Program Level Learning Outcomes

May 2015

A. Systems Thinking

1. Explain the structure, behavior, and functionality of systems (e.g., water, energy, cities, and ecosystems) including the characteristics and interconnections among environmental, social, and economic sub-systems.

2. Discuss features of systems complexity, including diversity, redundancy, tipping points/thresholds, non-linearity, externalities, resilience, vulnerability, emergence, agency; and explain their relevance for sustainability.

3. Define physical, social, and symbolic/analytical system boundaries and explain different ways of bounding problems and systems for sustainability problem-solving (problem framing) across multiple scales.

4. Examine sustainability challenges as decision challenges including how stakeholder interests, values, needs, and influences become key drivers in problems and systems.

5. Select, modify, combine, and apply appropriate systems-thinking methods (e.g., modeling, network analysis, robustness analysis) for analyzing systems, identifying problems that pertain to sustainability, and developing solutions.

6. Critically reflect on one’s own ways of systems thinking in the context of different ways of acquiring knowledge as well as knowing, including different scientific methods and discipline as well as traditional knowledge systems.
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B. Anticipatory/Futures Thinking

1. Explain concepts of the future such as short versus long term trends, uncertainty, path dependency, likelihood, plausibility, consistency, and desirability as pertains to sustainability.

2. Describe and evaluate key historical and cross-cultural ideas of the future and recognize different groups have different ideas of the future.

3. Select, modify, combine, and apply appropriate futures-thinking methods such as constructing scenarios, developing simulations, and envisioning future states that pertain to sustainability.

4. Describe, evaluate, and use models, scenarios, visions, and simulations and articulate and critically reflect on future consequences of actions and interventions across different scales.

5. Critically reflect on one’s own thinking about the future in the context of one’s own background and values.
C. Normative/Values Thinking

1. Explain normative concepts, including goals, values, ethics, equity, justice and recognize that human thought and actions are value-laden.

2. Explain, justify, and apply sustainability principles, including socio-ecological system integrity, livelihood sufficiency and opportunity, and intergenerational equity, among others in terms of normative concepts.

3. Recognize and explain differences in normative values between individuals, groups, organizations, and cultures and how these differences impact sustainability visions.

4. Identify how normative principles guide the decisions and behavior of individuals, groups, organizations, and cultures.

5. Select, modify, combine, and apply appropriate normative methods for identifying problems, assessing and evaluating systems or actions and envisioning desirable future states, based on sustainability.

6. Navigate and negotiate value conflicts or dilemmas that may arise in sustainability projects.

7. Critically reflect on one’s own norms, values, and preferences, compared to those of others.
D. Strategic Thinking

1. Explain concepts of strategic thinking, such as leverage points, transition agendas, feasibility, stakeholder alliances, and resistance.

2. Describe how strategic thinking can be successfully applied to sustainability problems and how sustainability can be incorporated into strategic concepts.

3. Measure the effectiveness of strategies against sustainability goals and targets on both the individual and the organizational level.

4. Select, modify, combine, and apply appropriate strategic thinking tools and methods (e.g. risk assessments; transition management; gap analysis; Strengths, Weaknesses, Outcomes, Threats [SWOT] analysis) for constructing strategies and interventions leading to sustainable solutions.

5. Critically reflect on one’s own approach to strategic thinking regarding effectiveness, alliances, and sustainability.
E. Interpersonal / Collaboration

1. Explain best practices of interpersonal communication and collaboration, teamwork, and project engagement.

2. Demonstrate teaming skills including conflict resolution, negotiation, compromise, trust building, professional conduct, and roles and responsibilities.

3. Analyze an audience in order to appropriately translate complex sustainability issues and convey effective messages using various communication platforms.

4. Facilitate outcome-oriented stakeholder engagement by employing empathy and respecting values, beliefs, and norms of others (race, gender, cultural traditions) in order to build fruitful collaborations.

5. Demonstrate leadership skills both as a team leader and team member by overcoming barriers to collaboration, motivating team members, resolving conflicts, ensuring the wellbeing of oneself and one’s team.

6. Demonstrate professional behavior as a team member and in stakeholder engagements by providing and receiving constructive feedback, coping with unanticipated challenges and high stress levels, navigating disagreement and misunderstandings.

7. Critically reflect on one’s own communication and collaboration preferences and approaches.