

**(h) the broad education necessary to understand the impact of engineering solutions in a global and societal context**

<b>Outcome</b>	<b>Novice (1)</b>	<b>Apprentice (2)</b>	<b>Proficient (3)</b>	<b>Exemplary (4)</b>
<ul style="list-style-type: none"> <li>• <b>Awareness of global effects of engineering solutions (product, practice, event)</b></li> </ul>	Seems to have considered only effects on immediate users	Some awareness of the more extended effects of the solution	Good understanding of the widespread effects of the solution but with somewhat limited perspective about long-term factors	Deep understanding of the immediate and long-term issues involving the solution on users and non-users locally and globally
<ul style="list-style-type: none"> <li>• <b>Understanding of economic factors</b></li> </ul>	Little or no understanding of economic factors involved in the creation and/or use of the solution	Some understanding of economic factors as applied to the solution	Good understanding of economic factors as applied to this solution and how it affects other related solutions	Deep understanding of economic factors applied to this and related solutions and the impact they may have on the economy at large as well as long term trends
<ul style="list-style-type: none"> <li>• <b>Awareness of implications to society at large</b></li> </ul>	Little or no understanding of (or interest in?)	Moderate understanding of the implications to	Good understanding of the implications to	Deep understanding of the immediate and long term

	implications to society involved in the creation and/or use of the solution	society in the creation and/or use of the solution	society in the creation and/or use of the solution, as well as its relation to general societal issues	implications to society in the creation and/or use of the solution, and the overall potential benefits and risks to society.
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**(j) knowledge of contemporary issues**

	<b>Novice (1)</b>	<b>Apprentice (2)</b>	<b>Proficient (3)</b>	<b>Exemplary (4)</b>
<ul style="list-style-type: none"> <li>• <b>Awareness of (other) contemporary issues (political, cultural, ...)</b></li> </ul>	Little or no understanding of (or interest in?) contemporary issues directly related to the creation and/or use of the solution	Moderate understanding of the main relevant contemporary issues directly related to the creation and/or use of the solution	Good understanding of all the relevant contemporary issues directly related to the creation and/or use of the solution.	Deep understanding of all the relevant contemporary issues related to the creation and/or use of the solution, as well as of issues that may be only tangentially related; good analysis of all these issues and how they might impact the general acceptance of the solution and how this might affect the future development of similar solutions.

**(f) an understanding of professional and ethical responsibility**

<b>Outcome</b>	<b>4 Exemplary</b>	<b>3 Proficient</b>	<b>2 Apprentice</b>	<b>1 Novice</b>
Understanding of ethical and professional issues	Deep understanding of the professional issues involved and the ethical implications of the solution; careful, convincing analysis of all relevant factors.	Good understanding of all the professional/ethical issues related to the solution; reasonable analysis of the relevant issues	Some consideration of professional, ethical issues raised directly by the solution	Little or no understanding of professional/ethical issues even where there are serious questions involved