Republika ng Pilipinas
(Republic of the Philippines)
MINISTRI NG EDUKASYON, KULTURA AT ISPORTS
(MINISTRY OF EDUCATION, CULTURE AND SPORTS)
Maynila

December 17, 1985

MECS O R D E R
No. 77, s. 1985

POLICIES AND STANDARDS FOR GENERAL RADIO COMMUNICATION OPERATOR COURSE

To: Bureau Directors
Regional Directors
Presidents, State Colleges and Universities
Vocational School Superintendents/Administrators
Heads of Private Schools, Colleges and Universities

1. The inclosed policies and standards approved by this Office upon the recommendation of the National Telecommunications Commission (NTC), Philippine Association of Private Technical Institutions (PAPTI), Bureau of Higher Education (BHE), and deans and administrators of vocational-technical schools, embody the general principles and guidelines for the establishment and operation of General Radio Communication Operator Course in the country. The standards have been developed after a series of consultative meetings participated in by school heads/representatives of educational institutions offering the General Radio Communication Operator Course.

2. All schools offering General Radio Communication Operator Course are required to prepare and make the necessary adjustments of their programs and facilities based on the inclosed policies and standards.

3. This Order supersedes all existing policies and standards related to General Radio Communication Operator Course and will take effect beginning school year 1986-1987.

4. Compliance with these policies and standards by all concerned is requested.

5. Wide dissemination of the contents of this Order is desired of all higher education institutions.

(SGD.) JAIME C. LAYA
Minister

Incl.:
As stated

Reference: Department Order: No. 23, s. 1976

Allotment: 1--(D.O. 1-76)

To be indicated in the Perpetual Index under the following subjects:

BUREAUS & OFFICES
CHANGE
COMMUNICATION ARTS
CURRICULUM
POLICY
SCHOOLS
SOCIETY or ASSOCIATIONS
VOCATIONAL EDUCATION

2. Utilization of faculty members -

2.1 A full-time faculty member shall be assigned to plan, supervise and evaluate student curricular activities;

2.2 Part-time faculty members may be utilized in cases of unanticipated increase of student population; and

2.3 When vacancies occur in the teaching force during the school year, substitute instructors with equivalent or higher qualifications shall be employed.

3. The following conditions of faculty employment shall be observed:

3.1 The salaries and allowance of the faculty members shall be paid on time;

3.2 A full-time faculty member shall be considered permanent only after he has served the three-year probational period; and

3.3 At least 60% of the subjects shall be taught by full-time instructors, except in highly specialized subjects.

4. Ranking of the instructors shall be rated under the following:

a. Educational qualification and training;
b. Teaching performance;
c. Teaching experience;
d. Personality;
e. Moral character

5. Faculty Development Program. - The school shall provide in-service training programs for faculty members on official time.

E. Curriculum

1. The General Radio Communication Operator Course is a two-year post-secondary technical course jointly supervised by the Ministry of Education, Culture and Sports (MECS) and the Ministry of Transportation and Communication (MOTC). The National Telecommunications Commission is the implementing agency of the MOTC.

2. The curriculum for the course shall reflect the aforementioned philosophy and aims. It shall be flexible and may be revised to suit the manpower requirement of the maritime industry. However, any revision shall be subject to the approval of the MECS in collaboration with the NTC.

CURRICULUM FOR THE TWO-YEAR GENERAL RADIO COMMUNICATION OPERATOR COURSE

FIRST YEAR
First Semester

Subjects	Lec.	Lab.	Total Number of Hours
Fundamentals of Electricity	3	6	9
Communication Skills	3	0	3
Mathematics for Electronics	3	0	3

Typing	0	2	2
Basic Radio Communications	1	3	4
Basic Test Instruments	0	3	3
Current Issues (Phil. Constitution, Taxation & Land Reform, Family Planning & Drug Addiction)	3	0	3
P.E.	0	1	1
ROTC/CMT	0	0	(1.5)
Total Number of Hours/Week	13	15	28

Second Semester

Fundamentals of Electronics	3	6	9
Technical English	3	0	3
Antenna Fundamentals	1	2	3
Radio Laws & Regulations	3	0	3
Advanced Radio Communications	0	4	4
Advanced Test Equipment	0	2	2
ROTC/CMT	0	0	(1.5)
Total Number of Hours/Week	10	14	24

SECOND YEAR

First Semester

Principles of Radio Communication Transmitter	3	3	6
Principles of Radio Communication Receiver	3	3	6
Telecommunication and Maintenance, Shipping Routes, (Geography & Meteorology)	2	0	2
Radio Communication Practice	0	4	4
Basic Trouble-Shooting Techniques	0	5	5
ROTC/CMT	0	0	(1.5)
Total Number of Hours/Week	8	15	23

Second Semester

Communication Equipment	3	6	9
Radio Navigation	3	3	6
Applied Radio Laws and Regulations ...	2	0	2
Advanced Radio Communication Practice.	0	3	3
Advanced Trouble-Shooting Techniques .	0	3	3
ROTC/CMT	0	0	(1.5)
Total Number of Hours/Week	8	15	23

BRIEF DESCRIPTION OF THE SUBJECTS

Fundamentals of Electricity -Basic principles of direct and alternating currents and their practical applications. 3 hrs. lecture, 6 hrs. laboratory per week.

