



2013 Curriculum for the Certificate of Vocational Education in Industrial Trades

Ship Building Program

Specializations:

Metal Ship Building

Wooden and Fiberglass Ship Building

Naval Architecture

Ship Maintenance

**Office of
the Vocational Education Commission
Ministry of Education**

Structure

2013 Curriculum for the Certificate of Vocational Education in Industrial Trades

Ship Building Program

The graduates of the Certificate of Vocational Education in Industrial Trades (Ship Building) must complete minimum 103 credits from different courses and participate in extracurricular activities as shown in the following structure.

1. Life Skills Courses		minimum 22 credits
1.1 Thai Language Courses		(minimum 3 credits)
1.2 Foreign Language Courses		(minimum 6 credits)
1.3 Science Courses		(minimum 4 credits)
1.4 Mathematics Courses		(minimum 4 credits)
1.5 Social Studies Courses		(minimum 3 credits)
1.6 Health Education and Physical Education Courses		(minimum 2 credits)
2. Vocational Skills Courses		minimum 71 credits
2.1 Basic Vocational Skills Courses		(18 credits)
2.2 Specialized Vocational Skills Courses		(24 credits)
2.3 Elective Vocational Skills Courses		(minimum 21 credits)
2.4 Vocational Skills Practical Experience		(4 credits)
2.5 Vocational Skills Development Project		(4 credits)
3. Elective Courses		minimum 10 credits
4. Extracurricular Activities	(2 hours per week)	
	Total	minimum 103 credits

1. Life Skill Courses**minimum 22 credits**

In each group listed below, the first course is compulsory (except 1.6). The remaining credits can be selected from other courses within the group to meet the requirements. Chosen courses must be related to the program of study. The total credits should be at least 22.

1.1 Thai Language Courses (minimum 3 credits)

Code	Title	T – P – C
2000-1101	Basic Thai	2 – 0 – 2
2000-1102	Thai for Careers	1 – 0 – 1
2000-1103	Business Thai	1 – 0 – 1
2000-1104	Speaking for Careers	1 – 0 – 1
2000-1105	Writing for Careers	1 – 0 – 1
2000-1106	Creative Thai	1 – 0 – 1
2000*1101 to 2000*1199	Courses in this range are additionally developed by the individual colleges or institutes.	* - * - *

1.2 Foreign Language Courses (minimum 6 credits)

Code	Title	T – P – C
2000-1201	Real Life English 1	2 – 0 – 2
2000-1202	Real Life English 2	2 – 0 – 2
2000-1203	English Listening and Speaking 1	0 – 2 – 1
2000-1204	English Listening and Speaking 2	0 – 2 – 1
2000-1205	Reading Authentic Materials	0 – 2 – 1
2000-1206	Daily Writing	0 – 2 – 1
2000-1207	Technical English On-the-Job	0 – 2 – 1
2000*1201 to 2000*1299	Courses in this range are additionally developed by the individual colleges or institutes.	* - * - *

1.3 Science Courses (minimum 4 credits)

Code	Title	T – P – C
2000-1301	Science for Life Skills	1 – 2 – 2
2000-1302	Science for Industry	1 – 2 – 2
2000-1306	Science Project	0 – 2 – 1
2000*1301 to 2000*1399	Courses in this range are additionally developed by the individual colleges or institutes.	* - * - *

1.4 Mathematics Courses (minimum 4 credits)

Code	Title	T – P – C
2000-1401	Basic Mathematics	2 – 0 – 2
2000-1402	Basic Mathematics for Careers	2 – 0 – 2
2000-1403	Basic Mathematics for Industry 1	2 – 0 – 2
2000-1404	Basic Mathematics for Industry 2	2 – 0 – 2
2000-1405	Introduction to Calculus and Analytic Geometry	2 – 0 – 2
2000*1401 to 2000*1499	Courses in this range are additionally developed by the individual colleges or institutes.	* - * - *

1.5 Social Studies courses (minimum 3 credits)

Code	Title	T – P – C
2000-1501	Civil Duties and Morals	2 – 0 – 2
2000-1502	Life Skills and Society	2 – 0 – 2
2000-1503	Geography and Thai History	2 – 0 – 2
2000-1504	ASEAN Studies	1 – 0 – 1
2000-1505	Current Affairs	1 – 0 – 1
2000-1506	ASEAN Culture	1 – 0 – 1
2000*1501 to 2000*1599	Courses in this range are additionally developed by the individual colleges or institutes.	* - * - *

1.6 Health Education and Physical Education Courses (minimum 2 credits)

Select any course(s) within this group for a total of not less than 2 credits.

