



Department of Industrial & Manufacturing Engineering
North Dakota State University
Program Outcomes Formative Assessment

As it pertains to Industrial & Manufacturing Engineering education at NDSU, please indicate your opinion of how much the Department, the program, and all other educational activities helped in meeting the "a-k" educational outcomes by blackening the appropriate circle. Please use the following scale to show the level of accomplishment:

a. Applications of mathematics, science, and engineering

1. How would you rate your overall NDSU educational experience in applications of math, science, and engineering

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

2. How would you rate the opportunities provided by IME program to apply knowledge of math, science, and engineering

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

3. How would you rate your ability to employ general principles, theories, concepts, and/or formulas from mathematics, science, and engineering in the solution of a wide range of problems related to their engineering program

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

b. Design, experimentation, analysis, and interpretation of data

4. How would you rate the overall NDSU educational experience in promoting your ability to design and conduct experiments

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

5. How would you rate the IME program in providing opportunities to increase your ability to design and conduct experiments

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

6. How would you rate the level of preparation you receive to independently design and conduct experiments

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

7. How would you rate the laboratory experiences in increasing your ability to design and conduct experiments

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

8. How would you rate your ability to measure, record and present raw and summary data and analyze those data for the purposes of understanding and explaining the data

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

9. How would you rate your ability to define variable types (pertinent dependent and independent), and determine how many and where to take measurements based on a thorough understanding of accuracy and precision

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

c. Design of system, component, and process

10. How would you rate your ability to engage productively and creatively in the design process

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

11. How would you rate your ability to conduct projects i.e. the student is able to: identify the project goal; define the project scope; and search for alternatives for achieving the outcome

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

12. How would you rate your ability in conducting projects i.e. your ability to use various engineering tools to choose among possible solutions

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

13. How would you rate your ability to conduct and document economics analysis of proposals for alternative solutions

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

14. How would you rate your ability to design experiences offered through program courses

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

d. Teamwork

15. How would you rate the opportunities provided by IME program to work in teams

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

16. In general, How would you rate the opportunities provided to work in a team in all of the undergraduate courses

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

17. How would you rate the opportunities provided by IME program to interact with other disciplines

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

18. How would you rate the opportunities provided by IME program to have a conceptual understanding of group dynamics and team project experiences along with skills and strategies that will make any future teamwork successful

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

19. How would you rate your ability to participate effectively as member of multi-disciplinary team, working with people who bring different skills, expertise, and perspectives to a project

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

20. How would you rate the instruction and guidance in teamwork received from professors in IME department

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

e. Engineering Problem Solving

21. How would you rate the opportunities provided by IME program courses and laboratories to solve engineering problems

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

22. How would you rate your ability to define a program-related problem by specifically describing the problem conditions—what is known or given, and what the unknowns are

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

23. How would you rate your ability to apply the appropriate program-related principles to find the unknowns and arrive at correct and effective solutions to the problem

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

f. Professional and Ethical Responsibility

24. How would you rate the level of student membership in the professional societies in Industrial & Manufacturing Engineering field

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

25. How would you rate the level of encouragement provided by the IME faculty to join the professional society

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

26. How would you rate the Ethical considerations covered/addressed in some of the engineering courses

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

27. How would you rate the adequacy of the coverage of topics related to ethics

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

28. How would you rate student's ability to become familiar with the applicable professional codes of conduct for their engineering program

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

g. Communications

29. How would you rate the opportunities provided by the IME program to help you improve your communication skills

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

30. How would you rate the program's emphasizes on the importance of lab/project reports in helping to improve communication skills

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

31. How would you rate the program's ability to offer many opportunities to help with communication skills

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

32. How would you rate the opportunities provided outside the IME courses to help with communication skills

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

33. How would you rate your ability to understand the kinds of writing and speaking you will be asked to do as professional engineer

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

34. How would you rate your ability to develop professional documents appropriate such as laboratory reports, progress reports, technical reports, technical presentations, etc.

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

35. How would you rate your ability to summarize technical material (mathematical solutions, charts, graphs, figures, tables, design drawings, etc) in ways appropriate to a particular audience

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

36. How would you rate the level of guidance and instruction received from faculty in writing and speaking

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

h. Broad Education

37. How would you rate your individual contribution to the profession and it's impact on society

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

38. How would you rate your ability to recognize and understand the nature of and significance of the vital interactions among science, technology, and social values

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

39. How would you rate your ability to understand the influence of science and technology on civilization and of the way science and technology have been applied to the betterment of humankind

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

40. How would you rate the overall education at NDSU and it's contribution to your understanding of the global issues relating to engineering and the societal context of engineering as a profession

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

41. How would you rate the opportunities provided by the IME department and/or program in shaping your understanding of their responsibilities

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

42. How would you rate the overall influence in your thinking about the role of engineering in society by the humanities and social sciences courses that you have taken

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

i. Life Long Learning

43. How would you rate your level of participation in lecture(s) in the field of engineering that was not part of the curriculum

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

44. How would you rate your ability to browse the internet or search the library for engineering information that was not related to classes

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

45. How would you rate your engineering assignments, and their involvement beyond the assignment just because it was interesting

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

46. How would you rate your willingness to read technical article(s) just for fun

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

47. How would you rate your ability to understand the need for further education and self-improvement

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

48. How would you rate your involvement in student organizations and/or engineering societies

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

49. How would you rate your understanding of the value of membership in an appropriate professional organization

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

50. You are or have plan to become a full member in an engineering society

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

j. Contemporary Issues

51. How would you rate your ability to use of periodicals, both technical and non-technical to learn about contemporary issues

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

52. How would you rate your ability to read topics outside of the IME field and related to contemporary issues

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

53. How would you rate your ability to take advantage of available facilities and media to learn about the contemporary issues

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

54. How would you rate your ability to recognize and understand the various modes of inquiry into human nature and experience, organization and change in human societies, and the nature of the world relevant to your field of engineering

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

k. Techniques, skills, and modern engineering tools

55. How would you rate your level of comfort with computers as a tool of engineering

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

56. How would you rate your ability to use application software for engineering purposes

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

57. How would you rate the level of emphasis by IME curriculum in programming for engineering applications

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

58. How would you rate the level of emphasis by IME department or curriculum in the use of internet as a tool of engineering

EX-Excellent G-Good A-Average P-Poor NO-No Opinion

59. How would you rate your ability to make extensive use of the internet as a tool of engineering

EX-Excellent G-Good A-Average P-Poor NO-No Opinion