**Leadership in the Sciences: Tackling Wicked Problems**

Instructors:
Michael J. Carvan, Ph.D. 
Will Kort, Ph.D. 

Time: Mondays 5:30-8:10 PM

Place: GLRF 3093
Online as needed
3 credits

<table>
<thead>
<tr>
<th>Week</th>
<th>TOPICS</th>
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<tbody>
<tr>
<td><strong>Week 1</strong></td>
<td><strong>January 23</strong></td>
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<tr>
<td></td>
<td>Overview of course and syllabus</td>
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<tr>
<td></td>
<td>Introduction to wicked problems, and technical &amp; adaptive challenges</td>
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<td>Presentation of Wicked Scientific Problems</td>
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<td>Introduction to case study template and diagnostic for individual case studies</td>
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<td>Leadership Assessments assigned</td>
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<td>How to engage in online discussions.</td>
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| **Week 2** | **January 30** |
| Selection of Scientific Problems and Teams. |
| Project team building |
| Understanding Leadership for private and public sectors |
| Consulting process for organizations |
| Team discussions of project |

**Readings:**
- The Work of Leadership (Heifetz & Laurie)
- Wicked Problems & Clumsy Solutions: the Role of Leadership (Grint)
- Wicked Environmental Problems (Balint) Ch 1-2 (33 pages)
- Consulting on the Cusp of Disruption (Christtensen, Wang, & van Bever)

| **Week 3** | **February 6** |
| Understanding Leadership knowledge and behaviors. |
| Wicked Environmental Problems—examples |
| Discussion |

**Readings:**
- Game et al
- Levin et al
- Heifetz & Linsky: Intro, Chapters. 1-4
- Crosby & Bryson: Intro, Chapters. 1-4
**Week 4**  
*February 13*  
Student group work

**Week 5**  
*February 20*  
Leadership Assessment individual reports  
Presentation #1: Narrated Slide deck by team describing initial project information  
Discussion  
**Readings:**  
Heifetz & Linsky: Chapters 5 & 6  
Crosby & Bryson: Chapters 5-8, review Resources A-F (150 pages)

**Week 6**  
*February 27*  
Leadership & Coalition Building, Civic Engagement, Public Policy  
Identifying environmental problems (guests from private, NGO and public sectors)  
Discussion  
Readings:  
Heifetz & Linsky: Ch. 7-8 (42 pages)  
Crosby & Bryson: Ch. 9 (25 pages)

**Week 7**  
*March 6*  
TBD

**Week 8**  
*March 13*  
Student group work

**Spring Break**  
*March 20*

**Week 9**  
*March 27*  
TBD

**Week 10**  
*April 3*  
TBD

**Week 11**  
*April 10*  
Individual Leadership Development Portfolio project due  
Presentation 2: Process tool, collaboration tactic, or group method Tool for coalition building  
Discussion  
**Readings:**  
Heifetz & Linsky: Ch. 9-11 (65 pages)  
Crosby & Bryson: Ch. 10-12 (70 pages)
**Week 12**  April 17  
Student group work

**Week 13**  April 25  
Student group work

**Week 14**  May 1  
TBD

**Week 15**  May 8  
Final project due
Final project presentations

**COURSE MATERIALS:**

**Texts:**


**Optional**

**Consulting source information:**


**Process tool source information:**


Readings from science and leadership journals.
Assessments:
Leadership development assessments utilized in the course. These assessments are a mandatory part of the class and considered vital course materials.
Everything DiSC Workplace profile (w/project team comparison reports)
Motivation to Lead
Motivation Sources Inventory
Leadership Questionnaire

BROAD COURSE GOALS AND OBJECTIVES

This course extends your learning and practice into the role and relationships with individuals and groups in the leadership process in the public sector. Grounded in the concepts, practices, and literature of public leadership, with several select leadership assessments instruments for strengthening your leadership potential. The course represents a learning journey as an individual and in a team working on a science related project.

Learning Objectives:

1. Develop an understanding of public sector leadership practice and future concepts for leading through problems, identifying technical vs. adaptive challenges.
2. Reflect and analyze individual self-awareness of leadership strengths, public service values, emotional intelligence, and application to public leadership.
3. Develop a personalize leadership portfolio as a guide for future development of effective and ethical executive leadership capabilities.
4. Engage with others on a team project with an emphasis on interpersonal and facilitative skills for resolving ‘wicked’ public sector problems within and across public systems of action.

