**CAPSTONE DESIGN PROJECT CHECKLIST**

Advisory Committee Chairman: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Name(s): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

| Item\* | Implemented | | |
| --- | --- | --- | --- |
| Yes - Page # in Design Notebook | No | If no, cite reason(s) |
| Real life problem |  |  |  |
| Advisory committee |  |  |  |
| Situation description |  |  |  |
| Problem definition |  |  |  |
| Open-ended |  |  |  |
| Alternative solutions |  |  |  |
| Aesthetics |  |  |  |
| Specifications and regulations |  |  |  |
| Statistics and reliability |  |  |  |
| Team work |  |  |  |
| Professional ethics |  |  |  |
| Environmental impact statement |  |  |  |
| Culture and social assessment |  |  |  |
| Marketing and financial analysis |  |  |  |
| Final product |  |  |  |

**(\*) See below for definitions.**

* ***Real life problem:*** The project should reflect a real life problem related to the industry.
* ***Advisory committee:*** Each project should have at least one advisor from the academia and one advisor from the industry.
* ***Situation description:*** A situation should be clearly described by the advisor(s).
* ***Problem definition:*** The design problem should be defined by the student(s) and should involve some coaching from the advisor(s).
* ***Open-ended:*** The project should involve a problem that has no single solution.
* ***Alternative solutions:*** At least two different solutions should be discussed by the student(s) for a situation. A comparison should be performed between the alternatives.
* ***Aesthetics:*** The roadmap of thinking and the rational of the selected design solution should be clarified. Also, student(s) and advisor(s) should prepare a one sheet summarizing the curriculum sources contributed to the accumulated knowledge used to address the design project problem.
* ***Specifications and regulations:*** Adopted design specifications and regulations should be clarified in each design project.
* ***Statistics and reliability:*** An engineer usually uses database(s) or engineering model(s) to solve a specific problem. Statistical analysis should be performed for the used database(s). Design reliability should be assessed. In some cases, risk assessment may be performed.
* ***Team work:***Advisor(s) should emphasize team work among students, as applicable.
* ***Professional ethics:*** All work should be original and not copied from others. In the case of project-team, work should be divided evenly between all members. Grade should be given on individual basis and based on the effort and performance of a student. All referenced materials should be documented. Professional ethics should be implemented and enforced by the advisor(s) and students.
* ***Environmental impact statement:*** Each project should include a section to assess the impact of such a project on the environment including, but not limited to, air, water, soil, etc.
* ***Culture and social assessment:*** The final product in some projects might have a direct or indirect short, medium or long term impact on some sector(s) from the local, national and/or international society. In this case, the project report should assess the acceptability of the proposed design by the neighboring and/or end-user society.
* ***Marketing and financial analysis:*** Each project should include a cost estimate of the design and its implementation including time and material. Each project should address the marketability of the end product which could be a manufactured product or service product.
* ***Final product:*** A report should be written in clear English. A multimedia presentation is recommended. As a minimum, a power point presentation should be prepared. A one sheet summary should be prepared including the problem statement, design approach, important findings and one or more illustrations..