



Lifelong
Learning
Programme

COURSE MANUAL

NAVIGATION OPERATIONAL LEVEL

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Read me

- This Course Manual (CM) is a guideline for providing courses coming under the PLATINA Competence Tables and should be made available to all persons involved in this course. The purpose of this manual is to have a useful guideline for all the personnel involved.
- All Course Manuals should be similar in lay-out and set-up.
- Attachments will be referred to in this document.
- The CM should always be available in both hardcopy and digital form in its latest version.
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LIST OF REVISIONS

Indication of change	Location of change	Effective date	Name and Position

DOCUMENT VALIDATION

Course Manual validated by:	Date	Signature

1 INTRODUCTION

This course manual (CM) has been developed under the Leonardo Da Vinci funding programme with the support of various EDINNA members. It is intended as a tool for implementing a harmonised education and training system and meeting the requirements of a new European legal framework soon to be introduced.

The manual is designed to facilitate the delivery of education and training based on the competence standards required by the Standards of Training and Certification for Inland Navigation at operational and management level developed within the PLATINA project.

The objective of this course manual is to provide guidance and support with regard to the preparation, organisation and planning of effective teaching and training. In addition, guidance is given on the selection of appropriate methods of instruction, teaching materials and the evaluation of teaching and learning. The manual is designed to be used in a flexible manner. Inland navigation education, training institutes and their teaching staff can use it to develop, organize and introduce new courses or to enhance, update or supplement existing training material.

The course manual can be used as a part of the quality and assurance system of the education and training institute. As the course manual clearly lists course requirements, it can be used by an education and training institute in any audit by the competent authority.

2 THE COMMON THREAD RUNNING THROUGH LEARNING AND TEACHING IN VOCATIONAL TRAINING

It is obviously necessary to orientate vocational training towards vocational practice. The learners should gain the necessary knowledge and skills to master the processes belonging to the job. The aim of vocational training (VET) is thus to qualify the learners for skilled work. One important aspect here is autonomy in planning, execution and control. To achieve this, autonomy must be replicated in vocational training.

The VET focus on practical work determines the content and ways of learning as well as the types of activities performed and skills required, in line with the psychological structure of learning. It ensures sustainability of learning and is satisfying for the individual learner. It reactivates knowledge by appealing to inactive elements. It is the practical aspect that defines the order of learning, not the structure of the subject.

When selecting a practical teaching situation we need to ensure that it is placed in an operational context. It has to be a situation ensuring a growth of knowledge and practical competence. A specific situation can be seen not only in an operational context but also as a thought process, achieving the aims of vocational training through mental reconstruction.

The structure of any activity reflects the following steps experienced in vocational practice: informing, planning, decision-making, execution, monitoring and evaluation.

Informing

In this step the task to be done is clarified with the person setting it.

Possible questions:

What is the required product, the required outcome?

What does any documentation and illustration need to look like?

Which tools are provided?

Which criteria have to be considered?

...

Planning

In the planning stage, a schedule for completing the task is drawn up, including the necessary knowledge and skills.

Possible questions:

Which information and knowledge are necessary?

Which material is needed?

Which skills are needed?

Which activities need to be performed?

Which procedure makes sense?

Decision-making

After the planning stage a decision on the procedure to be followed needs to be taken. In discussion with the person setting the task (teacher, instructor, trainer), ideas and results from the planning stage are checked and discussed. Are the preparations satisfactory, is there agreement on what needs to be done? If this is not the case, any mistakes detected can be corrected by going back to the planning stage.

Execution

Execution of the agreed procedure follows. An instructor (teacher, trainer,...) can and often should guide the learners, while giving priority to autonomy – i.e. the planning should have provided learners with lots of freedom.

Monitoring

Initial monitoring of the result is done by the learners themselves. They compare the existing status with the required status, checking whether the requirements have been fulfilled. If this is not the case, they can go back to the previous step or even back to the planning stage to look for ways of improving the result.

Evaluating

In this step the learner has the chance to evaluate the result. This is followed by an evaluation by the person setting the task (teacher,...). In the case of an unsatisfactory result it is possible to go back one step. The solution to the task may possibly end with the question: What needs to be improved for the next task?

