**BS-CS Program Outcomes Check-List** (Fall 2012)

**Senior Project**

**Assessment of Student Outcomes of the BS in Computer Science**

**of the**

**School of Computing and Information Sciences**

**Florida International University**

The School of Computing and Information Sciences evaluates the Senior Projects of its graduating seniors for the purpose of assessing the level of attainment of the Student Outcomes of the BS in Computer Science program.

Please complete once per project/team. Your responses to this survey will be used solely to assist evaluators in locating assessment indicators in the documentation of your project. Your responses will not impact your course grade.

**This survey is expressly NOT for assessment of student performance in the SCIS Senior Project course for assignment of letter grade, nor for assessment of the instructor(s).**

Project Title \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Semester & Year \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Advisor (Faculty / Industry Sponsor): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Team: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Contact (email / phone): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Student Outcome (a)**: *Demonstrate proficiency in the foundation areas of Computer Science including discrete structures, logic and the theory of algorithms*

* Does the project design utilize finite state machines to model system behavior?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project utilize graphs or trees to model some system feature(s)? e.g. UML, PERT

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project utilize the syntax of Symbolic Logic to specify design features? E.g. OCL

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project utilize terminology and operations of sets, relations or functions

E.g. Equivalence Class Partitioning for generating test cases

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project incorporate elements of mathematical reasoning or proof?

E.g. Lemma or Theorem, Induction

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project utilize statistical procedure(s) to represent or summarize data

 E.g. Mean, Standard Deviation, Histogram, Percentile-Graph, etc)

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Other? Describe: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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**Student Outcome (b):** *Demonstrate proficiency in various areas of Computer Science including data structures and algorithms, concepts of programming languages and computer systems.*

*Data Structures & Algorithms*

* Does the project utilize an advanced data structure,

E.g. search tree, hash table, priority queue?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project utilize some graph algorithm

E.g. shortest path, minimum spanning tree?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project implement a customized algorithm (one you designed yourselves)?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project analyze run-time complexity of any algorithm(s)?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project analyze space complexity of any algorithm(s)?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project documents empirical measurement of algorithm performance?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project document tradeoffs in selection of data structure(s)/algorithm(s)

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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**Student Outcome (b):** *Concepts of Programming Languages*

* Does the project utilize knowledge of programming language syntax/parsing?

 E.g. Context-Free Grammars, Parse Trees, Recursive Descent

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project utilize knowledge of programming language semantics?

E.g. Natural Semantics, Interpreters, Expressions, L- and R- Value

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project utilize knowledge of language design issues

E.g. Scoping Rules, Type Checking?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project implementation utilize encapsulation mechanisms for data abstraction?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project implementation utilize code hierarchies (subclasses) for code reuse?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project implementation utilize advanced programming language feature(s)?

E.g. Recursion, Polymorphism, Generics

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project document tradeoffs in selection of the programming language(s)

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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**Student Outcome (b):** *Computer Systems (Operating Systems)*

* Does the project implementation utilize knowledge of memory management techniques?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project implementation utilize knowledge of process synchronization techniques?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project utilize knowledge of the structure of a networked architecture?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project document analysis of resource allocation or congestion issues?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project document analysis of performance or reliability issues?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project document analysis of system security issues?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project document tradeoffs in selection of various system characteristics?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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**Student Outcome (b):** *Computer Systems (Database Systems)*

* Does the project implement a customized DBMS or customized DBMS components?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project utilize conceptual or relational database schema?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project utilize a database query language, e.g. SQL?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project document consideration of information security issues?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project document consideration of information privacy issues?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project utilize an appropriate database management system?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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* Does the project documents analysis of tradeoffs in selection of a DBMS?

**If yes** : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

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**Student Outcome (e):** *Demonstrate understanding of the social and ethical concerns of the practicing computer scientist*

* Where does the project document license/copyright, sources/references?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* Where does the project identify and address any relevant social issues?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* Where does the project identify and address any relevant ethical issues?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* Where does the project identify and address any relevant legal issues?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* Where does the project identify and address any relevant privacy issues?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* Where does the project document any anticipated impact on users/clients?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* Where does the project document any anticipated technology impact issues?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Program Outcome (h):** *Have experience with contemporary environments and tools necessary for the practice of computing*

To be completed by the team. List the tools and IDE’s that you used at any stage of your project

Competency Rating Scale **5**: Expert, **4**: Advanced, **3**: Competent, **2**: Intermediate, *1*: Novice

\_\_\_\_ **Presentation Aids** (MS PowerPoint, Adobe Acrobat, etc.)

|  |  |  |
| --- | --- | --- |
| Domain | Software / Tool | Competency |
| Presentation |  |  |
| Demonstration |  |  |

\_\_\_\_ **Document Preparation** (MS Word, MS Visio, LaTeX, UMLet, etc.)

|  |  |  |
| --- | --- | --- |
| Domain | Software / Tool | Competency |
| Document Editing |  |  |
| Diagramming |  |  |

\_\_\_\_ **Project Management** (MS Project, AtTask, version control tools, etc.)

|  |  |  |
| --- | --- | --- |
| Domain | Software / Tool | Competency |
| Project Management |  |  |

\_\_\_\_ **Modeling** (StarUML, Rational Rose, etc.)

|  |  |  |
| --- | --- | --- |
| Domain | Software / Tool | Competency |
| UML Modeling |  |  |

\_\_\_\_ **Database Management** (MS Access, Oracle RDBMS, Apache Cassandra, etc.)

|  |  |  |
| --- | --- | --- |
| Domain | Software / Tool | Competency |
| DBMS |  |  |

\_\_\_\_ **Web Servers** (Apache Tomcat, Windows server, etc.)

|  |  |  |
| --- | --- | --- |
| Domain | Software / Tool | Competency |
| Web Server |  |  |

\_\_\_\_ **Software Testing** **Tools** (JUnit, Cobetura, etc.)

|  |  |  |
| --- | --- | --- |
|  | Software / Tool | Competency |
| Testing |  |  |

\_\_\_\_ **Other**:

|  |  |  |
| --- | --- | --- |
| Domain | Software / Tool | Competency |
|  |  |  |
|  |  |  |
|  |  |  |