At the completion of this course, students should understand:
1. How public sector leadership is different from private sector leadership.
2. Ways to engage the public sector in identifying problems
3. How to facilitate across public systems to identify problems
4. Areas of self-awareness on strengths for leading in the public sector and identified areas for further knowledge and skills development for leading,
5. The responsibility of ethical principles in the public sector and leadership.
6. How group dynamics impact working on teams and with the public.

Learning Targets:

1. Critical thinking:
2. Metacognitive: Habits of the mind on own self-awareness and ethics.
4. Synthesis: Develop a working model on how group dynamics on a project and with the public sector requires some adaptive challenge work.
5. Analysis: Distinguish technical vs. adaptive challenges and direct for facilitating public sector work on these types of problems.

**EVALUATION:**

Final course grade will depend on your performance in each of the following areas. Assignments turned in late (less than one week) will be graded and receive 50% of their original point value. Assignments turned in more than one week late will not be accepted without permission of the instructors.

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Class participation</td>
<td>25%</td>
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<tr>
<td>Leadership Reflection</td>
<td>15%</td>
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<tr>
<td>Team Project</td>
<td>60%</td>
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<tr>
<td>Project Work</td>
<td>15%</td>
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<tr>
<td>Presentations</td>
<td>30%</td>
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<tr>
<td>Poster Session w/ public &amp; private entities</td>
<td>15%</td>
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**Leadership Reflection:**

Students will participate in assessing their knowledge, skills, behaviors and acumen for leading and leadership. At least one of the assessments will be a 360-degree assessment where students will invite a supervisor, peers, subordinates/followers, to provide a confidential rating of the leadership abilities. Students will be provided with a leadership development template to begin building an individual leadership plan that demonstrates current strengths and plans for further development of facilitation and leadership skills.

**Team Project**

Investigate public sector problems by selecting from an offering made available by the instructors where public leaders have already agreed to work with a project team.

**Presentation 1:**

Teams will create a case study, using a template provided, that focuses on a public sector problem from Greater Milwaukee. The students will gather information on a public sector problem by accessing resources, meeting with key experts on the problem, and other information. The key problems and some experts will be identified and provided by the instructors.

**Presentation 2:**

Demonstrate a process tool, collaboration tactic, or group method that works in the areas of stakeholder collaboration and coherence. Discuss how stakeholders are working in this area with additional recommendations for improvement. In a 10-15 minute class presentation, engage the rest of the
class in sampling and participating to understand the method and provide a handout to share with everyone in the class. (Crosby & Bryson text, others from Optional Resources, other resources)

**WhitePaper**
Teams are required to develop a white paper that integrates knowledge from the course using the wicked problem that is the focus of the course and affects the public sector. Teams will also present a 10 minute presentation of their white paper to demonstrate their understanding of leading and facilitating on a public sector problem. Students will evaluate the other students’ presentations and receive feedback from public leaders in an open session using a scoring rubric provided by the instructors.

**Participation expectations:**
The oral, poster, and case study presentations are peer evaluated and participation in these activities is mandatory. The class time is primarily discussion and information based upon the text and internet/library retrieval as part of the learning experience and is mandatory. Homework assignments are based upon progress in the classroom discussions and are mandatory. The format for the class is flexible by necessity to accommodate students coming from diverse fields.

**Time Investment:**
In comply with the Higher Learning Commission requirement and the US Department of Education, the course syllabus will provide information on the investment of time by an average student to achieve the learning goals in the course.

The amount of time that an average student should expect to spend on this class, in order to achieve the learning goals of the course, is given below:

- Time in direct discussion: 30 hours
- Time taking exams: 0
- Time completing assignments: 65 hours  
  Team project: 25  
  Team presentation 1: 10  
  Team presentation 2: 10  
  Poster session preparation: 12  
  Leadership Assessments: 3  
  Leadership Portfolio: 5
- Time for preparation and study: 15 hours
- Time spent reading materials: 20 hours
- Time in laboratories: 0
- Time in team preparation: 14 hours

The total number of hours: 144 hours (48 hours/credit)