horizon System of Coordinates

Unit 8 : Sextant and Altitude Correction

Unit 9 : Amplitude & Azimuth

Block 3 : Practical Navigation

Unit 10 : Chart Work

Unit 11 : Position Lines and Positions

Unit 12 : Chart Work Exercises

BNA- 015: Navigation-II: Bridge Equipment, Watch Keeping, Meteorology & Oceanography

Course Details : (2 Credits, 2 Blocks, 6 Units)

Block 1 : Bridge Equipment and Watch Keeping and Collision Prevention

Unit 1 : Navigational Aids

Unit 2 : Collision Prevention

Unit 3 : Lights Shapes and Sound Signals

Block 2 : Meteorology and Oceanography

Unit 4: Meteorology

Unit 5 : Physical Properties of Sea Water

Unit 6 : The Energy Budget of the Oceans

BNA-016: Cargo Handling, Stowage and Seamanship-I

Course Details : (2 Credits, 3 Blocks, 13 Units)

Block 1 : Cargo Handling and Stowage

Unit 1 : Categories of Cargo and Types of Ships

Unit 2 : Principles of Cargo Work and Port Watch Keeping

Unit 3 : Loading of Cargo and Cargo Regulations

Unit 4 : Care of Cargo Onboard Ship and Documentation

Block 2 : Seamanship and Deck Work

Unit 5 : Rope Work

Unit 6 : Blocks Purchases and Lifting Appliances

Unit 7 : Corrosion Sign and its Prevention

Unit 8 : Safe Working Practice

Block 3 : Ship Operations

Unit 9 : Ship Construction-I

Unit 10 : Ship Construction-II

Unit 11 : Displacement

Unit 12 : Buoyancy

Unit 13: Statical Stability

BNA-017: English & Human Factors

Course Details : (Qualifying Paper, 1 Block, 11 Units)

Block 1 : English & Human Factors

Unit 1 : English Language and Marine Communication

Unit 2 : Shipping and Special Needs

Unit 3 : Human Factors and Interpersonal Relationship

Unit 4 : Team Work and Positive Attitude

Unit 5 : Organizational Behaviour

BNAL-011: Applied Sciences laboratory

Course Details : (2 Credits, 1 Block)

➤ **Chemistry Lab Manual**

Determination of Melting point and Boiling Point of Given Substance –

- Determination of hardness of water.
- Volumetric titration
- Determination of pH of the solution using pH meter.
- Fuel Test to determine Viscosity, Density, Water Content, Carbon residue, etc
- Cooling water test for BOD, Chloride content, etc.
- Determination of the dosage of bleaching powder required for sterilization or disinfections of different samples of water.
- Preparation of acetylene and study of its acidic character.
- Effect of metal coupling on rusting of iron.
- Flash point test – open cup and closed cup.
- Corrosion inhibitor test
- Desalination of saline water

➤ **Physics Lab Manual**

- Use of Vernier Callipers, Screw Gauge, etc., to measure fundamental quantities
- To determine the moment of inertia of a flywheel about its own axis of rotation
- To determine the sp. Heat of a liquid by the method of cooling
- Determination of moisture content of different cargoes
- Determination of angle of repose of different cargoes
- Determination of velocity of sound in water using echo-sounder
- Usage of velocity of sound in water for Doppler effect and determination of speed in water
- Measurement of rate of flow of a liquid through a pipe using VENTURIMETER
- Determination of surface tension of liquid by capillary rise method
- Determination of coefficient of viscosity of a liquid by Stoke's method
- Determination of magnetic elements
- Determination of height of a distant object using Sextant
- Determination of focal length of a combination of two convergent lenses separated by a distance

➤ **Electronics Lab Manual**

BNAL-012: Computer Laboratory

Course Details : (2 Credits, 1Block)

- Basic Hardware Familiarisation
- MS-Word Main Features
- MS-Excel
- Use of Other Windows Applications

BNAL-013: Workshop Practices

Course Details : (2 Credits, 2 Blocks, 8 Units)

Block 1 : Hydraulic and Pneumatics

Unit 1 : Hydraulics

Unit 2 : Pneumatics

Unit 3 : Application to Ship

Block 2 : Other Workshops

Unit 4 : Fitting Workshop

Unit 5 : Welding Shop

Unit 6 : Electrical Shop

Unit 7: Plumbing Shop

Unit 8 : Carpentry Shop

Note: The syllabus for the Semester-I and Semester-II has undergone changes. The Training Institute shall provide you with the latest revised syllabus.