Communication Skills - Functional training in oral and written communications in English. 3 hrs. lecture per week.

Mathematics for Electronics - Mathematics applied to the principles of electronics and their applications. 3 hrs. lecture per week.

Typewriting - Development of typewriting skills to enable the operator to receive Morse Code with the use of typewriter, and development of skill in the operating procedure of Maritime Satellite Telex Communication. 2 hrs. laboratory per week.

Basic Radio Communications - Basic knowledge of transmission and reception of messages in radio telephony and radio telegraphy. 1 hr. lecture, 3 hrs. laboratory per week.

Basic Test Instruments - Basic skills in the use of radio test instruments. 3 hrs. laboratory per week.

Fundamentals of Electronics - Basic principles and operation of electronic devices and their application. 5 hrs. lecture, 6 hrs. laboratory per week.

Technical English - Understanding technical terms, preparation of technical correspondence and reports, with Rizal's Works integrated. 3 hrs. lecture per week.

Antenna Fundamentals - Basic principles of the antenna, its use and installation. 1 hr. lecture, 2 hrs. laboratory per week.

Radio Laws and Regulations - Local and international radio laws and regulations. 3 hrs. lecture per week.

Advanced Radio Communications - Development of proficiency in transmission and reception of messages through radio station practice and knowledge of handling and settling maritime radio accounts. 4 hrs. laboratory per week.

Advanced Test Equipment - Development of advanced skill in the use of test and measuring equipment. 3 hrs. laboratory per week.

Principles of Radio Communication Transmitters - Stage by stage comprehensive study of basic transmitters for communications. 3 hrs. lecture, 3 hrs. laboratory per week.

Principles of Radio Communications Receivers - Basic circuits and operation of communications receivers. 3 hrs. lecture, 3 hrs. laboratory per week.

Telecommunication Centers - Shipping Routes, Geography and Meteorology. Familiarization in the principal ports of call, telecommunication centers and coast stations and to acquaint the students with effects of weather in maritime radio communications. 2 hrs. lecture per week.

Radio Communication Practice - Actual practice in the installation, operation and maintenance of communications receivers and transmitters. 4 hrs. laboratory per week.

Basic Trouble-Shooting Techniques - Basic maintenance of communications equipment and aids to navigation equipment, diagnoses of troubles in the operation of such equipment and their practical applications, 5 hrs. laboratory per week.

Communication Equipment - Familiarization with two-way communications equipment. 3 hrs. lecture, 6 hrs. laboratory per week.

Aids to Navigation - Maritime radio navigational aids, their functions, principles, practical operation, and installation. 3 hrs. lecture, 3 hrs. laboratory per week.

Applied Radio Laws and Regulations - Familiarization with actual applications of both local and foreign radio laws and regulations in the operation of maritime radio stations. 2 hrs. lecture per week.

Advanced Radio Communication Practice - Observations and reports on ship and coastal stations and their installation, maritime radar systems, automatic alarm systems, and further practice on the operation of radio stations to include messag[redacted]ting compilation, classification, etc. 3 hrs. laboratory per week.

Advance[redacted]ouble-Shooting Technique - Actual use of all test and measuring equipment in servicing all types of marine communication equipment and their installation; utilization of field expedients in emergency repairs for shipboard equipment; major repairs of equipment; emergency antenna installation, etc. 3 hrs. laboratory per week.

F. Instructional Standards

1. To maintain a high standard of instruction, a system of supervision of instruction and evaluation of teachers competence shall be formulated and implemented.

2. There shall be a program for a systematic and continuing evaluation of students through a grading system consistent with and congruent to the objectives of the school. The grade or rating of the students shall reflect their knowledge and skills in the subjects based on reasonable rules and standards of the school.

3. The curricular program may adopt any textbook reflecting current trends and methodology and preferably written by Filipino authors.

4. The Director/Dean/Administrator/Department Head shall see to it that the necessary textbooks, instructional materials and laboratory facilities are available to instructors and students.

5. Schools may change textbooks only once every three years.

6. The students shall be required to undergo on-the-job training (OJT) with accredited maritime communications-electronics service centers. (3 hours per week.)

G. Library

1. Every school/department offering the Course shall be backed up a library equipped with basic textbooks and reference materials and managed by a full-time librarian.

2. The library shall consist of up-to-date technical books suitable for the curricular needs of the Course and shall be made available to students.

