Software Engineering Design Technical Skill Assessment

Performance Level	**Dimension 1** **Identify and analyze customer software needs and requirements.**	**Dimension 2** **Design a software application**	**Dimension 3** **Produce (code) a computer application.**	**Dimension 4** **Test Project to see if it satisfies customer & software requirements**	**Dimension 5** **Provide user documentation & user installation procedures**
Exceptional	● Functional Requirements are gathered & analyzed to remove ambiguity, contradictions, & identify missing requirements	● Design of UI is intuitive & demonstrates attention to usability & fully supports requirements ● All Essential Algorithms identified & supporting data structures are well-chosen	● Product satisfies all essential functional requirements ● Product works and solution meets professional efficiency standards ● Code is self-documenting & well-commented	● Test Plan includes test cases that test boundary conditions and validates user input ● Test Plan was followed that covered all test cases, most bugs identified & fix	● User manual provided complete, clear, well-structured & well-written ● Installation procedures are fully described & includes trouble-shooting for common installation errors
Exceeds	● Functional requirements are gathered & analyzed to remove ambiguity & contradictions	● Design of UI is intuitive & supports requirements well ● All Essential Algorithms identified & well described ● Employs appropriate data structures	● Product satisfies almost all of the essential functional requirements ● Product works and solution is efficient ● Code is readable & comments describe intention of programmer	● Test Plan includes test cases that test boundary conditions ● Test plan was followed, some bugs identified and fixed	● User manual provided is complete and clear (easily understood) ● Installation procedures are fully described
Proficient (Meets)	● Gathers most of the functional requirements	● Design of UI supports requirements ● Essential Algorithms identified & described ● Employs appropriate data structures	● Product satisfies most of the essential functional requirements ● Product works, but not efficiently ● Code is readable & comments are present, but not sufficient	● Test Plan includes test to verify that most of the requirements have been satisfied ● Test plan was followed & bugs identified	● User manual provided is complete ● Installation procedures are somewhat complete
Basic/Fair	● Gathers some of the functional requirements	● UI is unintuitive & inconsistent ● Essential Algorithms are sometimes identified & not described	● Product satisfies only some of the essential functional requirements ● Code is disorganized,	● Test plan exists, but is incomplete ● Test plan never used	● User manual provided, but incomplete ● No installation procedures are

		● Employs poor selection of data structures	& poorly documented		provided
Limited/Emerging	● Gathers little or none of the functional requirements	● UI is unusable or incomplete ● Algorithms if they are used are undocumented ● Does not employ any appropriate data structures	● Product satisfies only few or none of the functional requirements ● Code fails to function	● No test plan exists	● No user manual ● No installation procedures

When choosing a project, students must choose a relevant and rigorous project. The project has to have an identified user. It needs to pass Acceptance Testing – client says “it’s acceptable”. And students need to create a test case to verify each specific requirement has been met.