SECOND SEMESTER

BNA-021: Navigation-III : Navigation and Chart Work

Course Details : (2 Credits, 2 Blocks, 6 Units)

Block 1 : Navigation

Unit 1 : Solar System

Unit 2 : Time

Unit 3 : Position Fixing

Block 2 : Chart Work

Unit 4 : Voyage Planning

Unit 5 : ECDIS

Unit 6 : TIDES

BNA-022: Navigation-IV: Advanced Bridge Equipment, Watch Keeping, Meteorology & Oceanography

Course Details : (2 Credits, 2 Blocks, 9 Units)

Block 1 : Bridge Equipment and Watch Keeping

Unit 1 : Bridge Equipment and Navigational Aids

Unit 2 : Bridge Team Work and Management

Unit 3 : Watch Keeping Principles and Duties

Unit 4 : Collision, Safe Speed and Remedies

Unit 5 : Narrow Channels and Traffic Separation Schemes

Block 2 : Environmental Science-II

Unit 6 : Condensation and Precipitation

Unit 7 : Tropical Storms

Unit 8 : Weather Reporting

Unit 9 : Oceanography

BNA-023: Cargo Handling, Stowage and Seamanship-II

Course Details : (2 Credits, 2 Blocks, 8 Units)

Block 1 : Cargo Handling and Care

Unit 1 : Cargo Pumps and Piping Systems

Unit 2 : Gas and Chemical Tankers

Unit 3 : Containerized Cargoes

Unit 4 : Special Bulk Cargoes

Unit 5 : Multipurpose Ships

Block 2: More Seamanship and Deck Work

Unit 6: Tackles and Purchases

Unit 7 : Anchors and Anchor Work

Unit 8 : Safe Working Practices

BNA-024: Ship Operations

Course Details : (4 Credits, 4 Blocks, 17 Units)

Block 1 : Ship Construction and Stability

Unit 1 : Hull Structures and Ship Plans

Unit 2 : Ship Stresses

Unit 3 : Fittings

Unit 4 : Statical Stability

Unit 5 : List and Trim

Unit 6 : Rudders and Propellers

Block 2 : Environmental Protection

Unit 7 : Marpol 73/78

Unit 8 : SAR and Emergency Drills

Unit 9 : Maritime Law

Block 3 : Basic Marine Engineering and Drawing

Unit 10 : Engine Room Layout

Unit 11 : Electrical and other Equipment

Unit 12 : Propeller and Bow Thruster

Unit 13 : Maintenance and Machine Drawing

Block 4 : Communication Skills

Unit 14 : Signalling by Morse Code

Unit 15 : International Code of Signals

Unit 16 : Global Maritime Distress and Safety System

Unit 17 : Concepts of GMDSS

BNA-025: Maritime History & Commerce

Course Details : (Qualifying Paper, 1 Block, 2 Units)

Block 1 : Maritime History & Commerce

Unit 1 : Maritime History

Unit 2 : Maritime Commerce

BNAL-021: Computer Applications Laboratory

Course Details : (2 Credits, 1 Block, 4 Units)

Block 1 : Computer Application

Unit 1 : DBMS

Unit 2 : Networks

Unit 3 : Advanced Word Processing Section

Unit 4 : Ship Board Application

BNAL-022: Workshop Practices and Seamanship laboratory

Course Details : (4 Credits, 3 Blocks, 10 Units)

Block 1 : Diesel Maintenance Shop

Unit 1 : Demonstration of Use of Tools

Unit 2 : Dismantling and Assembling Engine

Unit 3 : Opening of Heat Exchanger, Cleaning, Repair and Plug Tubes

Unit 4 : Dismantling and Assembling of Different Auxiliaries

Block 2 : Seamanship

Unit 5 : Whippings and Splices

Unit 6 : Throwing Heaving Lines Rope and Chain Stoppers
(Bosun's Chair and Staging)

Unit 7 : Types of Paints and Painting Procedures

Block 3 : Welding

Unit 8 : Welding Equipment

Unit 9 : Different Types of Welding Techniques

Unit 10 : Safety Measures

BNAP-021: Project

Course Details : (2 Credits)

Note: The syllabus for the Semester-I and Semester-II has undergone changes. The Training Institute shall provide you with the latest revised syllabus.

