Computer Technology

2003 Curriculum for Diploma of Vocational Education
Area of Study : Industrial Trades
Program : Computer Technology
Objectives

The program aims at providing students with knowledge, skills, abilities, attitudes and experience which will enable them to perform as competent technicians in the field of Computer Technology. The objectives of the program are:

1. To provide basic knowledge and skills about languages, society, humanities, mathematics and science, and also to apply these to self-development by seeking out further knowledge within the field of Computer Technology.
2. To provide knowledge and skills about the basic principles and processes of technician tasks concerning industrial management and planning; and to provide the ability to follow new technological developments to improve their careers.
3. To promote critical thinking, problem-solving skills and creative thinking; and to provide the ability to bring the technology into the development of computer work.
4. To promote good personality; responsibility to themselves, family and society; morals and ethics; and good manners in their careers.
5. To provide the ability to work in industrial workplaces or in self-employment in the field of Computer Technology.

Vocational Education Standards of the Program

Students should be able to:

1. Conduct technical communication in the workplace
2. Organize and program data-based systems in the workplace
3. Solve problems using mathematics, science, technology and relevant procedures
4. Manage, control and develop their quality of work
5. Demonstrate the attribution of technicians
6. Provide services of digital and electronic circuits
7. Computer programs development
8. Inspect and repair computers and peripheral equipment
9. Provide information services

Computer Hardware Specialization

10. Provide services of computer hard wares and peripheral equipments.
11. Provide services of electrical machine control systems by computers.

Computer Software Specialization

10. Develop and use application programs.
11. Develop computer programming.

Network & Information Systems Specialization

10. Provide services of computer network.
11. Provide services of information systems and Internet.

Multimedia Specialization

10. Provide services of computer multimedia.
11. Provide services of computer graphics.

Program Structure
2003 Curriculum for the Diploma of Vocational Education
Area of Study : Industrial Trades
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For the fulfillment of the program, graduates should have completed at least 94 credits from the 5 groups of courses below.

1. General Courses (not less than)		**24**	**credits**
1.1 Basic General Courses	**13**	**credits**	
1.2 Vocational-based General Courses (not less than)	**11**	**credits**	
2. Vocational Courses (not less than)		**64**	**credits**
2.1 Basic Vocational Courses	**15**	**credits**	
2.2 Core Vocational Courses	**27**	**credits**	
2.3 Specialized Vocational Courses (not less than)	**18**	**credits**	
2.4 Project	**4**	**credits**	
3. Free Elective Courses (not less than)		**6**	**credits**
4. On-the-job Training (not less than 1 Semester)			
5. Extracurricular Activities 120 Hours			
Total (not less than)		**94**	**credits**

Entry into this program requires satisfactory completion of the Vocational Education Certificate in Electrical and Electronics Program or equivalent.

Bridging Courses

Students who have completed a Vocational Education Certificate in other fields or completed secondary school (M6 or Grade 12) must complete bridging courses as follows:

Code	Course Title	Cr	(Hr)
3100-0001	Basic Bench Work	3	(5)
3100-0001	Basic Bench Work	3	(5)
3100-0002	Technical Drawing	2	(4)
3100-0003	Electrical and Electronics Work	2	(4)
3105-0001	Basic Electric Circuits and Instruments	3	(4)
3105-0002	Electronics Drawing	2	(3)
3105-0003	Basic Electronics Circuits	2	(3)
3105-0004	Basic Pulse and Digital Circuit	2	(3)
3128-0001	Basic Microprocessor	3	(5)
	Total	**19**	**(31)**

1. General Courses (not less than) 24 credits

1.1 Basic General Courses 13 credits

Code	Course Title	Cr	(Hr)
3000-110X	Thai Language (Elective)	3	(3)
3000-1201	Developing Skills for English Communication 1	2	(3)
3000-1202	Developing Skills for English Communication 2	2	(3)
3000-1301	Thai Life and Culture	1	(1)
3000-130X	Social Studies (Elective)	2	(2)
3000-1601	Library and Information Studies	1	(1)
3000-160X	Humanities (Elective)	2	(2)

1.2 Vocational-based General Courses (not less than) 11 credits

Code	Course Title	Cr	(Hr)
3000-120X	English (Elective)	1	(2)
3000-120X	English (Elective)	1	(2)
3000-140X	Science (Elective)	3	(4)
3000-1521	Mathematics 2	3	(3)
3000-1525	Calculus 1	3	(3)

2. Vocational Courses (not less than) 64 credits

2.1 Basic Vocational Courses 15 credits

Students must take the compulsory courses (3128-1001 to 3128-1003) and select one course from 3000-100X and one from 3000-020X to fulfill the requirements.

Code	Course Title	Cr	(Hr)
3128-1001	Electronics Technology	3	(4)
3128-1002	Digital Circuit	3	(4)
3128-1003	Structure Programming 1	3	(4)
3000-010X	Quality Management (Elective)	3	(3)
3000-020X	Computer Technology (Elective)	3	(4)

Remarks : The code with X will be chosen from the appendi**x.**

2.2 Core Vocational Courses 27 credits

Students must take 5 compulsory courses (3128-2001 to 3128 -2005) and select courses from the remainder to fulfill the requirements.