1.6.1 Physical Education Courses

Code	Title	T – P – C
2000-1601	Physical Education for Health Development	0 – 2 – 1
2000-1602	Life Skills for Health Development	0 – 2 – 1
2000-1603	Physical Fitness for Work	0 – 2 – 1
2000-1604	Self-Defense	0 – 2 – 1
2000-1605	Physical Education for Disabled	0 – 2 – 1

1.6.2 Health Education Courses

Code	Title	T – P – C
2000-1606	Life Management for Happiness	1 – 0 – 1
2000-1607	Sexuality Education	1 – 0 – 1
2000-1608	Narcotic Education	1 – 0 – 1

1.6.3 Integrated Courses

Code	Title	T – P – C
2000-1609	Skills for Health Development	1 – 2 – 2
2000-1610	Quality of Life Development	1 – 2 – 2
2000*1601 to 2000*1699	Courses in this range are additionally developed by the individual colleges or institutes.	* - * - *

2. Vocational Skills Courses minimum 71 credits

2.1 Basic Vocational Skills Courses (18 credits) All courses are compulsory.

Code	Title	T – P – C
2001-1001	Work Orientation	2 – 0 – 2
2001-2001	Computer and Information for Work	1 – 2 – 2
2100-1001	Basic Technical Drawing	1 – 3 – 2
2121-1002	Industrial Materials	2 – 0 – 2
2121-1003	Bench Works 1	0 – 6 – 2
2121-1005	Basic Welding and Sheet Metal	1 – 3 – 2
2121-1006	Basic Electrical and Electronic Work	1 – 3 – 2
2121-1008	Basic Machine Tools	1 – 3 – 2
2121-1009	Basic Pneumatic and Hydraulic Work	1 – 3 – 2

- **Additional Basic Vocational Skills Courses**

Colleges and institutes can also provide the following courses under the Elective Vocational Skills Courses or Elective Courses.

Code	Title	T – P – C
2001-1002	Entrepreneurship	2 – 0 – 2
2001-1003	Energy and the Environment	1 – 2 – 2
2001-1004	Vocational Hygiene and Safety	1 – 2 – 2
2001-1005	Resource and Environment Conservation at Work	1 – 0 – 1
2001-1006	Labor Law	1 – 0 – 1
2001-1007	Work Safety	1 – 0 – 1

2.2 Specialized Vocational Skills Courses (24 credits) All courses are compulsory.

Code	Title	T – P – C
2117-2001	Ship Blueprint Drawing 1	1 – 3 – 2
2117-2002	Ship Blueprint Drawing 2	1 – 3 – 2
2117-2003	Ship Lofting 1	1 – 3 – 2
2117-2004	Ship Lofting 2	1 – 3 – 2
2117-2005	Computer-Aided Ship Drawing 1	1 – 2 – 2
2117-2006	Ship Building Techniques and Marine Studies	2 – 0 – 2
2117-2007	Ship Building Mathematics	2 – 0 – 2
2117-2008	Paints and Ship Body Protection	1 – 3 – 2
2117-2009	Cost Estimation	2 – 0 – 2
2117-2010	Mechanical Work and Driving Systems	2 – 3 – 3
2117-2011	Introduction to Ship Piping	2 – 3 – 3

2.3 Elective Vocational Skills Courses (minimum 21 credits)

Select courses (minimum 15 credits) from within one of the following specializations. The remaining courses can be from any other specializations within this section (2.3) to meet the credit requirement.

2.3.1 Metal Ship Building

Code	Title	T – P – C
2117-2101	Arc Welding 1	1 – 6 – 3
2117-2102	Arc Welding 2	1 – 6 – 3
2117-2103	Arc Welding 3	1 – 6 – 3
2117-2104	Metal Ship Body Assembly	1 – 6 – 3
2117-2105	Metal Ship Building 1	1 – 6 – 3
2117-2106	Metal Ship Building 2	1 – 6 – 3
2117-2107	Metal Ship Body Repairs	1 – 6 – 3
2117-2108	Ship Building Quality Control	1 – 6 – 3

Dual Vocational Education (DVE)

Code	Title	T – P – C
2117-5101	Metal Ship Building Practice 1	* - * - 3
2117-5102	Metal Ship Building Practice 2	* - * - 3
2117-5103	Metal Ship Building Practice 3	* - * - 3
2117-5104	Metal Ship Building Practice 4	* - * - 4
2117-5105	Metal Ship Building Practice 5	* - * - 4
2117-5106	Metal Ship Building Practice 6	* - * - 4

2.3.2 Wooden and Fiberglass Ship Building

Code	Title	T – P – C
2117-2201	Basic Wood Work	1 – 6 – 3
2117-2202	Wooden Ship Body Assembly	1 – 6 – 3
2117-2203	Woodworking Machinery	1 – 6 – 3
2117-2204	Ship Hull Repairs	1 – 6 – 3
2117-2205	Fiberglass Mold Making	1 – 6 – 3
2117-2206	Fiberglass Ship Body Casting and Assembly	1 – 6 – 3
2117-2207	Fiberglass Products	1 – 6 – 3

Dual Vocational Education (DVE)

Code	Title	T – P – C
2117-5201	Wooden and Fiberglass Ship Building Practice 1	* - * - 3
2117-5202	Wooden and Fiberglass Ship Building Practice 2	* - * - 3
2117-5203	Wooden and Fiberglass Ship Building Practice 3	* - * - 3
2117-5204	Wooden and Fiberglass Ship Building Practice 4	* - * - 4
2117-5205	Wooden and Fiberglass Ship Building Practice 5	* - * - 4
2117-5206	Wooden and Fiberglass Ship Building Practice 6	* - * - 4