THIRD SEMESTER

BNA-031: Ship Safety & Security

Course Details : (4 Credits, 2 Blocks, 11 Units)

Block 1 : Watch Keeping & Procedures

Unit 1 : Masters Standing Orders

Unit 2 : Bridge Procedures

Unit 3 : Weather Routing

Unit 4 : Navigation, Safe Practices

Block 2 : Safety and Security

Unit 5 : Risk Analysis

Unit 6 : ISPS-I

Unit 7 : ISPS-II

Unit 8 : ISPS-III

Unit 9 : Safety General

Unit 10 : Safety Deck Operation

Unit 11 : Safety Miscellaneous Operations

BNAL - 031: Practical Navigation-I

BNAL - 032: Practical Cargo Handling, Stowage & Seamanship-I

BNAL- 033: Practical Ship Operations-I

BNAL- 034: Practical Bridge Watch Keeping-I

FOURTH SEMESTER

BNA-041: Navigational Aids and Environmental Protection

Course Details : (4 Credits, 3 Blocks, 13 Units)

Block 1 : Navigational System and Equipment

Unit 1 : Automatic Identification System

Unit 2 : Speed Measurement at Ship

Unit 3 : Radar for Navigation

Unit 4 : Navigation by ARPA

Unit 5 : Electronic Aids

Block 2 : Environmental Protection

Unit 6 : Paint Technology

Unit 7 : Anti Fouling Paints

Unit 8 : Pure Car Carrier

Unit 9 : Container Handling - I

Unit 10 : Container Handling - II

Block 3 : Emergencies & Safety

Unit 11 : Search & Rescue

Unit 12 : Ship Reporting System

Unit 13 : Contingency Planning

BNAL - 041: Practical Navigation-II

BNAL - 042: Practical Cargo Handling, Stowage & Seamanship-II

BNAL- 043: Practical Ship Operations-II

BNAL- 044: Practical Bridge Watch Keeping-II

FIFTH SEMESTER

BNA-051: Ship Manoeuvring & Future Issue

Course Details : (4 Credits, 3 Blocks, 13 Units)

Block 1 : Manoeuvring

Unit 1 : Ship Manoeuvring, Ship Propulsion and Control

Unit 2 : Ship Hydrodynamics and Hull Design

Unit 3 : Manoeuvring in Shallow Water

Unit 4 : Tugs and Towing

Block 2 : Marine Insurance

Unit 5 : Marine Insurances

Unit 6 : Vetting Inspection

Block 3 : Future Issues

Unit 7 : Ballast Water and Sediment Management

Unit 8 : Marpol Annexure IV

Unit 9 : Marpol Annexure VI - Part – A: Prevention of Air Pollution

Unit 10 : Marpol Annexure VI - Part – B: Regulation for The Prevention of Air Pollution From Ships

Unit 11 : Fuel Conservation

Unit 12 : Double Hull

Unit 13 : Places of Refuge

Unit 14 : Green Passport

BNAL - 031: Practical Navigation-III

BNAL - 032: Practical Cargo Handling, Stowage & Seamanship-III

BNAL- 033: Practical Ship Operations-III

BNAL- 034: Practical Bridge Watch Keeping-III

SIXTH SEMESTER

The syllabus for the Sixth Semester is available from the Directorate General of Shipping. A summary of the same is briefly given in Table 4.7.

11. SOME USEFUL PROFORMA

Following are the Proforma that may be useful to the candidates:

PROFORMA-I	:	Student Services Centre
PROFORMA-II	:	Sample of Change/Correction of Address
PROFORMA-III	:	Requisition for Fresh set of Assignment
PROFORMA-IV	:	Term-End-Examination Form
PROFORMA-V	:	Sample of Card for Non-receipt of Materials

PROFORMA - I

Indira Gandhi National Open University**STUDENT SERVICES CENTRE**

C. No. _____

Date : _____

Name of the Student : _____

Programme : _____ Enrolment No. : _____ Semester/Year : _____

ISSUES/GRIEVANCES (Please put tick mark)**MPDD**

- (1) _____ Non-receipt of study material/assignment.
- (2) _____ Remaining study material.
- (3) _____ Change of block(s).

SCHOOL OF STUDIES (.....)

- (1) _____ Synopsis approval.
- (2) _____ Submission of project.
- (3) _____ Academic matters.