Code	Course Title	Cr	(Hr)
3128-2001	Operating System	3	(4)
3128-2002	Computers and Peripheral Devices	3	(4)
3128-2003	Computer Network Systems	3	(4)
3128-2004	Data Structures	3	(4)
3128-2005	Object-Oriented Programming 1	3	(4)
3128-2006	Digital Circuit Designs	3	(4)
3128-2007	Microprocessor Application	3	(4)
3128-2008	Interface Techniques	3	(4)
3128-2009	System Analysis and Design	3	(4)
3128-2010	Data Communications	3	(4)
3128-2011	Network Administration and Management	3	(4)
3128-2012	Internet Technology	3	(4)

3128-2013	Object-Oriented Analysis and Designs	3	(4)
3128-2014	Computer Graphic Programs	3	(4)
3128-2015	Application Program Usage	3	(4)
3128-2016	Web Designs and Development	3	(4)
3128-2017	Web Programming 1	3	(4)
3128-2018	Web Programming 2	3	(4)
3128-2019	Multimedia Devices	3	(4)
3128-2020	Multimedia on Web	3	(4)
3128-2021	Introduction to Multimedia Technology	3	(4)
3128-2022	Application Package in Multimedia	3	(4)

2.3 Specialized Vocational Courses (not less than) 18 credits

Students must take at least 18 credits from the Specialized Vocational Courses. These can be taken from one field of specialization.

1. Computer Hardware Specialization

Code	Course Title	Cr	(Hr)
3128-2101	Assembly Language Programming	3	(4)
3128-2102	Application of Computers in Industrial Work	3	(4)
3128-2103	Maintenance of Computers and peripheral Devices	3	(4)
3128-2104	Microcontroller	3	(4)
3128-2105	Programmable Logic Control	3	(4)
3128-2106	Service and Maintenance in Computer Hardware	3	(4)
3128-2107	Computer Hardware Projects	3	(4)
3128-2108	Advanced Topic in Computer Hardwares	3	(4)
3128-2109	Special Problems in Computer Hardwares	3	(4)
3128-4101	Computer Hardware Apprenticeship 1	5	(*)
3128-4102	Computer Hardware Apprenticeship 2	5	(*)
3128-4103	Computer Hardware Apprenticeship 3	4	(*)
3128-4104	Computer Hardware Apprenticeship 4	4	(*)

2. Computer Software Specialization

Code	Course Title	Cr	(Hr)
3128-2201	Structure Programming 2	3	(4)
3128-2202	Computer Graphics programming	3	(4)
3128-2203	File Processing	3	(4)
3128-2204	Object-Oriented Programming 2	3	(4)
3128-2205	Computer Assist Designs	3	(4)
3128-2206	Software Engineering	3	(4)
3128-2207	Fundamental of Artificial Intelligence	3	(4)
3128-2208	Computer Software Services	3	(4)
3128-2209	Innovation in Computer Softwares	3	(4)
3128-2210	Advanced Topic in Computer Softwares	3	(4)
3128-2211	Special Problems in Computer Softwares	3	(4)
3128-4201	Computer Software Apprenticeship 1	5	(*)
3128-4202	Computer Software Apprenticeship 2	5	(*)
3128-4203	Computer Software Apprenticeship 3	4	(*)
3128-4204	Computer Software Apprenticeship 4	4	(*)

3. Network & Information Systems Specialization

Code	Course Title	Cr	(Hr)
3128-2301	Information Technology	3	(4)
3128-2302	Linux Operation System	3	(4)
3128-2303	Unix Operation System	3	(4)
3128-2304	Database Management on Network	3	(4)
3128-2305	Network Security	3	(4)
3128-2306	Network Testing and Measurement	3	(4)
3128-2307	Service and Maintenance in Computer Network	3	(4)
3128-2308	Innovation in Computer Network	3	(4)
3128-2309	Advance Topic in Computer Network	3	(4)
3128-2310	Special Problems in Computer Network	3	(*)
3128-4301	Computer Network Apprenticeship 1	5	(*)
3128-4302	Computer Network Apprenticeship 2	5	(*)
3128-4303	Computer Network Apprenticeship 3	4	(*)
3128-4304	Computer Network Apprenticeship 4	4	(*)

4. Multimedia Specialization

Code	Course Title	Cr	(Hr)
3128-2401	Image Processing	3	(4)
3128-2402	Multimedia Programming	3	(4)
3128-2403	Computer Assisted Instruction	3	(4)
3128-2404	Analysis Multimedia systems and designs	3	(4)
3128-2405	Digital Video Production	3	(4)
3128-2406	Multimedia Application	3	(4)
3128-2407	Operation and Maintenance of Multimedia Devices	3	(4)
3128-2408	Application Software in Multimedia Technology	3	(4)
3128-2409	Service and Maintenance in Computer Multimedia	3	(4)
3128-2410	Innovation in Computer Multimedia	3	(4)
3128-2411	Advance Topic in Computer Multimedia	3	(4)
3128-2412	Special Problems in Computer Multimedia	3	(4)
3128-4401	Computer Multimedia Apprenticeship 1	5	(*)
3128-4402	Computer Multimedia Apprenticeship 2	5	(*)
3128-4403	Computer Multimedia Apprenticeship 3	4	(*)
3128-4404	Computer Multimedia Apprenticeship 4	4	(*)

For the Dual System (apprenticeships), the college and the employer together analyze the course objectives and course standards, to produce an appropriate work plan (40 hours is equivalent to 1 credit) and design a method of evaluation.

2.4 Project **4 credits**

Code	Course Title	Cr	(Hr)
3128-6001	Project	4	(*)

3. Free Elective Courses **(not less than) 6 credits**

Students can choose courses from any area of study, according to their aptitude and interests, from the list provided in the 2003 Curriculum for the Diploma of Vocational Education.

4. On-the-job Training (not less than 1 Semester)

For On-the-job Training, the college selects Vocational Courses which are undertaken at the workplace, for at least 1 semester.

5. Extracurricular Activities (120 Hours)

The college arranges extracurricular activities for 40 hours/semester, totaling not less than 120 hours for the entire program.