To promote success, we need to consider certain execution-related principles:

- It is generally advisable to choose situations which learners have either experienced or can be expected to experience.
- It is always preferable to choose a concrete situation without a known outcome, thereby encouraging learners to work actively.
- Furthermore we need to take account of the fact that the biggest growth in competence results from a learner's autonomous monitoring, evaluation, documentation and use of available material.

The described training based on the principle of completing a whole task reflects an approach explicitly allowing learners to learn from their mistakes. Learners are prepared for lifelong learning not only through the large amount of autonomy, but also through the structured process. Similarly, they enhance their social competences through helping each other and learning together.

Courses not supporting this form of vocational training can make success impossible. Possible impediments are wrong working conditions, large groups or missing media and tools.

3 LEGEND

CM	Course Manual
Competent Authority	Authority responsible for the recognized education and training institute under the EDINNA articles of association.
EDINNA	Education in Inland Navigation – Network of education and training institutes
Examiner	A person who evaluates knowledge, reactions or qualifications. He also sets exams in schools, colleges or universities on behalf of an official institution (e. g. a Chamber of Industry and Commerce)
Instructor	A person who instructs in a practical training environment, providing situations in which professional hands-on experience can be gained. The term is often used as a synonym for teacher, the main teaching aims and methods are often quite different.
NAIADES	European Commission funding programme
Operator	A person in a practical training environment or simulator, who operates the training vessel or simulator.
PLATINA	Platform for the implementation of NAIADES
Teacher	A person who teaches in an educational system, providing a learning environment in which knowledge and competencies can be gained. He enables learners to translate their knowledge into real-life-situations and to solve problems based on the acquired knowledge.

4 GENERAL INFORMATION

4.1 Introduction

The purpose of this course manual is to assist education and training institutes in integrating PLATINA-provided competence tables in their curricula.

Its intention is neither to present instructors with a rigid “teaching package” which they are expected to “follow blindly”, nor to substitute the instructor's presence by audio-visual or “programmed” material. As in all training, the knowledge, skills and dedication of instructors are the key components in the transfer of knowledge and skills to those being trained through the training course material.

The training systems and cultural backgrounds of learners vary considerably from country to country. For this reason the course material has been designed to identify the basic entry requirements and trainee target group in universally applicable terms, and to specify clearly the technical content and required levels of knowledge and skill.

4.2 Course objective

This course manual comprises the functions of PLATINA Competence Tables Operational Level 1; Navigation. On successful completion of the training and assessments learners should be in a position to achieve the objectives named in a correct and safe manner.

4.3 Entry level

Entry standards can vary due to applicable legislation and national educational standards. Where need be, reference can be made to acquired diplomas as well as professional experience and proficiency levels.

4.4 Pass criteria

Course goals may be achieved in various ways, for example through classroom training, on-the-job training, distance learning, computer-based-training, simulator training, practical training or combinations thereof.

To pass the course the criteria listed in column 4 must be met: Criteria for evaluating competence of the PLATINA competence tables for navigation OL.

4.5 Required qualifications of teachers, examiners, instructors and operators

Every teacher, instructor, operator and examiner needs to be qualified and experienced in the particular types and levels of training (and examination) they provide with regard to both inland navigation skills and teaching methods.

4.6 Course maintenance

The course provider is responsible for a course's compliance of content, organization and implementation as well as for staff qualifications.

Apart from this there should also be a periodical evaluation of results and experience to ascertain any need for updating. For this purpose an audit should be undertaken at least once every 5 years through dedicated working groups involving all stakeholders.

5.3 Practical Activities

Generally speaking, practical activities involve:

(Simulator) exercises

Practical exercises on board a (training) vessel or in an IWT ship-handling simulator can be undertaken in order to give the learners the opportunity to deepen and enhance their theoretical knowledge. This practical training links the theoretical content of the lessons to their practical use.

Case studies

Theoretical subjects are elaborated autonomously by the learners in case studies. The candidate should deepen their knowledge in defined theoretical subjects by elaborating on a variety of facts and figures on this topic and then presenting the results in front of the class.