RSD

- (1) _____ Enquiry pertaining of study centre/regional centre.
- (2) _____ Change of regional centre/study centre.
- (3) _____

Referred to :**Dealing Assistant**

PROFORMA - II

Indira Gandhi National Open University SAMPLE FOR CHANGE/CORRECTION OF ADDRESS

(Available at Your Study Centre)

CHANGE/CORRECTION OF RESIDENTIAL ADDRESS AND STUDY CENTRE

If you change your address, please
complete the attached card, using
BLOCK CAPITALS and indicating :

Programme of Study :

Enrolment No. :

Name :

New or Corrected Address including
PIN Code :

Date of Change :

The card should be signed, dated and
posted at the address printed overleaf.

CHANGE/CORRECTION OF RESIDENTIAL ADDRESS AND STUDY CENTRE

All correspondence to me, please be sent at the following address and the
change of Study Centre kindly be recorded:

Enrolment No. : _____ Date change effective from _____

Dr./Shri/Smt./.... Name : _____

Address : _____

Town/State _____ PIN _____

Programme of Study _____

New Study Centre Code _____

Signature : _____ Date ; _____

Note :

- (1) For change/correction of address please send it to the concerned Regional Director.
- (2) For change of study centre, please send it to Regional Director of the concerned Regional Centre.

Note: For the B.Sc. (Nautical Science) Programme, the following shall apply:

1. In case of students of B.Sc. (Nautical Science) programme, the request is to be sent to the Project Coordinator, IGNOU-DGS Project, School of Engineering and Technology, Indira Gandhi National Open University, Maidan Garhi, New Delhi – 110068.)
2. Change of Study Centre/Training Institute is not permitted for the B.Sc. (Nautical Science) Programme.

PROFORMA - III

Indira Gandhi National Open University

REQUISITION FOR FRESH SET OF ASSIGNMENTS

Programme of Study :

Enrolment No. :

Study Centre Code :

NAME : Shri/Smt./Km. _____
(Write in BLOCK CAPITAL LETTERS only).

Please indicate course code, assignment code and course title for which you need the assignments in the following columns. The assignments of the Course which you have already passed should not be mentioned.

Sl. No.	Course Code	Assignment Code	Course Title
1			
2			
3			
4			

REASONS FOR REQUEST FOR FRESH SET OF ASSIGNMENTS

(Tick (✓) whichever is applicable)

- (1) Assignments not received at all earlier.
- (2) Assignments were received after the due dates prescribed for their submission.
- (3) Assignments submitted but could not secure minimum qualifying score.
- (4) Assignments submitted earlier but misplaced at Study Centre/Post/HQ.
- (5) Assignments responses submitted after due dates were rejected by the Study Centre.
- (6) Failed to secure over-all qualifying grade in course(s) mentioned above and wish to improve over-all qualifying grade only by attempting one assignment.

Complete Address : _____ Signature: _____
_____ Date: _____

Pin: _____

For Office Use Only

Date of Despatch of Assignments to the student _____ Initials : _____

Please mail this form to :

The Registrar (MPDD)
Indira Gandhi National Open University
Maidan Garhi, New Delhi – 110 068

Note: The Assignments for the B.Sc. (Nautical Science) programme are made available to candidates through the Training Institutes.



INDIRA GANDHI NATIONAL OPEN UNIVERSITY

STUDENT REGISTRATION & EVALUATION DIVISION

MAIDAN GARHI, NEW DELHI-110 068

TERM-END EXAM JUNE DECEMBER - 200

EXAM FORM

Form Number

INSTRUCTIONS

Use BLACK BALL POINT PEN in boxes using English capital letters or English numerals.

Do not staple. Only Clip the documents along with it.

Write in CAPITAL LETTERS only within the box without touching the lines as shown in the Sample below.

0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Programme Code		Study Centre Code	
Enrolment No.		Exam Centre Code (Where you wish to appear in Exam)	
Name of the Candidate (Leave one box empty between First Name, Middle Name and Surname)			
Address for Correspondence (Do not give Post Box No. address. Leave a blank box between each unit of address like house No. Street Name, P.O. etc.)			
City		District	
State		Pin Code	

COURSE OPTION:

Course codes for which appearing for the First time OR failed in the earlier TEEs

Fee @ Rs. 50/- PER COURSE

Course Code (Exam already taken in last TEE but result awaited on the date of submission of the exam form) (For result please visit IGNOU site www.ignou.ac.in NO EXAM FEE TO BE PAID)

S.No.	Course Code	S.No.	Course Code	S.No.	Course Code
1.		9.		1.	
2.		10.		2.	
3.		11.		3.	
4.		12.		4.	
5.		13.		5.	
6.		14.		6.	
7.		15.		7.	
8.		16.		8.	