2.3.3 Naval Architecture

Code	Title	T – P – C
2117-2301	Ship Detailed Designs	1 – 6 – 3
2117-2302	Ship Internal System Drawing	1 – 6 – 3
2117-2303	Computer-Aided Ship Drawing 2	1 – 6 – 3
2117-2304	Ship Piping Drawing	1 – 6 – 3

Code	Title	T – P – C
2117-2305	Mechanical and Driving System Drawing	1 – 6 – 3
2117-2306	Ship Electrical and Electronic Drawing	1 – 3 – 2
2117-2307	Ship Building Inventions	1 – 3 – 2
2117-2308	Ship Building Rules and Regulations	2 – 0 – 2

Dual Vocational Education (DVE)

Code	Title	T – P – C
2117-5301	Naval Architecture Practice 1	* - * - 3
2117-5302	Naval Architecture Practice 2	* - * - 3
2117-5303	Naval Architecture Practice 3	* - * - 3
2117-5304	Naval Architecture Practice 4	* - * - 4
2117-5305	Naval Architecture Practice 5	* - * - 4
2117-5306	Naval Architecture Practice 6	* - * - 4

2.3.4 Ship Maintenance

Code	Title	T – P – C
2117-2401	Pier Management	1 – 6 – 3
2117-2402	Ship Maintenance Management	1 – 6 – 3
2117-2403	Ship Body Maintenance	1 – 6 – 3
2117-2404	Ship Power Maintenance	1 – 6 – 3
2117-2405	Ship Driving System Maintenance	1 – 6 – 3
2117-2406	Ship Electrical Work	1 – 6 – 3
2117-2407	Ship Electronic Work	1 – 6 – 3
2117-2408	Ship Interior Design	1 – 6 – 3

Dual Vocational Education (DVE)

Code	Title	T – P – C
2117-5401	Ship Maintenance Practice 1	* - * - 3
2117-5402	Ship Maintenance Practice 2	* - * - 3
2117-5403	Ship Maintenance Practice 3	* - * - 3
2117-5404	Ship Maintenance Practice 4	* - * - 4
2117-5405	Ship Maintenance Practice 5	* - * - 4
2117-5406	Ship Maintenance Practice 6	* - * - 4

For the Dual Vocational Education (apprenticeship) of minimum 21 credits, the college and the workplace together analyze the nature of the business of the workplace in order to determine the number of credits, appropriate courses in details, the occupational training plans, and the assessment and evaluation methods for the courses. The minimum total training time at the workplace is 54 hours, which is equivalent to 1 credit.

2.4 Vocational Skills Practical Experience (4 credits)

Select only 2117-8001 Work Practice or, alternatively, select 2117-8002 Work Practice 1 together with 2117-8003 Work Practice 2.

Code	Title	T – P – C
2117-8001	Work Practice	* - * - 4
2117-8002	Work Practice 1	* - * - 2
2117-8003	Work Practice 2	* - * - 2

2.5 Vocational Skills Development Project (4 credits)

Select only 2117-8501 Project or, alternatively, select 2117-8502 Project 1 together with 2117-8503 Project 2.

Code	Title	T – P – C
2117-8501	Project	* - * - 4
2117-8502	Project 1	* - * - 2
2117-8503	Project 2	* - * - 2

3 Elective Courses

minimum 10 credits

Courses can be chosen from the list below or from any area and program of study provided in the 2013 Curriculum for the Certificate of Vocational Education, according to students' aptitudes and interests. However, individual colleges and institutes can develop additional elective courses in relation to the local community needs and contexts.

Code	Title	T – P – C
2117-9001	Waterway Survival	1 – 3 – 2
2117-9002	Basic First Aid	1 – 3 – 2
2117-9003	Safety and Responsibility on Board	1 – 3 – 2
2117-9004	Fire Prevention and Fire Fighting	1 – 3 – 2
2117-9005	Sea Survival	1 – 3 – 2
2117-9006	Introduction to Fiberglass Work	1 – 3 – 2
2117-9007	Reinforcement and Structure Work	1 – 6 – 3
2117-9008	Fiberglass Ship Repairs	1 – 6 – 3
2XXX*9X01 to 2XXX*9X99	Elective courses in this range are additionally developed by individual colleges or institutes according to the needs of the workplace or the regional strategies or further study.	* - * - *

4 Extracurricular Activities

(2 hours per week)

Code	Title	T – P – C
2000-2001	Rover Scout Activity 1	0 – 2 – 0
2000-2002	Rover Scout Activity 2	0 – 2 – 0
2000-2003	Vocational Organization Activity 1	0 – 2 – 0
2000-2004	Vocational Organization Activity 2	0 – 2 – 0
2000-2005	Vocational Organization Activity 3	0 – 2 – 0
2000-2006	Vocational Organization Activity 4	0 – 2 – 0
2000*2001 to 2000*20XX	Courses in this range are additionally developed or arranged by individual colleges, institutes or the workplace. This can be a military activity.	0 – 2 – 0