

Professional Technical Studies: Information Technology Cluster
Programming/Software Engineering Pathway

Strand:		Programming and Software Engineering
	PT-PSD1	Students will use software to design solutions for customer needs.
Standard:		PT-PSD1a: The student will identify and analyze customer software needs and requirements so as to:
Components:		PT-PSD1a.1: gather data to identify customer requirements;
		PT-PSD1a.2: conduct needs analysis;
		PT-PSD1a.3: develop software requirements specification;
		PT-PSD1a.4: analyze requirements/specifications using current approaches; and
		PT-PSD1a.5: use available reference tools as appropriate.
Standard:		PT-PSD1b: The student will produce IT-based strategies and project plan to solve the specific problem so as to:
Components:		PT-PSD1b.1: define scope of work for the programming project;
		PT-PSD1b.2: demonstrate knowledge and skills of working on a software development team; and
		PT-PSD1b.3: design project plan.
Standard:		PT-PSD1c: The student will define and analyze system and software requirements so as to:
Component:		PT-PSD1c.1: understand elements and types of information processing.
Standard:		PT-PSD1d: The student will demonstrate the effective use of tools for software development so as to:
Components:		PT-PSD1d.1: apply tools for developing software applications; and
		PT-PSD1d.2: apply language-specific programming tools/techniques.
Standard:		PT-PSD1e: The student will demonstrate knowledge of the software development process so as to:
Component:		PT-PSD1e.1: demonstrate knowledge of software development methodology.
Standard:		PT-PSD1f: The student will design a software application so as to:
Components:		PT-PSD1f.1: create design specification for a computer application;
		PT-PSD1f.2: demonstrate comprehension of the trade-off involved in design choices;
		PT-PSD1f.3: demonstrate knowledge of computing/networking hardware and software architecture; and
		PT-PSD1f.4: apply the principles of effective information management, information organization, and information retrieval skills.
Standard:		PT-PSD1g: The student will produce (i.e., code) a computer application so as to:
Components:		PT-PSD1g.1: demonstrate knowledge of programming language concepts;

	PT-PSD1g.2: demonstrate proficiency in developing an application using an appropriate programming language;
	PT-PSD1g.3: understand the range of languages used in software development;
	PT-PSD1g.4: demonstrate knowledge of program development methodology;
	PT-PSD1g.5: demonstrate knowledge of basic implementation of software systems;
	PT-PSD1g.6: develop software requirements/specifications; and
	PT-PSD1g.7: resolve problems with integration if they occur.
Standard:	PT-PSD1h: The student will demonstrate knowledge of software testing so as to:
Components:	PT-PSD1h.1: develop test plan;
	PT-PSD1h.2: perform testing and validation;
	PT-PSD1h.3: document test results; and
	PT-PSD1h.4: develop software testing audit trails.
Standard:	PT-PSD1i: The student will perform maintenance and customer support functions so as to:
Components:	PT-PSD1i.1: analyze technical support needs for software;
	PT-PSD1i.2: perform customer service; and
	PT-PSD1i.3: perform software maintenance activities.