Assessment Findings

In response to its 2014 Academic Program Review, the department of Systems and Industrial Engineering (SIE) collected the data during the academic year 2015-2016, and the results were analyzed in August 2016, and the findings are stated in this section.

<PhD Program>

(Outcome 1) Acquire fundamental knowledge (statistics, stochastic modeling, optimization, systems theory) in the SIE domain
(Outcome 2) Develop skills in critical review/analysis of literature in his/her area of research
(Outcome 3) Formulate and analyze an in-depth original research problem
(Outcome 4) Effectively communicate ideas and results via write-ups and oral presentation

The four outcomes of PhD program are assessed through two ways: i) the SIE PhD program assessment forms for each PhD student, filled by the supervision committee during the oral comprehensive and final dissertation defense; ii) the online exit survey for each PhD student, provided by each graduated student.

More specifically, the findings are listed as follows:

- **Outcome 1** is assessed by students’ exit survey (the 1st question). All students believe that their experiences in acquiring fundamental knowledge in SIE domain are either excellent or good.

- **Outcome 2** is assessed by assessment forms collected during oral comprehensive exam (the 1st question) and final defense (the 1st question), and exit survey (the 2nd question). Comparing the results of oral comprehensive exam and final defense, the faculty committee members think PhD students’ skills in critical review/analysis of literature improved significantly from neutral levels to excellent levels. All students believe that their experiences in developing skills in critical review/analysis of literature are either excellent or good.

- **Outcome 3** is assessed by assessment forms collected during oral comprehensive exam (the 2nd question) and final defense (the 2nd question), and exit survey (the 3rd question). All students believe that their experiences in performing in-depth research are either excellent or good. The faculty committee members notice that students make progress from oral exam to final defense.

- **Outcome 4** is assessed by assessment forms collected during oral comprehensive exam (the 3rd and 4th questions) and final defense (the 3rd and 4th questions), and exit survey (the 4th question). For both written and oral communication skills, improvements are observed from oral comprehensive exam to final defense. All students believe that their experiences in communicating ideas and results are either excellent or good.
<MS Programs>

(Outcome 1) Acquire in-depth knowledge within a particular area of study and complementary knowledge from a related area in SIE
(Outcome 2) Conduct an original research (formulating a problem, developing a model, and finding a solution based on the analysis)
(Outcome 3) Effectively communicate ideas and results via write-ups and oral presentation

The three outcomes of MS programs are assessed through two ways: i) the SIE MS program assessment forms for each MS student, filled by the supervision committee during the final defense; ii) the online exit survey for each MS student, provided by each graduated student.

More specifically, the findings are listed as follows:

- Outcome 1 is assessed by students’ exit survey (the 1st question). Most students believe that their experiences in acquiring in-depth knowledge within a particular area of study and complementary knowledge from a related area in SIE are either excellent (20%) or good (60%), while 20% of students think their experiences are neutral, fair or good.

- Outcome 2 is assessed by assessment forms collected during thesis/project defense (the 1st question), and exit survey (the 2nd question). The faculty committee members think 77% of MS students are conducting excellent or good original results, while 73% of MS students believe that they are doing excellently or good.

- Outcome 3 is assessed by assessment forms collected during thesis/project defense (the 2nd and 3rd questions), and exit survey (the 3rd question). The faculty committee members think 77% of MS students can effectively communicate ideas and results in both write-ups and oral presentations, while 87% of MS students believe that they are doing excellently or good.