Group discussions, interactive learning

Possible solutions to theoretical and practical subjects can be discussed within (a subsection of) the learning group. Different opinions on a defined subject are exchanged and discussed by the participants, broadening individuals' views of the problem and highlighting possible solutions and their respective advantages and disadvantages. Such discussions should where necessary be monitored and steered (stimulated or consolidated) to ensure that every student actively participates.

Teamwork

Assignments can be either individual or team assignments, depending on the objective. An individual assignment should stimulate and show up an individual's competences. In a teamwork assignment the participants will be exposed to a wide range of experiences: from quick synergy-based problem-solving to experiences relating to such aspects as interpersonal difficulties in a team setting. Depending on the purpose of the assignment the team should be defined in advance, with the assignment and any work process rules being communicated to the team in a clear and formal manner.

Specify in attachment 3 the Practical Activities such as:

- *Simulator exercises*
- *Practical (real life) exercises such as:*
 - *Case studies*
 - *Discussions*
 - *Team work*

The description contains at least the following items:

- *Specific objectives of the Practical Activities*
- *Relation to theory*
- *Clear instructions for the instructor/operator for performing the Practical Activities*

5.4 Classroom facilities and educational tools

For the course the following educational tools should be used:

Classroom facilities such as

- Blackboard or whiteboard
- Overhead projector or beamer
- Computers

Educational tools

- Books
- Print-outs
- E-reader
- E-learning modules

Laboratory equipment and facilities such as

- Bollards, anchor windlass, lashing windlass
- Ship models
- Ropes, wires, chains
- Mast showing day and night signals
- Personal Safety/Protection Equipment
- Charts
- Compasses, such as magnetic and gyro
- Handbooks Inland Navigation

Simulators such as

- Bridge simulator, designed for inland navigation
- Inland ECDIS simulator
- VHF simulator

Other, such as

- (Training) vessel
- Personal Safety and Protection Equipment

Specify in attachment 4 the educational tools which will be used during the course and how they will be used.

5.5 Examination & Assessment

In general it is a good idea to apply a common and uniform evaluation/assessment concept.

Evaluation effectiveness depends on the accuracy of the description of what is to be evaluated. There are two distinct aims of a course's evaluation:

- *Student evaluation/assessment*
The aim of this evaluation/assessment is to find out whether learning has taken place. It enables the instructor to ascertain whether the student has acquired the required skills and knowledge needed at a given point in a course or in working towards a qualification.
- *Evaluation of the instructor and the course itself*
The aim of this evaluation is to determine – from a student point of view – whether the instructor has done a good job and how the organization of the course was seen, thereby gaining valuable input for the improvement/optimization of a course program and its implementation.

Guiding principles:

Evaluation and assessment should be conducted in accordance with Column 3 - Methods for demonstrating competence - and Column 4 - Criteria for evaluating competence of the PLATINA COMPETENCE TABLES. Instructors should refer to this table when designing the assessment.

The instructor or course organizer is responsible for the use of appropriate methods and evaluation tools. If necessary, appropriate evaluation tools may need to be developed. The methods and tools should be based on the course objective, the content covered and the qualifications to be achieved.

Initial / Diagnostic assessment

This should take place before the student commences a course to ensure he has the appropriate entry level. Diagnostic assessment is an evaluation of a student's skills, knowledge, strengths and areas needing further development. This can be carried out in an individual or group setting through relevant tests.

Formative/Summative assessment

Formative assessment

An integral part of the teaching/learning process is "continuous" assessment. This provides information on the student's progress and may also be used to encourage and motivate him.

The purpose of formative assessment is:

- to provide feedback to learners;
- to motivate learners;
- to diagnose learners' strengths and weaknesses;
- to help learners develop self-awareness.

Summative assessment

Such assessment is designed to measure student achievement against defined objectives and targets. It may take the form of an exam or an assignment and takes place at the end of a course. Its purpose is to assign a student a grade (pass or fail).