3. The books relevant to the course shall be at least 45% of the total book collection and subject to the following requirements:

3.1 Every subject area shall be provided with enough books in proportion to the required number of volumes;

3.2 The library resources, in addition to books, shall include a substantial number of technical publications;

3.3 At least 20% of the total book collection shall be of recent edition and published within the last five years; and

3.4 There shall be at least one subscription to a relevant technical magazine or periodical for the Course.

4. There must be adequate reading space for at least [illegible]% of estudent population per session.

5. The open shelf system for the library books shall be encouraged.

H. Laboratory Facilitres

1. The school shall provide adequate laboratory facilities subject to the following conditions:

1.1 Schools offering this course shall be fully equipped with laboratory facilities for the particilar subject. The laboratory space must be adequate to accommodate at least fifty students in a class.

1.2 Laboratory experiments that may cause emission of harmful radio interference shall be conducted in an electromagnetically shielded room.

1.3 Laboratory Rooms -

1.3.1 The laboratory room shall have adequate working space for the convenience of the students.

1.3.2 The rooms shall be well-lighted, well-ventilated and provided with easily accessible safety devices and first-aid facilities.

1.4 Facilities -

1.4.1 The laboratory room shall have a sufficient number of experiment tables equipped with at least one electrical convenience outlet for every two students and an adequate water facility.

1.4.2 There shall be an adequate number of testing and measuring devices, including handtools and suppliers for each laboratory course, based on the number of students.

1.4.3 Laboratory tools, test and measuring equipment shall be maintained at all times.

1.4.4 All laboratory equipment and training accessories shall be made available to students during laboratory periods.

1.4.5 All practicum shall be designed to be undertaken by the students with the proper guidance of the instructors.

List of Equipment

Major Equipment

1 set 4-channel 100-watt SSB/HF transceiver
1 set 2-channel 25-watt FM/VHF transceiver
1 set MF/HF/VHF wideband communications receiver
1 set medium frequency direction finder receiver (RDF)
1 set LORAN receiver*
1 set Radiotelegraph transmitter
1 set Radiotelephone transmitter
1 set RADAR*
1 set Auto-alarm receiver
1 set Survival craft lifeboat transmitter
1 set Emergency position-indicating radio beacon (SPIRB)*
1 set Echo sounders*

Test Equipment and Training

1 set Code Practice Oscillator
1 set Automatic keyer/sender or tape recorder
1 pc. Coast and Geodetic Survey Map of the Philippines
1 pc. World Atlas
1 pc. World Globe

25 pcs. Headsets or one for each student
50 pcs. Hand telegraph keys or one for each student
25 pcs. Soldering iron or one for every 2 students
50 pcs. Long nose pliers or one for each student
50 pcs. side cutting pliers or one for each student
50 pcs. Medium size screw drivers or one for each student
50 pcs. sets of electricians pliers, open end wrenches, and crescent wrench or one set for each student.

10 pcs. Volt-ohm-millimeters or one unit for every 5 students
5 pcs. Electronic voltmeter
2 pcs. Oscilloscopes
2 pcs. Audio frequency (AF) signal generators
2 pcs. Radio frequency (RF) signal generator
1 pc. Resistance/Inductance/Capacitants (RLC) bridge
1 pc. Vacuum tube tester
1 pc. Transistor/semi-conductor tester
1 pc. Field intensity meter or one for every fifty students
1 pc. Grid dip meter or one for every fifty students
1 pc. Frequency meter or one for every fifty students

NOTE: *Optional if school has tie-up with other entities or agencies which have these equipment available for the training of students.

I. Code Room

1. The school shall provide a code room which can accommodate the largest number of students in one class at a time.

2. The code room shall be equipped with the following:

2.1. One code practice oscillator with amplifier suitable for direct hearing or students and suitable for connection with several individual headpoint;

2.2 Headphone outlets installed in the chairs or students or in code tables provided for code practice. The headphones must be connectable to the code practice oscillator.

J. Radio Training Station

1. The school shall provide a radio training station for use in the actual radio operation practice of the students. The radio training station must be installed in accordance with the relevant rules and regulations.

K. Admission Requirements

1. A student who enrols in the General Radio Communication Operator Course should be a high school graduate. He should present Form 138 or a high school certificate.

2. A student has the right to enroll in any school upon compliance with its specific requirements and regulations. Except in the case of academic delinquency and violation of disciplinary regulations, the student is presumed to be qualified for enrollment for the entire period. He is expected to complete his course without prejudice to his right to transfer.

3. As a general rule, only those students properly screened by the department head or a committee on admission shall be admitted in the course.

L. Residence Requirements

1. As a general rule, no student shall be permitted to take any subject until he has satisfactorily passed the prerequisite subjects.

2. If a student obtains a grade of incomplete for noncompliance with some requirements of the course, he should not be given any credit for the subject unless he satisfactorily removes the incomplete grade within one-year from the date it was obtained. The completion grade and the incomplete grades not so removed within one year shall be recorded and submitted immediately to the MECS regional office. No school shall give a final grade of "4" or its equivalent of "conditioned" beginning school year 1986-1987.

M. Effectivity

These rules and standards shall take effect beginning school year 1986-87.

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