FEE DETAILS (Please write your Name & Enrolment No. at the back of the Draft)

Total No. of		Total Amt.		Draft No.	
Courses	X 50			Amount	
Practical Courses	X 50			Date	/ /
Late Fee				Issuing Branch	
TOTAL				Payable at	N E W D E L H I

ISSUING BANK

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

SIGNATURE OF THE STUDENT
(within the Box only)

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Control No.
(For Official use Only)

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DECLARATION

I hereby affirm that I have submitted/will submit all the required number of assignments as applicable for the above course(s) within the deadlines prescribed by the University to the appropriate authority for evaluation. I also affirm that my registration for the above course(s) is valid and not time barred. If any of my above statements are found to be untrue, I will have no claim for taking examination. I undertake that I shall abide by the rules and regulations of the University.

Date: _____

(Signature of the Student)

Dated for Submission of Exam Forms

FOR JUNE TEE	LATE FEE	FOR DEC TEE	LATE FEE
1 March to 31 March	NIL	1 Sept to 30 Sept.	NIL
1 April to 20 April	Rs. 100/-	1 Oct to 20 Oct.	Rs. 100/-
21 April to 15 May*	Rs. 500/-	21 Oct to 15 Nov*	Rs. 500/-
16 May to 28 May*	Rs. 1000/-	16 Nov to 28 Nov*	Rs. 1000/-

* During these dates submit the examination form with late fee to concerned Regional Centre (For outside Delhi); For Delhi, submit to the Registrar (SRE),
Exam for these students will be conducted at Regional Centre city only.

Please submit the examination form up to 20th April / 20th Oct at the address mentioned below and no where else by Regd. Post / Speed Post

THE REGISTRAR (SRE)
INDIRA GANDHI NATIONAL OPEN UNIVERSITY,
BLOCK-12, MAIDAN GARHI,
NEW DELHI - 110068

INSTRUCTIONS FOR FILLING UP THE EXAM FORM

1. Please send the examination form by Registered Post/Speed post and retain the proof of its mailing till you receive the Hall Ticket.
2. Students should submit the examination form only once for each Term-end Examination.
3. Examination fee @ Rs. 50/- per course in the form of demand draft drawn in favour of IGNOU and payable at New Delhi is required to be sent along with the Examination Form.
4. It is advisable that students fill-up the examination form without waiting for the result of the previous examination. No Examination fee is required to be paid for the courses for which the student appeared in the preceding TEE and the result has not been declared on the date of submission of the Examination form.
5. Term-end Examination result is also available on the university website i.e., www.ignou.ac.in. Please see the result status before filling examination form.
6. If you fail to receive Examination Intimation Slip one week before commencement of examination, you may visit our website www.ignou.ac.in and download Hall Ticket and report to Examination Centre with your Identity Card.
7. Normally the Study Centre is the Examination Centre. In case you wish to take examination at a particular centre, the code of your chosen centre be filled up as Examination Centre Code. However, if Examination Centre chosen by you is not activated, you will be allotted another Examination Centre under the same Region.
8. Change of Examination Centre, once allotted, is not permissible under any circumstances.
9. Please write correct course code(s) as indicated in your Programme Guide, failing which the course(s) will not be included in Hall Ticket for taking examination. (For example ECO-01/MS-02.)
10. In case wrong/invalid course code is mentioned in examination form, the course will not be included in the Hall Ticket and the examination fee paid will not be refunded.

PROFORMA - V

Indira Gandhi National Open University
SAMPLE OF CARD FOR NON-RECEIPT OF MATERIALS

(Available at Your Study Centre)

Intimation of Non-receipt of Study Material/Assignment

Enrolment No. _____ Programme : _____

Sir,

I have not received the Study Material/Assignment in respect of the following :

Sl. No.	Course Code	Course Topic(s)	Block No.
1			
2			
3			
4			

Assignment No. : _____

I have remitted all the dues towards Course Fee and there is NO CHANGE in my address given on the reverse. Kindly make arrangements for the despatch of the same at your earliest.

Yours faithfully

Date : _____

Signature: _____

From:

Name : _____

Enrolment No. _____

Programme Code. _____

Address : _____

PIN : _____

To

Registrar,
Material Production and Distribution Division (MPDD)
Indira Gandhi National Open University
Maidan Garhi, New Delhi – 110 068