Theoretical/practical assessments

For theoretical examinations the following exemplary options are available:

- Multiple-choice tests: Multiple-choice items can be used to assess both simple knowledge and complex concepts. Since multiple-choice questions can be answered quickly, a student's command of many topics can be assessed in the exam. In addition, answers can be easily and reliably evaluated.
- True-false tests: As guessing will produce the correct answer half of the time, true-false tests are less reliable than other types of exams. However, they are appropriate for occasional use. Therefore, a combination of multiple-choice and true-false questions is suggested for an exam.
- Some of the true-false questions could have an added "explain" column in which learners write one or two sentences justifying their response.

When examining practical work, a performance test is a method of measuring (judging and assessing) proficiency. Performance tests require learners to demonstrate proficiency in executing a series of steps in a reasonable amount of time, following instructions and reacting to simulated situations. Performance tests can be used individually or in groups. Exact criteria have to be specified to be used for grading results and the problem has to be stated in such a way that learners know exactly what they are supposed to do. A performance test should always mirror a real-life situation.

Scoring:

The assessment is to judge whether the participants have acquired the necessary skills, in terms of achieving sufficient specified learning objectives, to perform the tasks required by the qualification. They should be tested against predetermined criteria rather than against the performance of other examinees or the norm for the group as a whole.

The pass mark should be set at the score which proves that sufficient skills and knowledge have been demonstrated in each subject. It is essential to have documentation attesting a consistent standard with regards to marking.

To achieve uniformity in marking between examiners in different centres and to facilitate the review of papers, the following guidelines should be used:

1. When several learners sit the same examination, papers – except when consisting solely of multiple-choice questions – should be marked question by question, i.e. question 1 of paper 1 should be marked for all applicants before proceeding to question 2, etc. This provides for more uniform marking.
2. All questions should be marked even if it becomes apparent that the candidate will not achieve the pass mark.

Evaluation/Assessment of the trainer/the course

Instructor / course evaluation is conducted at the end of a course. There are two possible ways of doing this:

- Usually the student will provide feedback on the course and instructor using a standardized questionnaire. Questions will relate to the content, implementation / organization and personal benefit of the course for the student.
- It is also possible to statistically compare the performance of all comparable courses, putting course data in relation to average values. This can be classified and optimized in terms of positive/negative impact on the optimization of a course offering extremely good or bad feedback. Moreover, this also allows a comparison of different training providers, insofar as they are prepared to raise this level of transparency.

Evaluation can also be required for quality assurance purposes. In such a case, the purpose will be:

- to provide feedback to Instructors on student learning;
- to evaluate a module's strengths and weaknesses;
- to improve teaching.

Specify in attachment 5 the assessment and/or examination process and items used, such as:

- *Method of assessment in terms of 'written examination, assignments, presentations, oral examination, simulator based assessment, etc.*
- *Documents used*
- *Organization of exams and assessments*
- *Teaching tools used in the assessment/examination*
- *Responsibility*
- *Rules and regulations*

6 REGULATIONS AND CERTIFICATION

In the case of an official certificate being issued by a (inter-) national body, this chapter can be filled in by the institute.

6.1 Official course name

Course name and course code used by (For instance for registration and administration purposes.)

▪

6.2 Official course name as used by the accreditation authority

Name and code of the course and name and code of..... as used by the accreditation authority.

Name of the accreditation authority

▪

Name and code of the course (according to the authority)

▪

Name and code of (according to the authority)

▪

6.3 Official text and stamp for the Service Record Book (or other)

(If applicable) The official text and stamp that should be used for course registration in the Service Record Book (or other) of the participants

▪

6.4 Course certificate

Attached: a copy and below the link to the location of the certificate as it is approved or recognized by the authority.

Location course certificates:

-

6.5 Official course manual/guide line reference

Reference can be made to official course manual/guide lines from authorities/institutes such as:

When elements of the course manual are used, these should be specified.

Model course/guide line reference:

6.6 List of qualified instructors and examiners

An overview of instructors and examiners who are qualified by to hold this course for

- List of qualified instructors is available from the responsible manager.

7 ATTACHMENTS

7.1 List of attachments

The following attachments are named earlier in the course manual. Attachments have to be adapted or added by the institute to complete the course manual. Any other document can be attached if useful or needed.

1. Instructor Guide
2. Course books, presentations and/or hand-outs
3. Description of Practical Activities
4. Classroom facilities and educational tools
5. Assessment/examination
6. Certificate
7.